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MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No. 2482 Press / Mis.

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Dated 22-10-1942.

Not to be folded or roughly handled

P.W. 2482
29-10-72

Proceedings of the Madras Government, Marine Department,
29th August 1372.

No. 40. Read the following despatch from the Right Honourable the Secretary of State for India, to His Excellency the Right Honourable the Governor in Council, Fort St. George, dated India Office, London, 31st July 1872, No. 14 (Public Works):—

On receiving the letter from your Government in the Marine Department, dated the 16th of February last, No. 4, on the subject of the relative class of lights to be placed on Cape Comorin and at or near the Crocodile Rock, I referred the papers for the opinion of Commander Taylor, whose letter of the 11th of April is enclosed, with the chart marked in illustration of his views.

2. In compliance with your request that the question might be submitted for the views of any other persons competent to give a useful opinion on the subject, I caused the papers to be also forwarded to Mr. Franklin, late Superintendent of Marine at Madras, and Captain Selby, formerly of the Indian Navy, whose letters, dated the 3rd and 23rd of May, are herewith transmitted.

3. I further consulted the Board of Trade on the subject, and have in consequence been favoured with a memorandum by Rear Admiral Bedford, dated the 20th of June, and a letter from the Trinity Board, written on the 12th instant, of which I also enclose copies.

4. I trust that you will be enabled to arrive at a satisfactory conclusion on the subject, and I request that, while the question more immediately under notice, viz., the lighting of the southern extremity of India, is duly considered, the advantage, incidentally mentioned by several of the writers, of placing a light-house on the island of Minicoy may not be overlooked.

From Captain A. D. TAYLOR, Pensioned Commander, late Indian Navy, to the Under Secretary of State for India, dated Hastings, 11th April 1872.

The correspondence which you have done me the honour to forward, by direction of the Secretary of State for India in Council, concerning the selection of sites for light-houses near the south point of India, fully proves my former assertion, that a general system of lights for India needs to be well considered. I should be very sorry if my opinion were taken without due consideration of what led me to form it, and quite concur with the Master Attendant of Madras that this object should be viewed in all its aspects before the question is finally settled.

The coasting trade of India may have undergone a great change since my time; but sailing vessels still traverse the seas, and it does not suffice to arrange coast lights merely to suit the Captains of steam liners who double Cape Comorin. Captain Maccallum professes to plead "for all Commanders of every ship and steamer" passing that Cape. My desire also is to benefit the maritime public, and I shall be quite content to have my proposals set aside if unable to show reason for entertaining them.

Firstly.—I would brush away a few fallacies appearing in the correspondence and hindering a clear view of the question:—

1. The Master Attendant (in paragraph 5 of letter, 29th November) says of the "Crocodile," "it is only a danger to coasters," and notices, as a curious fact, that no ship was ever lost upon it. The explanation of this is easy—ships give it a very wide berth, although put to much inconvenience by so doing.

2. The *Thalia* frigate was not near Cape Comorin but some five leagues to the eastward, with conical peak (marked on chart) bearing W. ½S. Her Captain reported her to have been

the information of the Secretary of State for India, that the question regarding the "class of lights which should be respectively" placed at Cape Comorin and Cadiapatam Point or Kotah Islet is one I am unable to answer.

2. But, having read the correspondence forwarded, I can but fully endorse the opinions expressed by Commander Taylor, late Indian Navy, that the light to be placed on Cape Comorin is secondary in importance to the one which should be placed as near the "Crocodile Rock" as possible, for but little dependence can be placed on soundings taken from merchant vessels, and at night.

3. For vessels navigating Gulf of Manaar and running for west coast of Ceylon a light on Cape Comorin would doubtless be useful. A really good light on Cadiapatam Point, or Kotah Islet, if it can be managed, would give exceeding confidence to vessels running up and down the coast and to steamers standing in from westward. But, as I have said, Commander Taylor's letter is so exhaustive that I have no need to adduce other arguments in favour of a first class light being placed on Kotah Islet, or, if that is found too expensive or the islet itself too difficult of access in south-west monsoon, on Cadiapatam Point.

MEMORANDUM BY REAR ADMIRAL BEDFORD.

I observe that much stress is laid upon the necessity for guarding ships from Crocodile Rock, and for this purpose it is thought expedient to place the better light of the two in question in the vicinity of that danger.

