

- (1) பக்கங்களின் எண்ணிக்கை 14
 (2) புதுக்கித் திருப்பிய நாள் 10/50
 (3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் len

தமிழ்நாடு ஆவணக் காப்பகம்.

(86)

தமிழ்நாடு அரசு

P. W. ① துறை

அரசாணை எண். மு. கோப்புத் தாள் எண்.	2888	அச்சகம் பலவகை
நாள் :	29-10-1891	198

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

Ln. 23/10/91
7 sheets

2888

GOVERNMENT OF MADRAS.
MARINE DEPARTMENT.

READ—the following paper:—

From Captain M. BEAN, H.M.'s I.M., Officiating Presidency Port Officer,
to the Chief Secretary to Government, dated Madras, 4th September 1891,
No. 1245—341-G.

I have the honour to forward herewith the annual report on the Lights and
Lighthouses in the Madras Presidency for the official year 1890—91.

ENCLOSURE.

REPORT on the Lights and Lighthouses on the coasts of the Madras Presidency for the official
year 1890—91.

NEW LIGHT.

In the year under notice, a 6th-order dioptric port light, visible in clear weather at a
distance of six miles, was exhibited from 1st June at Point Calimere as a guide to vessels round-
ing the Point. A head lightkeeper of the 2nd class on Rs. 10 and two lightkeepers of the
2nd and 3rd class on Rs. 8 and Rs. 7 per mensem, respectively, are attached to this light. It
is inspected once every month by the Port Officer of Negapatam.

PROPOSED NEW LIGHT.

A proposal to exhibit a 6th-order dioptric port light at the port of Tondi, in Madura
district, was sanctioned by Government, and arrangements made for procuring the apparatus
from Messrs. Chance Brothers.

CHANGE OF APPARATUS.

The 6th-order dioptric port light (red) in use at Manapad was replaced on 1st May by a
4th-order dioptric port light of the same colour showing in clear weather a distance of twelve
miles.

The light displayed from a country lantern at Calingapatam was on 1st June replaced by a
new 4th-order dioptric red port light shewing twelve miles in clear weather.

The better class of lights intended to be brought into use at Malpé, Kundapur, Cuddalore
and Gopálpur, to which reference was made in the previous year's report, did not arrive in time
to permit of the changes being effected in the year under review.

REPAIRS AND IMPROVEMENTS.

(a) Lighthouses.

The condition of the lighthouses along the coast at the close of the official year was, on the
whole satisfactory. In addition to periodical repair, colour-washing, painting, &c., the following
may be noticed, viz:—

Calingapatam.—Five wooden stanchions were replaced by iron ones and an additional
railing put up.

Santopilly.—Store-rooms and stairs leading thereto repaired.

Vakalapudi.—Machinery of light supplied with a new steel bevelled pinion wheel.

Point Diu.—Wire-gauze screens fitted to entrances of lantern to keep out insects.

Tuticorin (Hare Island).—Upper course of stones of the column, having been found slightly
displaced, was strengthened by means of iron bands placed vertically and round the column.

Manapad.—Lamp provided with a wooden cover.

Tellicherry.—Wooden cover of lantern replaced by a covering of copper sheet.

(b) Lightkeepers' Quarters.

Calingapatam.—A cooking-house provided for the keepers.

Manapad.—A cooking-house for the superintendent and extra accommodation for the
lightkeepers provided.

Mangalore.—The Public Works Department was communicated with, in view to quarters
being constructed for the keepers attached to this light.

At the suggestion of Mr. W. T. Douglass, M.L.C.E., who inspected the different lighthouses in
the previous year, additional improvements have been contemplated, and the Department of
Public Works communicated with in view to the same being carried out as soon as practicable.
These are to consist of additional ventilation to lanterns, improvements to stair arrangement and

lightning conductor, &c., &c. It was also proposed to exhibit lights of an order superior to those now in use at some of the important light stations, and indents were submitted for the requisite apparatus.

LIGHTNING CONDUCTORS.

A lightning conductor for the Calingapatam lighthouse and another for the lighthouse at Manapad was in course of erection at the end of the year. At Pulicat lighthouse a new lightning conductor of copper tape was put up in the year, while Tellicherry lighthouse was also provided with a conductor. All the conductors of the various lighthouses on the coasts were in apparent good condition, but the greater number of them required testing, and the Department of Public Works was communicated with on the subject.

