28th July 1887, No. 732, Revenue.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following Proceedings of the Board of Revenue (Land Revenue), dated 18th June 1887, Mis. No. 1416 :—

H. S. Thomas, Esq., f.l.s., f.z.s.

Read—the following letter from E. GIBSON, Esq., Acting Collector of Tanjore, to the Secretary to the Commissioners of Land Revenue, dated Vallam, 23rd May 1887, No. 239 :—

I have the honor to forward herewith an estimate for converting the school-building of the St. Joseph's College at Negapatam into a taluk cutcherry, amounting to Rs. 4,420, together with the report of the Superintending Engineer, No. 184 T.J., dated 1st May 1887, and request that you will be pleased to obtain the sanction of Government for the same.

2. Four plans and an alternative estimate for putting corrugated iron roof (which, however, is not recommended) over jail wards, received from the Superintending Engineer, are herewith forwarded.

Reference thereon, dated 1st June 1887.

The plans received with the foregoing letter are herewith returned to the Collector for countersignature with reference to section 988 of the Public Works Code.

Read—also the following letter from the Collector of Tanjore, to the Secretary to the Land Revenue Commissioners, dated 10th June 1887, No. 296 :—

I have the honor to return herewith, duly countersigned, the four plans received with the Board's reference on General Register No. 836 of 1887.

Resolution—dated 18th June 1887, Mis. No. 1416.

The plans and estimates for Rs. 4,420, for converting the old St. Joseph's College school-building into a taluk cutcherry, are submitted for the sanction of Government and for the provision of funds in the budget of the Public Works Department.

2. An alternative estimate for putting on corrugated iron roof over the prisoners' wards is also submitted, but the Collector does not recommend it and the Superintending Engineer considers the terrace preferable to iron roof. If the latter is ordered, an additional provision of Rs. 167 will have to be made. A corrugated iron roof would probably make the building so hot and cold by turns that it would be very unhealthy.

3. Early sanction of Government is requested for the work being put in hand, as it is represented that prisoners are now kept at the old cutcherry cells which are at the other end of the town and their transfer to the tahsildar's cutcherry is highly desirable.

(A true Copy and Extract.)

(Signed) M. HAMMICK,
Acting Secretary.

To the Secretary to Government, Revenue Department,
with letter (G.R. No. 836 of 1887) and seven
enclosures in original to be returned.

Copy to the Collector of Tanjore.

Order—dated 28th July 1887, No. 732, Revenue.

Miscellaneous.

The Government consider that the plan for converting the old St. Joseph's College school-building into a taluk cutcherry and sub-jail, submitted with the foregoing, should be revised, so as to conform, as far as possible, to the standard design recently* sanctioned. The following alterations, &c., which are roughly indicated in pencil on the plan, appear desirable: —

* G.O., dated 3rd June 1887, No. 1495-W.

(*a*) The tahsildar's court is far larger than is at all necessary. A portion of it should be cut off, with a cross wall, and added to the clerks' room, from the western side of which an addition should, in a similar manner, be made to the record-room for which sufficient space has not been allowed. A dais should be provided for the Court-house.

(*b*) A wall should be built across the "retiring room" so as to form a "property room" and an addition should be made to the former by taking in a portion of the clerks' room which is much roomier than is requisite.

(*c*) The treasury is far larger than is necessary. Iron gratings should be run up as shown in the plan and the proposed passages converted, the one into a police-station and place-of-arms and the other into an inspector's room, the wall on the west side of the room marked "sheristadar" in the plan being thrown back to the eastward so as to give more space for the inspector. It seems advisable that the room intended for the sheristadar should be assigned to the cashier, a fresh room for the sheristadar being formed by cutting off a portion of the northern clerks' room. If this is done it would be desirable, in order to avoid the necessity for the cashier's passing through the inspector's room, to construct a passage, as marked in pencil, at the south-western end of the cashier's room. If this arrangement is not thought by the Collector a good one, the sheristadar might have the room allotted to him in the plan, the cashier be located in that next to the treasury, and the inspector given accommodation in the room to be formed at the western end of the clerks' room. Whatever is done, however, care should be taken that a free passage is left for the sentry to walk all round the treasury, that is, through the place-of-arms and inspector's room.

(*d*) The arrangement of the jail is not at all a good one, as it provides for wards opening, some in front of the building and some in rear. The doors should all face one way and in the rear wall there should be ventilating windows so high up as to prevent prisoners communicating with persons outside. The cross walls should therefore not be erected and the wards should be constructed as indicated in pencil on the plan.

2. As a corrugated iron roof is considered unsuitable for the reasons mentioned by the Board, the estimate should provide for a terraced roof.

3. The plan and estimate are accordingly returned, and orders will issue in the Public Works Department for the preparation, in consultation with the Collector, of a revised plan and estimate in the light of the foregoing remarks.

(True Extract.)

(Signed) J. F. PRICE,
Ag. Secretary to Government.

To the Public Works Department, with four maps and five enclosures.
„ the Commissioners of Land Revenue.
Copy to the Judicial Department.

Exd. W. H. French.

80 Copies.

P. W. D

No 2265 W a/23d August/87

Communicated to the Supt. Engr. VI Circle who will in consultation with the Collector, prepare and submit revised plan and estimate for converting the St. Joseph's College school building at Negapatam into a Taluq office and Subjail

Sd/ J. H.

Supg: Engr VI Circle with 14 Encls.

Rev: Dept.

Govt. of {1887} Madras.

REVENUE.

Issued

Recd. *Encl.*

G.O., 28th July 1887, No. 732.

No 2265 W a/23d August/87

JULY.

Taluk Cutcherry.

Returning plan and estimate for converting the old St. Joseph's College building at Negapatam into a — to the Public Works Department for revision as indicated by this department.

Order

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

From T. E. MARSHALL, Esq., Acting Port Officer, Madras, to the Chief Secretary to Government, dated 7th July 1887, No. 6058.

I have the honor to submit the accompanying report on the Madras lights for the official year 1886-87.

ENCLOSURES.

REPORT on the Lights of the Madras Presidency for the official year 1886-87.

During the official year 1886-87, the following changes, &c., were made in regard to some of the lights of this Presidency. The country-made light exhibited at Hope Island was removed, and a 4th order dioptric white fixed light exhibited in lieu on the 22nd May 1886; and the 4th order dioptric light at Santopilly was replaced by a 2nd order dioptric fixed white light on the 24th September 1886. Two red lights, one on the end of each of the two groynes at Cocanada, were exhibited on the 15th September 1886, to serve as a guide to boats entering or leaving the river. It was decided that the new light proposed to be exhibited at the Seven Pagodas should be a red one, and a sum of Rs. 10,125 was sanctioned for erecting a platform for the light, and constructing quarters, &c., for the Superintendent and light-keepers. The necessity of a light at Manapaud on the Tinnevelly coast to warn vessels off the dangerous shoal in its vicinity was represented to Government, and the exhibition of a 6th order red dioptric light at that place was sanctioned. The annual inspection of lights were made by the Chief Engineer, Public Works Department, and the Port Officer, Madras, in February last. The lights of this Presidency were maintained in an efficient state, with the exception of the Pámban light, which did not compare favorably with the rest, and recommendations were made by the above-named officers for its improvement. The lights are distributed as shown below—thirteen on the East, and seven on the West Coast. Their establishments may be summarised as follows—four Superintendents on Rs. 70, three on Rs. 100, and one on Rs. 125, besides seventy-eight Assistant Superintendents and light-keepers, whose salaries range at Rs. 21, 15, 12, 11, 10, 9, 8, 7, and 6 per mensem. The total expenditure for the year on account of establishments and other charges amounted to Rs. 61,909-0-5, viz., establishments, Rs. 16,734-6-6; contingencies, Rs. 31,093-3-9; and Public Works charges, Rs. 14,081-6-2. All the lights now use kerosene-oil, with the single exception of the Madras lighthouse, which burns cocoanut-oil.

