

(1) Number of pages 3
(2) Date of repair 1. 6. 81
(3) Initials of the Referencer _____

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No.	4361	Press.
B.P. No.		Mis.
Dated	6 - 8 . 1877	197 .

Not to be folded or roughly handled.

GOVERNMENT OF MADRAS.
MARINE DEPARTMENT.

24th July 1877, No. 435.

Ports.

Read the following paper :—

No. 29. From C. J. LYALL, Esq., B.A., Under Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce, to the Superintendent of Marine Surveys, dated Simla, 9th July 1877, No. 391.

In reply to your letter, No. 24 (Surveys), dated the 28th ultimo, I am directed to state that the Governor-General in Council approves of the Programme of operations of the Marine Survey Department proposed for the ensuing season of 1877-78.

2. I am, however, to inquire whether on the return of Navigating Sub-Lieutenant Petley from leave, it will not be possible for you to start a third boat party in addition to those under Navigating Lieutenant Jarrad and Mr. M. Chapman.

No. 392.

Copy with extracts (paragraphs 3 and 8) from the letter to which it is a reply, together with a copy of the "Remarks on some Ports of the Madras Presidency," forwarded to the Government of Madras for information.

(By Order.)

(Signed) C. J. LYALL,
Under Secy. to the Govt. of India.

ENCLOSURE No. 1.

Extract (paragraphs 3 and 8) from a letter from the Superintendent of Marine Surveys, to the Secretary to the Government of India, Department of Revenue, Agriculture, and Commerce, No. 24 (Surveys), dated 28th June 1877.

3. His Grace the Governor of Madras having expressed a wish to know the present state of Cochin bar, and the probability of being able to increase the depth of water over it from 12 to 18 feet by means of the steam dredge *Albuquerque*, I instructed Lieutenant Hammond to proceed by rail to make the required examination of that place and also of some dangerous rocks off Beypore. The result has been explained in the annexed paper, and shall be one of the subjects of a further report.

8. The surveys on the Madras coast which I consider most urgent to be undertaken this season are, *firstly*, the coast below Hope Island lighthouse for about 16 miles. This I hoped to have been able to undertake this year with the loan of the small steamer at Cocanada (*see* printed REMARKS, paragraph 4), but, owing to Lieutenant Hammond's illness, the idea must now be abandoned; *secondly*, the Paumben Passage (*see* REMARKS, paragraph 9) which sadly requires to be surveyed on a large scale; *thirdly*, the roadstead and creek of Negapatam of which we now possess no chart whatever, although this important town is the terminus of a railway. The boat party, told off for the Madras coast under the charge of Mr. Morris Chapman, will be able to execute the surveys of Paumben and Negapatam during the current official year. It is possible this party might undertake the Hope Island coast in May next.

ENCLOSURE No. 2.

REMARKS on some PORTS of the MADRAS PRESIDENCY, after INSPECTION in April and May 1877.

It is now generally known in India that the coast line below False Point lighthouse, and so far as Bimlipatam has never been subjected to even a preliminary examination. That portion of the Indian seaboard stands therefore first on the list for an accurate survey, which, however, cannot be undertaken until a suitable, safe, and well-equipped steamer is provided. It is expected that a new vessel will be ready in the course of the next two years.

2. Gopaulpore, Calingapatam, Bimlipatam, and Vizagapatam shall then be well surveyed, and charts on adequate scales be published. But to meet the existing wants of navigation, I propose soon to issue hydrographic notices concerning all ports between Calcutta and Bombay, and containing more definite information than is furnished by my "India Sailing Directory." The light lately placed on Calingapatam Sandy Point proves a great benefit to coasting vessels when approaching the Santipilly rocks from the northward. When coming to Madras in British India Steam Navigation Company's Steamer *Goa* in April last, I had both Calingapatam and Santipilly lights in sight at the same time.

3. Cocanada requires a brief notice. Having known this port now for twenty years, during which great changes have taken place, I can only say that no possible works could have prevented those changes in the anchorage. The soft mud is its great security, and the Godavery river will keep up the supply of that, although the anchoring ground moves further northward every year. That movement may involve a corresponding periodical transposition of the Cocanada light, such as now is being effected. Dredging operations on a small scale may improve the mouths of Cocanada and Coringa creeks for the benefit of very small craft.

4. The survey of Cocanada bay, so recently executed by Lieutenant Hammond, R.N., shows the great changes the port has undergone in twenty years. The Department of Marine Surveys will, I trust, be able to re-examine the anchorage off Cocanada every two or three years, so as to keep the charts corrected. But I desire to point out that a thorough examination of the coast below Hope Island lighthouse, for at least 16 miles, or to the Sacramento shoal, is a desideratum, because reports have been made that the shallow water has been extending further offshore during the period, of nearly thirty years, which has transpired since last survey. If the small steamer at Cocanada could be lent for a month, I could send two officers to make the survey in fine weather. In communication with the Master Attendant of Madras I could easily arrange this, the expenses being debited to my department. Some years hence attention will be drawn to the necessity of a better position for the Hope Island light which marks the southern approach to Cocanada, and in the selection of a site, a careful survey is a prerequisite.