Either light, however, would more than suffice to accomplish this object, so far as lights are capable of doing it, which is only in a limited sense, for neither at Kotah, Adumdah, nor at Cadiapatam would a light lead outside Crocodile Rock but merely give a direction. It is, therefore, more in the character of landfall and coasting lights that the question is to be regarded.

I observe also that the discussion has been somewhat narrowed by the desire to [illegible] order dioptric light, which is disposable, and I may remark at once that, at whichever position it may be decided to place it, the reduction of its illuminating power by making it a red light should be avoided. It is quite proper to illuminate both Cape Comorin and the vicinity of the Crocodile.

A fourth order dioptric revolving white light of the best kind should be capable of being visible at a distance of seventeen miles in an average state of the atmosphere, provided it has sufficient elevation, while a first order fixed dioptric light will scarcely be seen twenty miles off from the deck of an ocean steamer if the elevation of the light does not exceed 150 feet. There is consequently not that great difference to make it of so much importance where either light is placed.

Assuming a light to be on Minicoy (which seems very desirable), then a light in the vicinity of Crocodile Rock would occupy nearly a middle position, and, while a good landfall light is required for ships coming from the westward, a light on Cape Comorin is equally wanted for ships coming from Ceylon, and in the same degree also for coasters these lights would relatively prove beneficial.

The characteristics of the light near Crocodile Rock should mainly depend upon the disposition of lights upon the coast between it and Alleppy, a distance of about 110 miles. If, as is probable, the increase of the steam coasting trade should induce the intervention of a light, say at the salient point of Quilon, it would be desirable to make it a fixed light to distinguish it from the red light at Alleppy, and we arrive at the conclusion that a revolving light would be the best near the Crocodile, and a fixed light at Cape Comorin; but, if there be no intention of placing a light at Quilon, then the reverse arrangement at Crocodile Rock and Comorin would be preferable.

With respect to the site of the light near Crocodile Rock, it has been already shown that unless it be at the rock itself, neither Kotah, Adumdah, nor Cadiapatam would suffice to clear the danger without the indispensable precaution of a good cast of the lead in addition to the bearing of the light. The distance of the rock from either of these sites is sufficiently great to render its estimation a too uncertain element in the navigation; but fortunately the soundings afford an excellent check, and any one getting his ship into danger for want of availing himself of it should be held inexcusable. It is, however, a not unfrequent result that additional lights, by encouraging

a nearer approach to the dangers they are placed to guard, lead to additional casualties when not intelligently used.

The cost of erecting a light on Crocodile Rock will probably prevent its accomplishment, and although the nearer to the danger the light is placed the more readily its distance may, as a rule, be estimated, yet there may be local objections to selecting Kotah in preference to Cadiapatam Point, which those acquainted therewith are better able to decide.

With a light on Cadiapatam Point, coasters familiar with the navigation would probably pass inside the islands during favourable weather.

An accurate bearing of a sufficiently powerful light on Cape Comorin would undoubtedly assist in avoiding the Crocodile Rock; but, when it is remembered that an error of half a point in the bearing represents a distance of more than 1½ miles, the necessity for a wide margin must be evident. The distance also of the rock from Comorin is too great for trusting to a sector of red light from the latter to clear the former.

In conclusion, I may repeat that other considerations besides the guarding of Crocodile Rock must be looked at in deciding which of the two lights in question should be placed near that danger, and also that, as both would be beneficial as landfall lights, it seems desirable that neither should have a less elevation than 150 feet above the sea-level. Probably the India Office would wish to have the opinion of the Trinity House.

(Signed) G. A. BEDFORD.

BOARD OF TRADE,
20th June 1872.

From ROBIN ALLEN, Esq., Secretary, to the Assistant Secretary, Harbour Department, Board of Trade, dated Trinity House, London, E. C., 12th July 1872.

I am directed to acknowledge receipt of your letter, dated 26th ultimo, forwarding a communication and its enclosures, received from the India Office relative to the establishment of lights at [illegible] Rock off the Travancore Coast and on Cape Comorin, together with a memorandum by Rear Admiral Bedford upon the subject, and requesting the opinion of this Board thereon. In reply thereto I am to inform you that the Elder Brethren, having given careful consideration to the whole subject, are of opinion that a first order bright fixed light should be placed on the isle of Kotah at an elevation of, say, 200 feet. This light, the Elder Brethren would suggest, should be supplemented by an auxiliary red light to be shown from a window in the base of the tower, visible, say, five miles and extending over an arc from three cables outside the Crocodile Rock to one cable to the northeast of Adumdah Island. This arrangement would effectually cover those dangers in both directions, while the high fixed light would answer as a landfall and a departure light. If this proposal were carried out the Elder Brethren consider that a fourth order bright revolving light on Cape Comorin would be amply sufficient for vessels trading to the Gulf of Manaar.