ESTABLISHMENT.

The establishment stood as under on the 31st March 1891, and gave general satisfaction in the discharge of their duties:—

2	Superintendents, 1st-class, on Rs. 100 each per mensem with an allowance of Rs. 25 each.
1	do. 1st-class, on Rs. 100 per mensem.
1	do. 2nd do. on " 70 per mensem plus Rs. 30 personal allowance and Rs. 10 signalling allowance.
5	do. 2nd-class, on Rs. 70 each per mensem.
1	do. 3rd do. on " 50 per mensem.
5	Head Lightkeepers, 1st-class, on Rs. 15 per mensem.
1	do. 2nd do. on " 12 plus charge allowance Rs. 3 per mensem.
4	do. 2nd do. on " 12 per mensem.
5	do. 3rd do. on " 10 each plus charge allowance Rs. 2 each per mensem.
3	do. 3rd-class, on Rs. 10 each plus charge allowance Re. 1 each per mensem.
4	do. 3rd-class, on Rs. 10 each per mensem.
10	Lightkeepers, 1st-class, on Rs. 9 each per mensem.
22	do. 2nd do. on " 8 do.
24	do. 3rd do. on " 7 do.

DISTRIBUTION OF LIGHTS.

The lights are thirty in number—eight on the West Coast and twenty-two on the East Coast. Particulars will be found in Appendices A and B.

EXPENDITURE.

The Port Fund accounts for the year under review having been finally closed, a statement showing the actual expenditure on account of the several lighthouses of this Presidency is here-with submitted (Appendix A).

Charges on account of establishment, contingencies and public works for the past three years are as detailed below:—

	1888-89.	1889-90.	1890-91.
	RS.	RS.	RS.
Establishment and Contingencies	25,546	30,313	27,605
Public Works charges	17,967	10,768	6,860
Total	43,513	41,081	34,465

The actuals for 1890-91 were Rs. 6,616 less than those of the previous year, the decrease arising chiefly in Public Works charges and in charges on account of oil.

The variations in charges under each head as compared with those of the previous year are explained below:—

	1889-90.	1890-91.	Difference.	
			More.	Less.
Superintendents	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Lightkeepers	10,595 13 9	10,572 6 10	23 6 11	
Oil	7,592 11 11	6,229 1 11	636 6 0	
Stores	6,144 3 6	2,522 12 5	3,621 7 1	
Contingencies	3,575 1 6	3,444 5 7	130 11 11	
Construction and Repairs	2,404 12 4	2,836 5 9	431 9 5	
	10,768 0 9	6,559 14 11		3,908 1 10
Total	41,080 11 9	34,464 15 5	1,067 15 5	7,683 11 9
			— 6,615-12-4	

Superintendents.—The difference is so small that it calls for no special remarks.

Lightkeepers.—The increase is due partly on account of cost of light establishment at Point Calimere amounting to Rs. 234-9-2, and to savings under this head in the year under review not having been so large as in the previous year. The budget grant for lightkeepers' establishment for 1890-91 was Rs. 8,344.

Oil.—In the sum of Rs. 2,522-12-5 is included Rs. 1,022-12-6 on account of cost of mineral oil received from England and supplied to the lighthouses in 1890-91. The supply made during the latter part of 1889-90, for which a charge of Rs. 1,422-11-8 appeared in the accounts for that year, lasted for a considerable portion of the year under review. Hence the decrease in charge.

Stores.—The decrease is very small. Rs. 3,444-5-7 include Rs. 613-4-5 on account of cost of glass plates received from England, and Rs. 2,261-3-5 on account of tanks from the Government Dockyard, Bombay, for storing oil. The remainder is the cost of ordinary stores.

Contingencies.—The increase under this head is on account of cost of freight and railway fare on mineral oil, tanks and glass plates, and on other stores supplied to lighthouses.

Construction and Repairs.—The decrease is due to extensive lighthouse public works and repairs not having been executed during the year under review.

STORES AND SUPPLIES.