East Coast Lights.

1. Gopálpur	Flagstaff	3rd Order	Country made.	Fixed	White.
2. Calingapatam	Lighthouse	3rd Do.	Do.	Do.	Do.
3. Santopilly	Do.	2nd Do.	Dioptric	Do.	Do.
4. Vakalapudi	Do.	4th Do.	Catoptric	Revolving	Do.
5. Hope Island	Do.	4th Do.	Dioptric	Fixed	Do.
6. Masulipatam	Flagstaff	6th Do	Do.	Do.	Do.
7. Point Divi	Lighthouse	4th Do.	Do.	Do.	Do.
8. Armeghon	Do.	4th Do.	Do.	Revolving	Do.
9. Pulicat	Do.	4th Do.	Do.	Fixed	Do.
10. Madras	Do.	English	Catadioptric	Reciprocating, flashing.	Do.

West Coast Lights.

11. Negapatam	Lighthouse	4th Order	Dioptric	Fixed	White.
12. Pámban	Do.	4th Do.	Catadioptric	Do.	Do.
13. Tuticorin	Do.	4th Do.	Dioptric	Do.	Do.
14. Muttum	Do.	1st Do.	Dioptric	Do.	Do.
15. Cochin	Do.	4th Do.	Catadioptric	Do.	Do.
16. Beypore	Flagstaff	A globular lantern.	..	..	Red.
17. Calicut	Lighthouse	4th Order	Dioptric	Fixed	White.
18. Tellicherry	Do.	6th Do.	Do.	Do.	Do.
19. Cannanore	Do.	6th Do.	Do.	Do.	Red.
20. Mangalore	Do.	4th Do.	Do.	Do.	White.

STATEMENT of Expenditure of Lighthouses of Madras Presidency for 1886-87.

	Amount. RS. A. P.	Total. RS. A. P.
Gopaulpore Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	191 12 0	
Oil	135 0 0	
Stores	25 8 0	
Contingencies	70 3 7	
		542 7 7
Calingapatam Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	192 0 0	
Oil	670 0 10	
Stores	114 2 0	
Contingencies	47 9 10	
		1,143 12 8
Santopilly Lighthouse.		
One Superintendent	840 0 0	
One Assistant Superintendent	180 0 0	
Four Lascars	360 0 0	
Oil	675 0 0	
Stores	61 8 0	
Contingencies	125 6 7	
Value of Dioptric Light	21,715 13 4	
Public Works charges for repairs	382 7 1	
		24,340 3 0
Vakalapudi Lighthouse.		
One Superintendent	1,320 0 0	
One Assistant Superintendent	168 0 0	
Four Lascars	360 0 0	
Oil	180 0 0	
Stores	92 12 0	
Contingencies	107 0 2	
		2,227 12 2
Hope Island Lighthouse.		
One Superintendent	840 0 0	
One Assistant Superintendent	144 0 0	
Four Lascars	372 0 0	
Oil	90 0 0	
Stores	72 11 4	
Contingencies	97 2 3	
Public Works charges for repairs	1,748 14 5	
		3,364 12 0

	Amount. RS. A. P.	Total. RS. A. P.
Masulipatam Light.		
Two Lascars	168 0 0	
Oil	108 0 0	
Stores	8 10 0	
Contingencies	17 1 2	
		301 11 2
Point Divi Lighthouse.		
One Superintendent	840 0 0	
Five Lascars	431 15 11	
Oil	108 0 0	
Stores	40 9 4	
Contingencies	49 1 3	
Public Works charges for repairs	22 3 8	
		1,491 14 2
Armeghon Lighthouse.		
One Superintendent	1,200 0 0	
Five Lascars	396 0 0	
Oil	135 0 0	
Stores	144 3 7	
Contingencies	75 9 10	
Public Works charges for repairs	2,394 15 1	
		4,345 12 6
Pulicat Lighthouse.		
One Superintendent	914 14 4	
Five Lascars	396 0 0	
Oil	180 0 0	
Stores	335 5 4	
Contingencies	122 3 9	
Public Works charges for repairs	2,158 10 7	
		4,107 2 0
Seven Pagodas Lighthouse.		
Public Works charges for constructing light-house, &c.	5,174 10 6	
		5,174 10 6
Madras Lighthouse.		
One Superintendent	*1,500 0 0	
One Assistant Superintendent	252 0 0	
Four Lascars	504 0 0	
One Sweeper	12 0 0	
One Washerman	12 0 0	
One Toty	12 0 0	
Oil	2,023 2 0	
Stores	384 12 6	
Contingencies	36 8 6	
		4,736 7 0
Negapatam Lighthouse.		
One Assistant Superintendent	120 0 0	
Two Lascars	180 0 0	
Oil	175 0 0	
Stores	28 3 4	
Contingencies	42 7 2	
		545 10 6

* Including house-rent 25 rupees per mensem.

	Amount. RS. A. P.	Total. RS. A. P.
Pámban Lighthouse.		
One Assistant Superintendent	120 0 0	
One Lascar	96 0 0	
Oil	135 0 0	
Stores	35 11 4	
Contingencies	39 10 0	
		426 5 4
Tuticorin Lighthouse.		
One Assistant Superintendent	144 0 0	
Four Lascars	360 0 0	
Oil	127 8 0	
Stores	37 4 0	
Contingencies	41 9 3	
		710 5 3
Muttum Lighthouse.		
One Superintendent	1,500 0 0	
One Head Light-keeper	180 0 0	
Four Lascars	336 0 0	
Oil	1,050 0 0	
Stores	291 4 6	
Contingencies	179 9 9	
Public Works charges for repairs	1,788 6 7	
		5,325 4 10
Cochin Lighthouse.		
One Assistant Superintendent	144 0 0	
Two Lascars	202 0 0	
Oil	135 0 0	
Stores	18 2 0	
Contingencies	21 9 5	
Public Works charges for repairs	165 4 1	
		685 15 6
Calicut Lighthouse.		
One Assistant Superintendent	120 0 0	
Three Lascars	276 0 0	
Oil	120 0 0	
Stores	29 5 3	
Contingencies	34 8 11	
		579 14 2
Beypore Lighthouse.		
One Light-keeper	120 0 0	
Oil	60 0 0	
Stores	32 8 0	
Contingencies	17 11 3	
		230 3 3
Tellicherry Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	180 0 0	
Oil	90 0 0	
Stores	11 3 4	
Contingencies	28 7 6	
Public Works charges for repairs	207 3 2	
		636 14 0

	Amount. RS. A. P.	Total. RS. A. P.
Cannanore Lighthouse.		
One Assistant Superintendent	120 0 0	
One Lascar	92 0 0	
Oil	72 0 0	
Stores	9 2 0	
Contingencies	11 14 6	
		305 0 6
Mangalore Lighthouse.		
One Assistant Superintendent	120 0 0	
Four Lascars	357 12 3	
Oil	102 0 0	
Stores	16 8 4	
Contingencies	51 14 9	
Public Works charges for repairs	38 11 0	
		686 14 4
Total ..		61,909 0 5

LIST OF LIGHTS IN THE MADRAS PRESIDENCY.