I am also to state, with reference to the comparative cost of a light-house on Kotah Island or on Point Cadiapatam, that, in the opinion of this Board, a smaller outlay should not be allowed to weigh against the advantages offered to navigation by the former position, as a light on the latter, though it might point out the danger, would not afford the means of clearing it, but might, in some states of the weather, lead ships into danger.

In conclusion, I am desired to add that, in the opinion of the Elder Brethren, a light on the island of Minicoy would be an immense advantage to the rapidly increasing trade between Europe and India.

No. 41. ORDER THEREON, 29th August 1872, No. 216.

Communicated to the Public Works Department and to the Master Attendant, Madras, with reference to G. O. dated the 5th February 1872, No. 18.

(True Extract.)

Acting Under Secy. to Govt.

To the Public Works Department.
" Master Attendant, Madras, with the chart.

Exd. A. S. Rodgers.

Pub: Works 1872 Report
Govt. of {1872} Madras.
Bds of Govts for November

MARINE.

No 44404

To

THE PUBLIC WORKS DEPARTMENT,
&c., &c., &c.

Dated August, 20th.

Recd. 26th Sept.

Read.

G. O., 20th August 1872, No. 216.

AUGUST.
Nos. 40-41.

Communicating papers received from the Hon. Government on the subject of the relative class of Lights to be placed on Cape Comorin and at or near the Crocodile Rock.

No 381

No 2482-22 "Octobr 72

Despatch to Govt 9th Octobr 72

my hands on relating to the subject, and that I have made all enquiries in my power, and as the result of such investigations does not I think bear out altogether the conclusions at which the Government have been led to arrive. It appears to me that they should be more fully informed on these points with a view of the subject being disposed of once for all.

3. As regards the Light-house to be erected at Cape Comorin. If the Pamben Channel is ever made a Ship Canal, as is under contemplation, a 1st class Light at Comorin is essential. Moreover under all circumstances, as pointed out by the Master Attendant at Madras, in his letter printed with G.O. 13th September 1871, No. 262 in the Marine Department, a 1st class Light at Comorin is strongly recommended.

Even supposing that the Government are not prepared to sanction at the present moment a 1st Class Light for Comorin, at least let the Light-house be built of a height suitable for such a light being fixed thereon eventually. The height of such a Light-House should be 160 feet above the level of the sea, and as the site selected by me stands about 80 feet above that level, there remains but a height of 80 feet of Light-house to construct. At this height an angle of illumination of 230 has suggested by the Superintt of Marine, in his Statement recorded in G.O. 18th January 1868 No. 3) can I believe be easily obtained.

4. The accompanying sketch (enclosure A) shows the site which I recommend for the construction of the Light-house. It will be seen that it is well to the West of the thatched bungalow called the Residency, and it is immediately

in front of a small "devil-tree". A few Palmyrahs that may interfere, the view will have to be cut down, but not more than are required for scaffolding. In the vicinity of the site selected, there is ample space available for the quarters of the Superintendent and other servants who will be connected with the Light house, without in any way incommoding the Resident by their proximity, and it is still three distant from the back buildings of a whole street of Brahminical houses as well as the premises of an adjacent Pagoda - an objection which was raised by a former Resident to a clearance of the site originally proposed, by Lieut. Orchard R.E., to the East of the Resident's Bungalow.

5. A more thoroughly effete dried up looking place than Cumma

(Cumy Comary... the virgin maid) it would be difficult to find. Indeed it is almost sad to contemplate the sterile aspect of the place; and it appears to be therefore quite in keeping with the tradition that objections should have been raised to the construction of a Light house which might perchance pierce the obscurity in which the place is wont to dwell.

6. As regards the Light for the Crocadile Rock, viz. whether the Light house should be on the Kotah Islet or Kadiapatam, I am of opinion that the consideration of the following points will quite determine the question. Kotah, tho' called an Islet, is not properly speaking an Islet, still less an island. It is merely a

bare Rock which is completely washed over by the Sea during heavy weather. Even during the fine weather at the time of my visit in March last, it was impossible to land on it by boat, in consequence of the high Surf beating against it. A Catamaran might have approached it, but not being used to that mode of conveyance, I was fain to content myself with a view of the rock from a short distance off. I would call your attention, in this connection, to the remark on the Chart, tracing of which is enclosed, "Very heavy surf beats all along the coast. Catamarans only are used."