5. The next port southward is Masulipatam, once an important place, but during this century the bay has much silted up; and indeed this might have been expected, seeing that the port lies between the mouths of two great rivers—the Godavery on the east, and the Krishna on the west. However, Masulipatam still contrasts not unfavorably, as regards the distance offshore where vessels anchor, with Cocanada, Negapatam, and Tuticorin.

6. The bay of Masulipatam has shoaled since the last examination made by Lieutenant Fell about twenty-five years ago, and the existing chart is not much of a guide. There is need of a better survey of the entire bay from Divy Point to Narsapoor. The latter point is one of the prominent Capes of India, which has a large beacon, but should perhaps have a light, but I recommend a previous survey of the Point and the river entrance, so that local interests may probably be subserved thereby as well as those of coast navigation. I understand that country craft make much use of Narsapoor river in the fine season. We ought to have a survey of it also.

7. Periodical comparative examinations of Madras Roadstead will be required as the harbour works progress. Lieutenant Hammond's survey, which has extended the soundings for two miles northward and three miles southward of the screw-pile pier, will be published from the Department of Marine Surveys as soon as finished. I shall write again concerning the Madras survey when Lieutenant Hammond has sent in his work and report.

8. At present there is no chart of Negapatam, although it is the terminus of a railway. This port is, however, a mere open roadstead, where vessels of large size have to anchor four miles offshore because the water is so shallow. The creek is a very poor affair; but just enough to give shelter to cargo-boats, which, when laden, can enter or depart towards high water only, except when the bar has been deepened by freshets.

9. I went to Paumben Pass in the steamer *Margaret Northcote*, with Captain Phipps, Master Attendant of Tuticorin. An accurate survey on a large scale of the pass and its approaches is much wanted, and a few transit marks or beacons should afterwards be erected to facilitate navigation amongst the various reefs and islands. The only existing chart is on too small a scale, the breadth of a single numeral covers about four times the actual breadth of the passage. On the day of my visit, according to the angles taken at two or three places, either the dredge was working by the side of the channel, or else the chart is not correct. I was surprised to find nothing

better than an old hand-dredge at such an important place as Paumben. A good steam dredge would, I believe, soon gain a depth of 15 feet over both the shoal places where cutting and dredging have been going on by fits and starts for half a century. I think that a dredge like the *Albuquerque* would in a very short time deepen the pass to 15 feet, and thereby allow several of the British India Coasting Steamers to go through. The *Sir John Lawrence* now goes through when her draught is less than 12 feet.

10. We may dismiss to the next century all ideas of a ship canal through the Gulf of Manaar. The cost would be enormous, and the advantages to the shipping merely trifling; there would also be disadvantages. An accurate and elaborate survey on a large scale must precede all consideration of this question. Sunk rocks must be sought for by creeping, in order that we may be sure the approaches are clear. Several lighthouses are absolutely necessary to enable ships to make a good landfall; otherwise how could a navigator dare to rush by night into such a *cul-de-sac*? Captains of ships would by no means court the dangers of the Gulf of Manaar. The Owners of ships would begrudge paying 4 Annas per ton for passing through a canal, for the charge would amount to 1½ day's coal, and they would not, under most favorable circumstances, save more time than that by avoiding the circuit of Ceylon. Owners of cargo would not consent to payment of an extra penny to save a day's time. Underwriters would know that their risks were increased when vessels had to run into the Gulf of Manaar. Considering all these things, I fail to see any advantage commensurate with the cost of a deep ship canal.

11. The Maritime trade of the coast between Paumben and Tuticorin is confined to country sailing craft, which always take pilots at Keelakari or Paumben for the inner navigation amongst the islands. Captain Phipps, who has a most thorough knowledge of the Indian shore of the Gulf of Manaar, pointed out to me two or three admirably sheltered little anchorages where native vessels can lie safely in 13 to 15 feet water, between coral reefs and the mainland, throughout the south-west monsoon, and indeed all weathers. Keelakari and Yervadi are the principal places. In course of time I hope to get these anchorages surveyed on a large scale.

12. Cochin was also visited by me on the 1st and 23rd May. Before my arrival, Lieutenant Hammond, R.N., under my orders, had made an examination of the bar and inspected the dredge *Albuquerque* (his report has been already given to the Secretary to Government of Madras, in the Public Works Department). The merchants of Cochin are anxious that their river bar should be deepened by dredging, and the Government of Madras has obtained the *Albuquerque* for that purpose. But the difficulties are great and (I think) not generally understood. After examination of this port, just twenty years ago, I suggested that a steam rake might advantageously be used every fine season to scrape down (on the ebb tide) a narrow passage through the geously be used every fine season to scrape down (on the ebb tide) a narrow passage through the little ridge of sand which forms the bar and has at low water a depth of 13 feet. The utmost I expected of such an operation was that a depth of 15 feet at low water might be gained and retained during four or five months through that narrow ridge, so that vessels with a draught of 15 feet might be towed across the bar. The vessel for this purpose was to be both steam tug and rake, and I merely suggested this in anticipation that English builders and Engineers could carry out the idea if it met approval from the Government of Madras.