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.	Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward.)	Nature of construction, color, or any peculiarity of light house.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
		N.	E.						FEET.	FEET.					
Gopálpur ..	On mainland, sixty yards from low-water mark.	DEG. M. S. 19 13 0	DEG. M. S. 84 52 0	1	White.	Fixed..	..	MILES. 10	85	..	180° or the whole sea horizon.	Flagstaff painted white.	Third class, country-made.	1871.	Intended as a guide to vessels making the anchorage at night, and exhibited at the special requisition of Commanders of the British India Steam Navigation Company's Mail Steamers.
Calingapatam ..	On the Point ..	18 19 0	84 7 30	1	Do. ..	Do. ..	..	8	68	73	..	Obelisk of cut stone, column white, capital dark blue.	Do. ..	15th December 1876.	Intended to warn vessels off a small reef, which projects from the Point, and which should not be passed in less than eight fathoms, when making the port at night.
Santopilly ..	On Santopilly Hill, three-quarters of a mile inland.	18 4 56	83 37 35	1	Do. ..	Do. ..	..	14	173	32	180°, facing S.E.	On the roof of a house.	Dioptric, 2nd order.	1st November 1849; improved 1871; present light 1886.	Exhibited to warn mariners off the Santopilly Rocks, from which this light bears N.W. $\frac{5}{8}$ W., distant $6\frac{3}{4}$ miles.
Cocanada (Vakalapudi.)	Four-and-three-quarter miles north of Cocanada river, 500 yards from the shore.	17 0 40	82 16 30	1	Do. ..	Revolving.	A flash every 10 seconds.	14	80	76	In every direction seaward.	White column..	Catoptric, 4th order.	15th January 1879.	This light is intended to lead vessels clear of the shoals to the northward of Point Godavári, when coming into the Cocanada anchorage from the southward and eastward. At Cocanada, two red lights, one on the end of the north groyne and the other on the end of the south groyne, at the entrance of the river, are exhibited to serve as a guide to boats entering or leaving the river.
Coringa or Hope Island.	On the southern part of Hope Island and distant about two-and-a half miles from the sea.	16 49 5	82 18 58	1	Do. ..	Fixed.	..	14	83	94	180° from north, 20° east to south, 20° west.	Masonry tower, horizontal alternate bands of black and white.	Dioptric 4th order.	1817; improved 1886.	Intended to lead vessels clear of the rocks and shoals off Godávari Point.
Masulipatam ..	In the Fort ..	16 9 15	81 9 25	1	Do. ..	Do. ..	..	6	69	112	180°	Flagstaff ..	Dioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
Point Divi ..	Two miles N. W. of Point.	15 58 55	81 9 25	1	Do. ..	Do. ..	..	14	$48\frac{1}{2}$	50	225°, or from north through west to south-west.	Masonry column, white.	Dioptric, 4th order.	1st May 1851; improved 1870.	Is intended to point out the position of the danger.
Armeghon or Armogham.	Mainland, village of Moona or Moonapollium.	13 53 8	80 11 47	1	Do. ..	Revolving.	A flash every 20 seconds.	14	107	111	180°, or the whole sea horizon.	Do. ..	Do. ..	1st January 1853; improved 1870; present light 1881.	Warns vessels off the Armeghon shoal, the shoalest part of which ($1\frac{3}{4}$ fathoms) lies six miles off shore.
Pulicat	Near the beach ..	13 25 15	80 19 6	1	Do. ..	Fixed..	..	14	68	57	180°, or the whole sea horizon.	Masonry column, white, with black bands.	Do. ..	1859; improved 1870; altered 1881.	To guide vessels clear of the Pulicat shoal. When the light bears W. $\frac{1}{2}$ N., a vessel is to the northward of all dangers.
Madras	On Esplanade north of the Fort.	13 5 11	80 16 51	1	Do. ..	Flashing.	Light has five faces, and every minute one face flashes towards the same spot, but three faces are presented seaward at one time.	20	128	125	310°, facing east.	Granite column.	Catadioptric ..	1st January 1844.	To guide vessels clear of the Pulicat shoal and into the roadstead. Mariners should not bring this light to southward of S.S.W. $\frac{1}{2}$ W. to avoid Pulicat shoal.
Negapatam ..	On bastion ..	10 45 30	79 50 20	1	Do. ..	Fixed.	..	14	$79\frac{1}{2}$	83	180°, or the whole sea horizon.	Mosonry column, white.	Dioptric, 4th order.	1st August 1846; improved 1870.	As a guide for vessels to the anchorage.
Pámban Pass ..	On a sand hill about one mile east of northern channel.	9 17 14	79 12 38	1	Do. ..	Do. ..	..	14	97	72	All round the compass.	Circular masonry column.	Catadioptric, 4th order.	21st April 1846; improved 1860.	Is a guide to vessels making for the Pámbam channel.

LIST OF LIGHTS IN THE

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.
		N. DEG. M. S.	E. DEG. M. S.					MILES.
Tuticorin ..	North extreme of Hare Island or Paundiantivo, 2½ miles east of Tuticorin.	8 47 10	78 11 20	1	White.	Fixed.	..	14
Muttum (Cadiapatam.)	A rocky promontory known as "Muttum Point."	8 7 30	77 18 10	1	Do. ..	Do. ..	..	20
Cochin	On a small mound, which formed a bastion of the old fort to the south of the harbour.	9 57 47	76 13 45	1	Do. ..	Do. ..	..	15
Calicut	On the sandy beach.	11 15 5	75 45 35	1	Do. ..	Do. ..	..	14
Beypore ..	Near the beach ..	11 10 0	75 47 0	1	Red ..	Do. ..	..	5
Tellicherry ..	On the fort wall near the beach.	11 44 50	75 28 30	1	White.	Do. ..	..	8
Cannanore ..	On the fort rampart near the beach.	11 51 10	75 21 45	1	Red ..	Do. ..	..	6 to 8
Mangalore ..	On a hill above the town, and near some high trees.	12 52 17	74 50 8	1	White.	Do. ..	..	14

MADRAS PRESIDENCY—*continued.*

Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, or any peculiarity of lighthouse.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
FEET.	FEET.					
85	91	All round the compass.	Sandstone column, colored brown, lantern white.	Dioptric, 4th order.	15th May 1845; improved 1874.	As a guide for vessels to the anchorage.
132	72	All round ..	Dark grey granite column.	First order dioptric.	1st January 1883.	This light, in the territory of Travancore, is intended to mark the vicinity of the Crocodile Rock.
100	91	270°	White laterite column.	Catadioptric, 4th order.	1st April 1839; improved 1868.	Harbour light. During the S.W. monsoon, when Cochin port is avoided by shipping, a small light is exhibited from a flagstaff at Narakal, about five miles to the northward of Cochin.
102	98	180° seaward ..	White column ..	Dioptric, 4th order.	1847; improved 1881.	To guide vessels to the anchorge clear of the reef, which lies about one mile S. 30° W. from the light. A small red light is exhibited from the head of the pier as a guide for small coasting craft, when entering the port.
60	..	180°	Flagstaff ..	Globular lantern.	17th February1883.	As a guide for vessels to the anchorage.
70	..	158°, or between the bearings of S. E. by E. and N.W. by N.	Small masonry tower.	Dioptric, 6th order; Chance's port or signal light.	1835; improved 1870; transferred to tower 1881.	Harbour light.
64	25 from the rampart.	180°	Small masonry tower of a light yellow color.	Dioptric, 6th order.	17th October 1843; improved 1870; transferred to tower 1880.	Do.
240	65	180°	Small white masonry tower.	Dioptric, 4th order.	1st October 1842; improved 1870.	As a guide for vessels to the anchorage.