7:- The construction of a Light-house on the Kolah Rock appears to me therefore, quite out of the question, for the following reasons.-

a- The excessive cost of such a structure

which would be at least ten times that of a Light house on the main land.

b- If a Light-house is to be constructed to indicate the Crocodile Rock; and expense is no object, it would clearly be advisable to select that Rock itself as the site for the same.-

c. If, however, the expense of such an undertaking be considered deterrent, as it surely is, the Light-house should be built on the rock nearest to it, and this is not the Kolah islet" but the Adumdah rock. An inspection of the Chart will show that Adumdah is not only nearer to the 'Crocodile' but nearer to the main land than Kolah is. Besides which the Cove of Mootum is very favorable for the transport of materials to Adumdah whereas this is not the case in regard to

to Kotah. It is true, as stated by Captain Taylor, in his letter printed with the G.O. above quoted, that Kotah is better for shipping running down the Malabar coast. But is not clear why consideration is not to be given for shipping running up that coast, for which latter shipping Adundah is of course the preferable site.

4. The objection to Adundah however is that although less inaccessible than Kotah, it is not easily accessible from the mainland; and moreover there is no space on the rock (and the same remark applies to Kotah) to accommodate the Light house superintendent and the servants, so that they would all have to live and cook in the Light house itself. In a temperate climate this would perhaps not be so great an

objection, but in a tropical climate, the objection is fatal, for what Government could justify the maintenance of its trustworthy servants in such a dismal prison, when there was no actual necessity for such confinement.

5. It must be borne in mind, moreover, that it is not only the original cost but the future maintenance of a Light-house on either islet that would be so excessive, as compared with that of the maintenance of a Light house on the mainland.

6. With all these difficulties staring us in the face, and the undisguised fact that a Light-house providing the minimum amount of accommodation and the maximum amount of inconvenience and discomfort, can only be built on either of the so-called islets, at a cost of not less than ten times that of

of erecting on the main land, at Kadiapatam, a substantial Light house with separate and ample accommodation for the Light house Superintendant and detached quarters for his subordinates, the question of the erection of a Light house on either of these islets assuredly needs to be no further discussed. With the system I propose nothing further is required at Kadiapatam than a 4th class Light. And as the site recommended by me is about 75 feet above the level of high water mark, the shaft of the Light need not be more than 40 feet high. I may mention that the Light house would stand upon a fine substantial foundation of lime-stone rock, and that building materials of excellent quality, and good water are obtainable in the vicinity.

9. It is only proper, however, for me to point out here that an objection has been suggested to the proposal of erecting the Light house on the main land, on account of the mist occasioned during the monsoon by the surf. It is difficult to believe that this mist would rise 100 feet high, but whatever may be the height that this surf-mist may attain on shore, it can never assuredly equal the height of that over either of the islets in question, and therefore this objection may also be set aside.

10. The site selected for the Light house at Kadiapatam is, as will be seen from the accompanying trace (enclosed B), directly in a line with the Crocodile over the Adumdah islet. This line lies S.W. by S. ½ S, as shewn by the red line on the trace. I propose that the Light

should

should be a red Light with a white streak on the Crocodile. On Adumdah itself I would recommend that a beacon be fixed 20 feet high, with a hooped iron head say 5 feet high × 3 feet wide. This beacon and its fixings should of course be obtained from England.

11. The total approximate cost of the services now recommended by me are as follows.

Light House at Cape Comorin	Rs. 11,750
Do Kadiapatam	10000
Beacon at Adumdah	1000
Total	Rs. 22,750

Whereas I estimate at 1 Lakh of Rupees the minimum cost of a Light-house on Kolah islet, and I may add that, personally, I should be sorry to be tied down to that amount for the erection of a suitable Light house, in such a locality.

12. It will be remembered that the Master Attendant, Madras in para 6 of his letter printed with the G. O. in the Marine Department, already quoted, distinctly states that he had conversations with "His Highness the Maharajah of "Travancore and the Dewan regarding the proposed light at Cape Comorin, and they both hold the same "opinion as I do, that, instead of "only one light on the Southernmost "point of the Continent of India, "two lights are required, viz. one "first class light on Cape Comorin, "and a fourth class light on Point "Kadiapatam, the expense of the "latter one to be borne by the Travancore Government. I had of "course also conversations with the Resident, who seemed disposed "to take the same views on the subject."