13. I never contemplated the possibility of dredging a channel with a depth of 18 feet right through the shallow water at the entrance of Cochin river. Inside the narrow ridge, which is the bar proper, the chart shows a plateau which is about 1,000 feet across, and carries only 15 or 16 feet over it. The most sanguine Engineer could hardly expect that the ocean swell and tidal streams of March would respect the trough he had succeeded in digging during December and January. Having been on that Malabar Coast at all times of year, I am bold to say that the dredge would not find 100 working days of six hours each, whilst Lieutenant Hammond estimated she would require 146 days of ten hours each. The ocean swell, raised by the north-west winds of March, April, and May, would play havoc with the newly dug passage, but the south-west monsoon swell of five or six months' duration would obliterate all traces of any trench dug in that movable sand.

14. If the dredge *Albuquerque* were taken to Paumben, she could do right good service there by deepening the passage to 15 feet, and even perhaps a foot or two more. There she would have smooth water for three-fourths of the year.

15. In the end of April, Lieutenants Hammond and Pascoe, R.N., examined the newly discovered rocks under water off Beypore. They are now buoyed and have been placed on the chart. These rocks have two pinnacles with only 8 feet water; around them there are depths of 16 and 17 feet. This reef lies in the line of 3 fathoms at low water, and may be considered dangerous because it seems to be the habit with some British India Steamers to land troops at a camp just abreast of this patch. Vessels drawing 17 or 18 feet frequently in the fine season cast anchor thereabout in 3½ fathoms; if this be done at high water they might easily tail on to this dangerous reef. Lieutenant Hammond has also furnished a good addition to the soundings off Beypore. On both occasions of my touching at that place and Calicut, the British India Steamers waited too short a time for me to land and inspect those places.

16. At Mangalore I landed and took angles to ascertain the present position of the river mouth. The result is shown in red on the accompanying copy of a chart which was executed by

me twenty years ago. I was also fortunate enough to find (among the records of the old Indian Navy at Bombay) an original report sent in to Government in the year 1857, which contained remarks concerning Mangalore. These have been printed, and I venture to think they may be of interest now. The changes which I anticipated (see printed report) have been brought about by nature notwithstanding many small endeavours, which in the aggregate were costly, to prevent the river mouth moving up northward.

17. Perhaps the chart and my report will suffice to show what my views were, and nothing has occurred to induce me to alter them. I think it will be good policy to try and keep the two steamers of Buntwall and Goorpoor as they now are. With this object in view I recommend that measures be at once taken to strengthen the narrow sand strip to the westward of the Marine yard. Considerable erosion is likely to take place there when the freshets come down, and, if that sandy ridge becomes breached by the sea, it would be a misfortune. Then would follow the annual repetition of a changed river mouth, which has caused so much trouble and annoyance at Mangalore for the last quarter of a century. I should also advise a revetment, somewhat like the parallel red lines on the chart, between the Custom House and Sultan's Battery. It should be fronted with close piling of palmyra or cocoanut trees in parts where erosion is greatest and the water is likely to be deepest. An accurate survey should, however, precede any determination of the line of bearing to be given to the revetment.

MADRAS,
9th June 1877.

A. DUNDAS TAYLOR,
Superintendent of Marine Surveys.

No. 30. ORDER THEREON, 24th July 1877, No. 435.

Communicated to the Master Attendant, Madras, and to the Collectors of Maritime Districts.

2. The Master Attendant will be requested to submit his views on the proposed deepening of the Paumben Channel by the *Albuquerque*.

(True Extract.)

D. F. CARMICHAEL,
Chief Secretary.

H. B. J. J.
Acting Under Secy. to Govt.

To the Master Attendant, Madras.
" Collectors of Maritime Districts.
" Revenue Department.
" Public Works Department.

Exd. J. Wright.

52

4361

27. 12. 82 (27-8-77)

Revenue Subalternant

C/o 3338

Govt. of 1877 *Madras*

MARINE. ✓

The MASTER ATTENDANT

No. 2930

Dated July 24th.

9/10

3 August

G.O. 290 July 1877, No. 453.

W. S. S. S.

JULY.
No. 2930

For the Commr. of the Port of India, forwarding certain correspondence together with a copy of the remarks of the Superintendent of Marine Survey on certain points in this Presidency, and requesting the Master Attendant, Madras, to submit his views on the proposed despatch of the Punt to Chennai by the 21st September.

44361

*Arrived at the
Board of Marine
6. Aug 77*