Order—dated 27th July 1887, No. 336, Marine.

Ordered that copies of the report be forwarded to the Governments of India, Bengal, and Bombay, and to the Chief Commissioner of Burma.

(True Extract.)

H. E. STOKES,
Ag. Chief Secretary.

To the Port Officer Madras.
„ Public Works Department.

Endorsement—dated 27th July 1887, No. 337, Marine.

Five copies forwarded to the Government of India, Department of Finance and Commerce.

H. E. STOKES,
Ag. Chief Secretary.

Endorsement—dated 27th July 1887, No. 338, Marine.

Twenty copies forwarded to the Government of Bengal, Municipal Department, with reference to their letter, dated 18th April 1887, No. 1877.

H. E. STOKES,
Ag. Chief Secretary.

Endorsement—dated 27th July 1887, No. 339, Marine.

Fifty copies forwarded to the officers and departments named in the letter from the Government of Bombay, Marine Department, dated 6th July 1887, No. 234.

H. E. STOKES,
Ag. Chief Secretary.

Endorsement—dated 27th July 1887, No. 340, Marine.

Ten copies forwarded to the Chief Commissioner of Burma.

H. E. STOKES,
Ag. Chief Secretary.

Exd. T. O'Connor.

No 2264 W dy 23d August 87

Communicated to

Supy: Engineers concerned

for information

Sd/ Lo ✠

W.

Govt. of {1887} Madras.

MARINE.

Issued

Recd. *Encl.*

G.O., &c., 27th July 1887, Nos. 336—340.

No 2264 W dy 23d August 87

JULY.

Madras Lights.

Directing that copies of the report on the — for 1886-87, be forwarded to the Governments of India, Bengal, and Bombay and to the Chief Commissioner of Burma.

Nos I, II, IV, V & VI 6

With order

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

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ENCLOSURES.

REPORT on the Lights of the Madras Presidency for the official year 1886-87.

During the official year 1886-87, the following changes, &c., were made in regard to some of the lights of this Presidency. The country-made light exhibited at Hope Island was removed, and a 4th order dioptric white fixed light exhibited in lieu on the 22nd May 1886; and the 4th order dioptric light at Santopilly was replaced by a 2nd order dioptric fixed white light on the 24th September 1886. Two red lights, one on the end of each of the two groynes at Cocanada, were exhibited on the 15th September 1886, to serve as a guide to boats entering or leaving the river. It was decided that the new light proposed to be exhibited at the Seven Pagodas should be a red one, and a sum of Rs. 10,125 was sanctioned for erecting a platform for the light, and constructing quarters, &c., for the Superintendent and light-keepers. The necessity of a light at Manapaud on the Tinnevelly coast to warn vessels off the dangerous shoal in its vicinity was represented to Government, and the exhibition of a 6th order red dioptric light at that place was sanctioned. The annual inspection of lights were made by the Chief Engineer, Public Works Department, and the Port Officer, Madras, in February last. The lights of this Presidency were maintained in an efficient state, with the exception of the Pámban light, which did not compare favorably with the rest, and recommendations were made by the above-named officers for its improvement. The lights are distributed as shown below—thirteen on the East, and seven on the West Coast. Their establishments may be summarised as follows—four Superintendents on Rs. 70, three on Rs. 100, and one on Rs. 125, besides seventy-eight Assistant Superintendents and light-keepers, whose salaries range at Rs. 21, 15, 12, 11, 10, 9, 8, 7, and 6 per mensem. The total expenditure for the year on account of establishments and other charges amounted to Rs. 61,909-0-5, viz., establishments, Rs. 16,734-6-6; contingencies, Rs. 31,093-3-9; and Public Works charges, Rs. 14,081-6-2. All the lights now use kerosene-oil, with the single exception of the Madras lighthouse, which burns cocoanut-oil.

East Coast Lights.

1. Gopálpur	Flagstaff	3rd Order	Country made.	Fixed	White.
2. Calingapatam	Lighthouse	3rd Do.	Do.	Do.	Do.
3. Santopilly	Do.	2nd Do.	Dioptric	Do.	Do.
4. Vakalapudi	Do.	4th Do.	Catoptric	Revolving	Do.
5. Hope Island	Do.	4th Do.	Dioptric	Fixed	Do.
6. Masulipatam	Flagstaff	6th Do	Do.	Do.	Do.
7. Point Divi	Lighthouse	4th Do.	Do.	Do.	Do.
8. Armeghon	Do.	4th Do.	Do.	Revolving	Do.
9. Pulicat	Do.	4th Do.	Do.	Fixed	Do.
10. Madras	Do.	English	Catadioptric	Reciprocating, flashing.	Do.

West Coast Lights.

11. Negapatam	Lighthouse	4th Order	Dioptric	Fixed	White.
12. Pámban	Do.	4th Do.	Catadioptric	Do.	Do.
13. Tuticorin	Do.	4th Do.	Dioptric	Do.	Do.
14. Muttum	Do.	1st Do.	Dioptric	Do.	Do.
15. Cochin	Do.	4th Do.	Catadioptric	Do.	Do.
16. Beypore	Flagstaff	A globular lantern.	..	..	Red.
17. Calicut	Lighthouse	4th Order	Dioptric	Fixed	White.
18. Tellicherry	Do.	6th Do.	Do.	Do.	Do.
19. Cannanore	Do.	6th Do.	Do.	Do.	Red.
20. Mangalore	Do.	4th Do.	Do.	Do.	White.

STATEMENT of Expenditure of Lighthouses of Madras Presidency for 1886-87.