13. It would appear, however, from the letter from the Dewan of Travancore printed

printed with G.O. 28th October 1871 × Vide G.O. 9th 69-9th Nov. 71 S.W.A.
No 297, also in the Marine Department, that in the interim other counsels had prevailed - for the Dewan, tho' admitting that "a light at or near Kadiapatam will probably in an incidental manner benefit shipping resorting to our little port of Colachel," contents himself with stating that His Highness's Government, will if desired to do so contribute to the expenses of the light by levying "moderate "light dues from the shipping resorting to that port, and to make the net collection over to the British Government". This is indeed a vast falling off!

14. I have been informed that this change of opinion on the part of the Travancore Government has been caused by the consideration on their part of the fact that in building, at a considerable expense, a Light-house with a first class light at

Alleppey, they have done all that can fairly be expected of them in the way of Light houses, for quasi Imperial purposes.-

15. I would submit, however, that a Light house is ordinarily constructed for one of two reasons, either as a beacon, or as a port-guide - As a beacon, surely of all places in the World Alleppey is about the last place that a Light house for such a purpose is required. As a port-light of course its use is obvious, but it is difficult to understand why a third class light should not have been considered ample. I merely mention this because it would appear that the Travancore Government having once promised to erect, at their cost, at or near Kadiapatam, a Light house which they acknowledge will be of use to their only Port, appear now to hang back

19(a)

back from doing so for reasons which appear to me logically untenable. In any case the levying of port dues, as recommended in the Dewan's letter above quoted is not the re-commended. There are port dues at Cochin and at Tuticorin, and it does not appear advisable to tax fur-ther the shipping on these coasts.—

16. Be this as it may, I would now suggest that the Government be pleased to allot funds for the construction of the Light house at Cape Comorin, as per Plan and Estimate sanctioned in G.O. 11th January 1870, No. 132. This plan was prepared by Lieutenant Shepherd R.E., and provides as economical a structure as can well be desired. As this Estimate does not include the cost of the Light itself, it will be for the Government to determine whether they will supply, in the first instance, a first class light, as recom-mended

by the Master Attendant, and as I sincerely will eventually be required, or whether they will prefer to adhere to their former decision of fixing a third class light at the outset on the column. I venture to re-commend that the cost of the erection of the Light house be charged to Imperial funds, and that of its maintenance to debi-ted to Provincial funds.—

17. As regards the Light-house at Vadapatam, should the Government on re-consideration of this subject be pleased to sanction the proposal herein made for a fourth class light, I will at once submit the draw-ings for the same, or indeed for any such building as the Government may decide upon. I would recommend that the funds for the construction and maintenance of this light house be

be provided for, as recommended above for that at Cape Comorin.

18. I should mention that my trip up the coast was made in company with Captain Phipps, the Master Attendant at Tuticorin, and Executive Engineer Mr. Rundall, and that both of these gentlemen coincide with the views now put forward. The trip could not be made until after the end of the monsoon. Indeed Captain Phipps recommended that it should not be attempted until the end of January. My special duties and the Collectors arrangements in regard to the S.S. "Margaret Northcote," which Mr Pickle very kindly placed at our disposal for the purpose, did not enable me to manage the trip before the middle of March. And at this, the quietest time of the year, the surf was beating against the islets, with such force,

as

as I have already mentioned, that they were quite unapproachable except by a Catamaran! I feel satisfied that the difficulty of access to Kotah Islet has in no ways been exaggerated, and the outlay of money required to erect a light house on this Rock would entail an expenditure of public money which, under existing circumstances, would in my opinion be quite unwarrantable.—

19. On my return from the Western coast many pressing duties engaged my attention, and I can but express my regret that the submission of this report, laid aside for the moment, should have been overlooked and only be forwarded at this late date.—

I have the honor to be
Sir
Your most Obed Servt

Rich. A. Roberts Lieut Col R.E.
Superintending Engineer
8th Div

Compd
S.O.

Ans: of Gov^r & Co. 3892.
The cust: requested
& ans.

To the Secretary of Int.
Affairs.

Encl 5.
Let: 423 August 7, 72

Ens: 2 Plans.

Requests an appropriation for
Houses & be built at
Cape Romain & Bull
Islet: and requests in-
structions in the premises
should Congress make any ap-
propriation for the con-
struction of the Light Houses
in the Sanctuary &c.

No 379
Office Light Houses 14th August 1872