	Amount. RS. A. P.	Total. RS. A. P.
Gopaulpore Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	191 12 0	
Oil	135 0 0	
Stores	25 8 0	
Contingencies	70 3 7	
		542 7 7
Calingapatam Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	192 0 0	
Oil	670 0 10	
Stores	114 2 0	
Contingencies	47 9 10	
		1,143 12 8
Santopilly Lighthouse.		
One Superintendent	840 0 0	
One Assistant Superintendent	180 0 0	
Four Lascars	360 0 0	
Oil	675 0 0	
Stores	61 8 0	
Contingencies	125 6 7	
Value of Dioptric Light	21,715 13 4	
Public Works charges for repairs	382 7 1	
		24,340 3 0
Vakalapudi Lighthouse.		
One Superintendent	1,320 0 0	
One Assistant Superintendent	168 0 0	
Four Lascars	360 0 0	
Oil	180 0 0	
Stores	92 12 0	
Contingencies	107 0 2	
		2,227 12 2
Hope Island Lighthouse.		
One Superintendent	840 0 0	
One Assistant Superintendent	144 0 0	
Four Lascars	372 0 0	
Oil	90 0 0	
Stores	72 11 4	
Contingencies	97 2 3	
Public Works charges for repairs	1,748 14 5	
		3,364 12 0

	Amount. RS. A. P.	Total. RS. A. P.
Masulipatam Light.		
Two Lascars	168 0 0	
Oil	108 0 0	
Stores	8 10 0	
Contingencies	17 1 2	
		301 11 2
Point Divi Lighthouse.		
One Superintendent	840 0 0	
Five Lascars	431 15 11	
Oil	108 0 0	
Stores	40 9 4	
Contingencies	49 1 3	
Public Works charges for repairs	22 3 8	
		1,491 14 2
Armeghon Lighthouse.		
One Superintendent	1,200 0 0	
Five Lascars	396 0 0	
Oil	135 0 0	
Stores	144 3 7	
Contingencies	75 9 10	
Public Works charges for repairs	2,394 15 1	
		4,345 12 6
Pulicat Lighthouse.		
One Superintendent	914 14 4	
Five Lascars	396 0 0	
Oil	180 0 0	
Stores	335 5 4	
Contingencies	122 3 9	
Public Works charges for repairs	2,158 10 7	
		4,107 2 0
Seven Pagodas Lighthouse.		
Public Works charges for constructing lighthouse, &c.	5,174 10 6	
		5,174 10 6
Madras Lighthouse.		
One Superintendent	* 1,500 0 0	
One Assistant Superintendent	252 0 0	
Four Lascars	504 0 0	
One Sweeper	12 0 0	
One Washerman	12 0 0	
One Toty	12 0 0	
Oil	2,023 2 0	
Stores	384 12 6	
Contingencies	36 8 6	
		4,736 7 0
Negapatam Lighthouse.		
One Assistant Superintendent	120 0 0	
Two Lascars	180 0 0	
Oil	175 0 0	
Stores	28 3 4	
Contingencies	42 7 2	
		545 10 6

* Including house-rent 25 rupees per mensem.

	Amount. RS. A. P.	Total. RS. A. P.
Pámban Lighthouse.		
One Assistant Superintendent	120 0 0	
One Lascar	96 0 0	
Oil	135 0 0	
Stores	35 11 4	
Contingencies	39 10 0	
		426 5 4
Tuticorin Lighthouse.		
One Assistant Superintendent	144 0 0	
Four Lascars	360 0 0	
Oil	127 8 0	
Stores	37 4 0	
Contingencies	41 9 3	
		710 5 3
Muttum Lighthouse.		
One Superintendent	1,500 0 0	
One Head Light-keeper	180 0 0	
Four Lascars	336 0 0	
Oil	1,050 0 0	
Stores	291 4 6	
Contingencies	179 9 9	
Public Works charges for repairs	1,788 6 7	
		5,325 4 10
Cochin Lighthouse.		
One Assistant Superintendent	144 0 0	
Two Lascars	202 0 0	
Oil	135 0 0	
Stores	18 2 0	
Contingencies	21 9 5	
Public Works charges for repairs	165 4 1	
		685 15 6
Calicut Lighthouse.		
One Assistant Superintendent	120 0 0	
Three Lascars	276 0 0	
Oil	120 0 0	
Stores	29 5 3	
Contingencies	34 8 11	
		579 14 2
Beypore Lighthouse.		
One Light-keeper	120 0 0	
Oil	60 0 0	
Stores	32 8 0	
Contingencies	17 11 3	
		230 3 3
Tellicherry Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	180 0 0	
Oil	90 0 0	
Stores	11 3 4	
Contingencies	28 7 6	
Public Works charges for repairs	207 3 2	
		636 14 0

	Amount. RS. A. P.	Total. RS. A. P.
Cannanore Lighthouse.		
One Assistant Superintendent	120 0 0	
One Lascar	92 0 0	
Oil	72 0 0	
Stores	9 2 0	
Contingencies	11 14 6	
		305 0 6
Mangalore Lighthouse.		
One Assistant Superintendent	120 0 0	
Four Lascars	357 12 3	
Oil	102 0 0	
Stores	16 8 4	
Contingencies	51 14 9	
Public Works charges for repairs	38 11 0	
		686 14 4
Total ..		61,909 0 5

LIST OF LIGHTS IN THE

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.
		N. DEG. M. S.	E. DEG. M. S.					MILES.
Gopálpur ..	On mainland, sixty yards from low-water mark.	19 13 0	84 52 0	1	White.	Fixed..	..	10
Calingapatam ..	On the Point ..	18 19 0	84 7 30	1	Do. ..	Do. ..	..	8
Santopilly ..	On Santopilly Hill, three-quarters of a mile inland.	18 4 56	83 37 35	1	Do. ..	Do. ..	..	14
Cocanada (Vakalapudi.)	Four-and-three-quarter miles north of Cocanada river, 500 yards from the shore.	17 0 40	82 16 30	1	Do. ..	Revolving.	A flash every 10 seconds.	14
Coringa or Hope Island.	On the southern part of Hope Island and distant about two-and-a half miles from the sea.	16 49 5	82 18 58	1	Do. ..	Fixed.	..	14
Masulipatam ..	In the Fort ..	16 9 15	81 9 25	1	Do. ..	Do. ..	..	6
Point Divi ..	Two miles N. W. of Point.	15 58 55	81 9 25	1	Do. ..	Do. ..	..	14
Armeghon or Armogham.	Mainland, village of Moona or Moonapollium.	13 53 8	80 11 47	1	Do. ..	Revolving.	A flash every 20 seconds.	14
Pulicat	Near the beach ..	13 25 15	80 19 6	1	Do. ..	Fixed..	..	14
Madras	On Esplanade north of the Fort.	13 5 11	80 16 51	1	Do. ..	Flashing.	Light has five faces, and every minute one face flashes towards the same spot, but three faces are presented seaward at one time.	20
Negapatam ..	On bastion ..	10 45 30	79 50 20	1	Do. ..	Fixed.	..	14
Pámban Pass ..	On a sand hill about one mile east of northern channel.	9 17 14	79 12 38	1	Do. ..	Do. ..	..	14

MADRAS PRESIDENCY.

Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward.)	Nature of construction, color, or any peculiarity of light house.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
FEET.	FEET.					
85	..	180° or the whole sea horizon.	Flagstaff painted white.	Third class, country-made.	1871.	Intended as a guide to vessels making the anchorage at night, and exhibited at the special requisition of Commanders of the British India Steam Navigation Company's Mail Steamers.
68	73	..	Obelisk of cut stone, column white, capital dark blue.	Do. ..	15th December 1876.	Intended to warn vessels off a small reef, which projects from the Point, and which should not be passed in less than eight fathoms, when making the port at night.
173	32	180°, facing S.E.	On the roof of a house.	Dioptric, 2nd order.	1st November 1849; improved 1871; present light 1886.	Exhibited to warn mariners off the Santopilly Rocks, from which this light bears N.W. $\frac{5}{8}$ W., distant $6\frac{1}{2}$ miles.
80	76	In every direction seaward.	White column..	Catoptric, 4th order.	15th January 1879.	This light is intended to lead vessels clear of the shoals to the northward of Point Godavári, when coming into the Cocanada anchorage from the southward and eastward. At Cocanada, two red lights, one on the end of the north groyne and the other on the end of the south groyne, at the entrance of the river, are exhibited to serve as a guide to boats entering or leaving the river.
83	94	180° from north, 20° east to south, 20° west.	Masonry tower, horizontal alternate bands of black and white.	Dioptric 4th order.	1817; improved 1886.	Intended to lead vessels clear of the rocks and shoals off Godávari Point.
69	112	180°	Flagstaff ..	Dioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
$48\frac{1}{2}$	50	225°, or from north through west to southwest.	Masonry column, white.	Dioptric, 4th order.	1st May 1851; improved 1870.	Is intended to point out the position of the danger.
107	111	180°, or the whole sea horizon.	Do. ..	Do. ..	1st January 1853; improved 1870; present light 1881.	Warns vessels off the Armeghon shoal, the shoalest part of which ($1\frac{3}{4}$ fathoms) lies six miles off shore.
68	57	180°, or the whole sea horizon.	Masonry column, white, with black bands.	Do. ..	1859; improved 1870; altered 1881.	To guide vessels clear of the Pulicat shoal. When the light bears W. $\frac{1}{2}$ N., a vessel is to the northward of all dangers.
128	125	310°, facing east.	Granite column.	Catadioptric ..	1st January 1844.	To guide vessels clear of the Pulicat shoal and into the roadstead. Mariners should not bring this light to southward of S.S.W. $\frac{1}{2}$ W. to avoid Pulicat shoal.
$79\frac{1}{2}$	83	180°, or the whole sea horizon.	Mosonry column, white.	Dioptric, 4th order.	1st August 1846; improved 1870.	As a guide for vessels to the anchorage.
97	72	All round the compass.	Circular masonry column.	Catadioptric, 4th order.	21st April 1846; improved 1860.	Is a guide to vessels making for the Pámbam channel.

LIST OF LIGHTS IN THE

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.
		N. DEG. M. S.	E. DEG. M. S.					MILES.
Tuticorin ..	North extreme of Hare Island or Paundiantivo, 2½ miles east of Tuticorin.	8 47 10	78 11 20	1	White.	Fixed.	..	14
Muttum (Cadiapatam.)	A rocky promontory known as "Muttum Point."	8 7 30	77 18 10	1	Do. ..	Do. ..	..	20
Cochin	On a small mound, which formed a bastion of the old fort to the south of the harbour.	9 57 47	76 13 45	1	Do. ..	Do. ..	..	15
Calicut	On the sandy beach.	11 15 5	75 45 35	1	Do. ..	Do. ..	..	14
Beypore ..	Near the beach ..	11 10 0	75 47 0	1	Red ..	Do. ..	..	5
Tellicherry ..	On the fort wall near the beach.	11 44 50	75 28 30	1	White.	Do. ..	..	8
Cannanore ..	On the fort rampart near the beach.	11 51 10	75 21 45	1	Red ..	Do. ..	..	6 to 8
Mangalore ..	On a hill above the town, and near some high trees.	12 52 17	74 50 8	1	White.	Do. ..	..	14

MADRAS PRESIDENCY—*continued.*

Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, or any peculiarity of lighthouse.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
FEET.	FEET.					
85	91	All round the compass.	Sandstone column, colored brown, lantern white.	Dioptric, 4th order.	15th May 1845; improved 1874.	As a guide for vessels to the anchorage.
132	72	All round ..	Dark grey granite column.	First order dioptric.	1st January 1883.	This light, in the territory of Travancore, is intended to mark the vicinity of the Crocodile Rock.
100	91	270°	White laterite column.	Catadioptric, 4th order.	1st April 1839; improved 1868.	Harbour light. During the S.W. monsoon, when Cochin port is avoided by shipping, a small light is exhibited from a flagstaff at Narakal, about five miles to the northward of Cochin.
102	98	180° seaward ..	White column ..	Dioptric, 4th order.	1847; improved 1881.	To guide vessels to the anchorge clear of the reef, which lies about one mile S. 30° W. from the light. A small red light is exhibited from the head of the pier as a guide for small coasting craft, when entering the port.
60	..	180°	Flagstaff ..	Globular lantern.	17th February1883.	As a guide for vessels to the anchorage.
70	..	158°, or between the bearings of S. E. by E. and N.W. by N.	Small masonry tower.	Dioptric, 6th order; Chance's port or signal light.	1835; improved 1870; transferred to tower 1881.	Harbour light.
64	25 from the rampart.	180°	Small masonry tower of a light yellow color.	Dioptric, 6th order.	17th October 1843; improved 1870; transferred to tower 1880.	Do.
240	65	180°	Small white masonry tower.	Dioptric, 4th order.	1st October 1842; improved 1870.	As a guide for vessels to the anchorage.

ORDER—dated 27th July 1887, No. 336, Marine.

Ordered that copies of the report be forwarded to the Governments of India, Bengal, and Bombay, and to the Chief Commissioner of Burma.

(True Extract.)

H. E. STOKES,
Ag. Chief Secretary.

To the Port Officer Madras.
„ Public Works Department.

ENDORSEMENT—dated 27th July 1887, No. 337, Marine.

Five copies forwarded to the Government of India, Department of Finance and Commerce.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 338, Marine.

Twenty copies forwarded to the Government of Bengal, Municipal Department, with reference to their letter, dated 18th April 1887, No. 1877.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 339, Marine.

Fifty copies forwarded to the officers and departments named in the letter from the Government of Bombay, Marine Department, dated 6th July 1887, No. 234.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 340, Marine.

Ten copies forwarded to the Chief Commissioner of Burma.

H. E. STOKES,
Ag. Chief Secretary.

Ex̄d. T. O'Connor.

c/2 6420/87

Govt. of {1887} Madras.

MARINE.

Issued

Recd. *Encl.*

G.O., &c., 27th July 1887,
Nos. 336—340.

B/2 22458/23/7/87

JULY.

Madras Lights.

Directing that copies of the report on the — for 1886-87, be forwarded to the Governments of India, Bengal, and Bombay and to the Chief Commissioner of Burma.

CHIEF SECRETARY'S OOTACAMUND

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following paper :—

From T. E. MARSHALL, Esq., Acting Port Officer, Madras, to the Chief Secretary to Government, dated 7th July 1887, No. 6058.

I have the honor to submit the accompanying report on the Madras lights for the official year 1886-87.

ENCLOSURES.

REPORT on the Lights of the Madras Presidency for the official year 1886-87.

During the official year 1886-87, the following changes, &c., were made in regard to some of the lights of this Presidency. The country-made light exhibited at Hope Island was removed, and a 4th order dioptric white fixed light exhibited in lieu on the 22nd May 1886; and the 4th order dioptric light at Santopilly was replaced by a 2nd order dioptric fixed white light on the 24th September 1886. Two red lights, one on the end of each of the two groynes at Cocanada, were exhibited on the 15th September 1886, to serve as a guide to boats entering or leaving the river. It was decided that the new light proposed to be exhibited at the Seven Pagodas should be a red one, and a sum of Rs. 10,125 was sanctioned for erecting a platform for the light, and constructing quarters, &c., for the Superintendent and light-keepers. The necessity of a light at Manapaud on the Tinnevelly coast to warn vessels off the dangerous shoal in its vicinity was represented to Government, and the exhibition of a 6th order red dioptric light at that place was sanctioned. The annual inspection of lights were made by the Chief Engineer, Public Works Department, and the Port Officer, Madras, in February last. The lights of this Presidency were maintained in an efficient state, with the exception of the Pámban light, which did not compare favorably with the rest, and recommendations were made by the above-named officers for its improvement. The lights are distributed as shown below—thirteen on the East, and seven on the West Coast. Their establishments may be summarised as follows—four Superintendents on Rs. 70, three on Rs. 100, and one on Rs. 125, besides seventy-eight Assistant Superintendents and light-keepers, whose salaries range at Rs. 21, 15, 12, 11, 10, 9, 8, 7, and 6 per mensem. The total expenditure for the year on account of establishments and other charges amounted to Rs. 61,909-0-5, viz., establishments, Rs. 16,734-6-6; contingencies, Rs. 31,093-3-9; and Public Works charges, Rs. 14,081-6-2. All the lights now use kerosene-oil, with the single exception of the Madras lighthouse, which burns cocoanut-oil.

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1. Gopálpur	..	Flagstaff	..	3rd Order	..	Country made.	.. White.
2. Calingapatam	..	Lighthouse	..	3rd Do.	..	Do.	.. Do.	.. Do.	.. Do.
3. Santopilly	..	Do.	..	2nd Do.	..	Dioptric	.. Do.	.. Do.
4. Vakalapudi	..	Do.	..	4th Do.	..	Catoptric	.. Revolving	.. Do.
5. Hope Island	..	Do.	..	4th Do.	..	Dioptric	.. Fixed	.. Do.
6. Masulipatam	..	Flagstaff	..	6th Do	..	Do.	.. Do.	.. Do.
7. Point Divi	..	Lighthouse	..	4th Do.	..	Do.	.. Do.	.. Do.
8. Armeghon	..	Do.	..	4th Do.	..	Do.	.. Revolving	.. Do.
9. Pulicat	..	Do.	..	4th Do.	..	Do.	.. Fixed	.. Do.
10. Madras	..	Do.	..	English	..	Catadioptric	.. Reciprocating, flashing.	Do.

West Coast Lights.

11. Negapatam	Lighthouse	4th Order	Dioptric	Fixed	White.
12. Pámban	Do.	4th Do.	Catadioptric	Do.	Do.
13. Tuticorin	Do.	4th Do.	Dioptric	Do.	Do.
14. Muttum	Do.	1st Do.	Dioptric	Do.	Do.
15. Cochin	Do.	4th Do.	Catadioptric	Do.	Do.
16. Beypore	Flagstaff	A globular lantern.			Red.
17. Calicut	Lighthouse	4th Order	Dioptric	Fixed	White.
18. Tellicherry	Do.	6th Do.	Do.	Do.	Do.
19. Cannanore	Do.	6th Do.	Do.	Do.	Red.
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Two Lascars	191 12 0	
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One Assistant Superintendent	180 0 0	
Four Lascars	360 0 0	
Oil	675 0 0	
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Contingencies	107 0 2	
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Oil	90 0 0	
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Contingencies	39 10 0	
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One Assistant Superintendent	144 0 0	
Four Lascars	360 0 0	
Oil	127 8 0	
Stores	37 4 0	
Contingencies	41 9 3	
		710 5 3
Muttum Lighthouse.		
One Superintendent	1,500 0 0	
One Head Light-keeper	180 0 0	
Four Lascars	336 0 0	
Oil	1,050 0 0	
Stores	291 4 6	
Contingencies	179 9 9	
Public Works charges for repairs	1,788 6 7	
		5,325 4 10
Cochin Lighthouse.		
One Assistant Superintendent	144 0 0	
Two Lascars	202 0 0	
Oil	135 0 0	
Stores	18 2 0	
Contingencies	21 9 5	
Public Works charges for repairs	165 4 1	
		685 15 6
Calicut Lighthouse.		
One Assistant Superintendent	120 0 0	
Three Lascars	276 0 0	
Oil	120 0 0	
Stores	29 5 3	
Contingencies	34 8 11	
		579 14 2
Beypore Lighthouse.		
One Light-keeper	120 0 0	
Oil	60 0 0	
Stores	32 8 0	
Contingencies	17 11 3	
		230 3 3
Tellicherry Light.		
One Assistant Superintendent	120 0 0	
Two Lascars	180 0 0	
Oil	90 0 0	
Stores	11 3 4	
Contingencies	28 7 6	
Public Works charges for repairs	207 3 2	
		636 14 0

	Amount. RS. A. P.	Total. RS. A. P.
Cannanore Lighthouse.		
One Assistant Superintendent	120 0 0	
One Lascar	92 0 0	
Oil	72 0 0	
Stores	9 2 0	
Contingencies	11 14 6	
		305 0 6
Mangalore Lighthouse.		
One Assistant Superintendent	120 0 0	
Four Lascars	357 12 3	
Oil	102 0 0	
Stores	16 8 4	
Contingencies	51 14 9	
Public Works charges for repairs	38 11 0	
		686 14 4
Total ..		61,909 0 5

LIST OF LIGHTS IN THE MADRAS PRESIDENCY.

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.	Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward.)	Nature of construction, color, or any peculiarity of light house.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
		N.	E.						FEET.	FEET.					
		DEG. M. S.	DEG. M. S.					MILES.							
Gopálpur ..	On mainland, sixty yards from low-water mark.	19 13 0	84 52 0	1	White.	Fixed..	..	10	85	..	180° or the whole sea horizon.	Flagstaff painted white.	Third class, country-made.	1871.	Intended as a guide to vessels making the anchorage at night, and exhibited at the special requisition of Commanders of the British India Steam Navigation Company's Mail Steamers.
Calingapatam ..	On the Point ..	18 19 0	84 7 30	1	Do. ..	Do. ..	..	8	68	73	..	Obelisk of cut stone, column white, capital dark blue.	Do. ..	15th December 1876.	Intended to warn vessels off a small reef, which projects from the Point, and which should not be passed in less than eight fathoms, when making the port at night.
Santopilly ..	On Santopilly Hill, three-quarters of a mile inland.	18 4 56	83 37 35	1	Do. ..	Do. ..	..	14	173	32	180°, facing S.E.	On the roof of a house.	Dioptric, 2nd order.	1st November 1849; improved 1871; present light 1886.	Exhibited to warn mariners off the Santopilly Rocks, from which this light bears N.W. $\frac{3}{8}$ W., distant $6\frac{1}{2}$ miles.
Cocanada (Vakalapudi.)	Four-and-three-quarter miles north of Cocanada river, 500 yards from the shore.	17 0 40	82 16 30	1	Do. ..	Revolving.	A flash every 10 seconds.	14	80	76	In every direction seaward.	White column..	Catoptric, 4th order.	15th January 1879.	This light is intended to lead vessels clear of the shoals to the northward of Point Godavári, when coming into the Cocanada anchorage from the southward and eastward. At Cocanada, two red lights, one on the end of the north groyne and the other on the end of the south groyne, at the entrance of the river, are exhibited to serve as a guide to boats entering or leaving the river.
Coringa or Hope Island.	On the southern part of Hope Island and distant about two-and-a half miles from the sea.	16 49 5	82 18 58	1	Do. ..	Fixed.	..	14	83	94	180° from north, 20° east to south, 20° west.	Masonry tower, horizontal alternate bands of black and white.	Dioptric 4th order.	1817; improved 1886.	Intended to lead vessels clear of the rocks and shoals off Godávari Point.
Masulipatam ..	In the Fort ..	16 9 15	81 9 25	1	Do. ..	Do. ..	..	6	69	112	180°	Flagstaff ..	Dioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
Point Divi ..	Two miles N. W. of Point.	15 58 55	81 9 25	1	Do. ..	Do. ..	..	14	$48\frac{1}{2}$	50	225°, or from north through west to south-west.	Masonry column, white.	Dioptric, 4th order.	1st May 1851; improved 1870.	Is intended to point out the position of the danger.
Armeghon or Armogham.	Mainland, village of Moona or Moonapollium.	13 53 8	80 11 47	1	Do. ..	Revolving.	A flash every 20 seconds.	14	107	111	180°, or the whole sea horizon.	Do. ..	Do. ..	1st January 1853; improved 1870; present light 1881.	Warns vessels off the Armeghon shoal, the shoalest part of which ($1\frac{3}{4}$ fathoms) lies six miles off shore.
Pulicat	Near the beach ..	13 25 15	80 19 6	1	Do. ..	Fixed..	..	14	68	57	180°, or the whole sea horizon.	Masonry column, white, with black bands.	Do. ..	1859; improved 1870; altered 1881.	To guide vessels clear of the Pulicat shoal. When the light bears W. $\frac{1}{2}$ N., a vessel is to the northward of all dangers.
Madras	On Esplanade north of the Fort.	13 5 11	80 16 51	1	Do. ..	Flashing.	Light has five faces, and every minute one face flashes towards the same spot, but three faces are presented seaward at one time.	20	128	125	310°, facing east.	Granite column.	Catadioptric ..	1st January 1844.	To guide vessels clear of the Pulicat shoal and into the roadstead. Mariners should not bring this light to southward of S.S.W. $\frac{1}{2}$ W. to avoid Pulicat shoal.
Negapatam ..	On bastion ..	10 45 30	79 50 20	1	Do. ..	Fixed.	..	14	$79\frac{1}{2}$	83	180°, or the whole sea horizon.	Mosonry column, white.	Dioptric, 4th order.	1st August 1846; improved 1870.	As a guide for vessels to the anchorage.
Pámban Pass ..	On a sand hill about one mile east of northern channel.	9 17 14	79 12 38	1	Do. ..	Do. ..	..	14	97	72	All round the compass.	Circular masonry column.	Catadioptric, 4th order.	21st April 1846; improved 1860.	Is a guide to vessels making for the Pámbam channel.

LIST OF LIGHTS IN THE

Names of lights.	Location.	Position. Latitude.	Position. Longitude.	Number and relative position of lights.	Color of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash.	Miles visible in clear weather.
		N. DEG. M. S.	E. DEG. M. S.					MILES.
Tuticorin ..	North extreme of Hare Island or Paundiantivo, 2½ miles east of Tuticorin.	8 47 10	78 11 20	1	White.	Fixed.	..	14
Muttum (Cadiapatam.)	A rocky promontory known as "Muttum Point."	8 7 30	77 18 10	1	Do. ..	Do. ..	..	20
Cochin	On a small mound, which formed a bastion of the old fort to the south of the harbour.	9 57 47	76 13 45	1	Do. ..	Do. ..	..	15
Calicut	On the sandy beach.	11 15 5	75 45 35	1	Do. ..	Do. ..	..	14
Beypore ..	Near the beach ..	11 10 0	75 47 0	1	Red ..	Do. ..	..	5
Tellicherry ..	On the fort wall near the beach.	11 44 50	75 28 30	1	White.	Do. ..	..	8
Cannanore ..	On the fort rampart near the beach.	11 51 10	75 21 45	1	Red ..	Do. ..	..	6 to 8
Mangalore ..	On a hill above the town, and near some high trees.	12 52 17	74 50 8	1	White.	Do. ..	..	14

MADRAS PRESIDENCY—*continued.*

Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, or any peculiarity of lighthouse.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
FEET.	FEET.					
85	91	All round the compass.	Sandstone column, colored brown, lantern white.	Dioptric, 4th order.	15th May 1845; improved 1874.	As a guide for vessels to the anchorage.
132	72	All round ..	Dark grey granite column.	First order dioptric.	1st January 1883.	This light, in the territory of Travancore, is intended to mark the vicinity of the Crocodile Rock.
100	91	270°	White laterite column.	Catadioptric, 4th order.	1st April 1839; improved 1868.	Harbour light. During the S.W. monsoon, when Cochin port is avoided by shipping, a small light is exhibited from a flagstaff at Narakal, about five miles to the northward of Cochin.
102	98	180° seaward ..	White column..	Dioptric, 4th order.	1847; improved 1881.	To guide vessels to the anchorge clear of the reef, which lies about one mile S. 30° W. from the light. A small red light is exhibited from the head of the pier as a guide for small coasting craft, when entering the port.
60	..	180°	Flagstaff ..	Globular lantern.	17th February1883.	As a guide for vessels to the anchorage.
70	..	158°, or between the bearings of S. E. by E. and N.W. by N.	Small masonry tower.	Dioptric, 6th order; Chance's port or signal light.	1835; improved 1870; transferred to tower 1881.	Harbour light.
64	25 from the rampart.	180°	Small masonry tower of a light yellow color.	Dioptric, 6th order.	17th October 1843; improved 1870; transferred to tower 1880.	Do.
240	65	180°	Small white masonry tower.	Dioptric, 4th order.	1st October 1842; improved 1870.	As a guide for vessels to the anchorage.

ORDER—dated 27th July 1887, No. 336, Marine.

Ordered that copies of the report be forwarded to the Governments of India, Bengal, and Bombay, and to the Chief Commissioner of Burma.

(True Extract.)

H. E. Stokes

Ag. Chief Secretary.

To the Port Officer Madras.
„ Public Works Department.

ENDORSEMENT—dated 27th July 1887, No. 337, Marine.

Five copies forwarded to the Government of India, Department of Finance and Commerce.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 338, Marine.

Twenty copies forwarded to the Government of Bengal, Municipal Department, with reference to their letter, dated 18th April 1887, No. 1877.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 339, Marine.

Fifty copies forwarded to the officers and departments named in the letter from the Government of Bombay, Marine Department, dated 6th July 1887, No. 234.

H. E. STOKES,
Ag. Chief Secretary.

ENDORSEMENT—dated 27th July 1887, No. 340, Marine.

Ten copies forwarded to the Chief Commissioner of Burma.

H. E. STOKES,
Ag. Chief Secretary.

Exd. T. O'Connor.

B. No 1855 W. 22. 7. 86.

No 2264 W a/23. August

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PWC No 6420

Govt. of {1887} Madras.

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Issued

Recd. 16.8.87 Encl.

G.O., &c., 27th July 1887,
Nos. 336—340.

No 2264 W a/23. August/87

JULY.

Madras Lights.

Directing that copies of the report on the — for 1886-87, be forwarded to the Governments of India, Bengal, and Bombay and to the Chief Commissioner of Burma.

Secy I. II. IV. V. & VI C

Secy I. II. IV. V. & VI C

Secy 23/8/87

Secy 106. VIII 14.9.88

Secy 17.8.87 R. 22-8-87