The lighthouses were well supplied with all requisite stores. Two iron tanks, each of 60 gallons capacity, except at Malpé and Kundapur where 30-gallon tanks were supplied, were supplied to the different lighthouses for storing oil. A better description of oil (heavy mineral) was brought into use in the year which answers the purpose very well and secures more brilliancy of light. Arrangements were made for obtaining this oil from England at such intervals and in such quantities as to ensure a supply of six months' requirement being always in surplus stock at each lighthouse. A cupboard was supplied in which all stores are now kept in the lighthouse premises. A thermometer was also supplied to each lighthouse by means of which the temperature inside the lantern is ascertained daily at 8 p.m. and midnight.

INSPECTIONS.

The following lights were inspected in the year by the several officers named:—

Calingapatam.—By the Presidency Port Officer.

Santopilly.—By the Presidency Port Officer, Superintending Engineer, and Port Officer, Bimlipatam.

Vakalapudi and Hope Island.—By Presidency Port Officer and Port Officer, Cocanada.

Point Divi.—By the Presidency Port Officer and Port Officer, Masulipatam.

Armeghon.—By Superintending Engineer, Executive Engineer, Personal Assistant to Presidency Port Officer, and Reserve Port Officer.

Pulicat.—By Superintending Engineer, Executive Engineer, and Personal Assistant to the Presidency Port Officer.

Seven Pagodas.—By Executive Engineer and Reserve Port Officer.

Cuddalore.—By Presidency Port Officer and Reserve Port Officer.

Negapatam.—By Presidency Port Officer, Superintending Engineer, and Executive Engineer.

Point Calimere.—By Port Officer, Negapatam.

Pamban.—By Presidency Port Officer and Superintending Engineer.

Tuticorin.—By Presidency Port Officer and Acting Presidency Port Officer (Captain Simpson).

Manapad.—By Port Officer, Tuticorin, and Superintending Engineer.

Muttam.—By Port Officer, Tuticorin.

Cochin.—By Superintending Engineer.

Tellicherry.—By Executive Engineer.

Mangalore.—Do. do.

Malpé and Kundapur.—By Port Officer, Mangalore.

GENERAL REMARKS.

All the lights on the coast were efficiently maintained, and, with the exception of Kundapur, were exhibited uninterruptedly throughout the year. At Kundapur, owing to an accident to the lamp, which had to be replaced by a lantern from Bombay, the light was not exhibited from 18th to 30th November of the year under review.

With the exception of the Madras light, which burns cocoanut oil, mineral oil was used at all the principal lights in this Presidency.

MADRAS,
4th September 1891.

(Signed) M. BEAN, Captain, H.M.'s I.M.,
Offg. Presidency Port Officer.

APPENDIX B.
List of Lights in the

Name of Light.	Location.	Latitude, N.	Longitude, E.	Number and relative position of lights.	Colour of lights.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash or occultation.
Kundapur ..	On the north side of the entrance to the river.	13° 38' 20"	74° 39' 40"	1	Red ..	F.	....
Malpé ..	Close to the entrance to the river.	13 20 40	74 42 0	1	White.	F.	....
Mangalore ..	On a hill above the town, and near some high trees.	12 52 17	74 50 08	1	Do.	F.	....
Cannanore ..	On the Fort rampart near the beach.	11 51 10	75 21 45	1	Red ..	F.	....
Tellicherry ..	On the Fort wall near the beach.	11 44 50	75 28 30	1	White.	F.	....
Mahé (French territory) ..	On the south side of the entrance to the river, at the foot of the flagstaff.	11 42 10	75 31 10	1	Red ..	F.	....
Calicut ..	On the sandy beach.	11 15 05	75 45 35	1	White.	F.	....
Narakel (Cochin territory).	On the beach at mouth of creek, 5 miles to the northward of Cochin.	10 03 0	76 12 0	1	Do.	F.	....
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.	F.	....
Alleppy or Alipee (Travancore territory).	On the beach, about one cable inland.	9 30 0	76 19 0	Only one light visible at a time. There are 9 lamps placed in three sets of three; as they revolve each set of three gives one stream of light.	Do.	Rev. ...	A flash every minute ..

Madras Presidency.

Miles visible in clear weather.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, colour, or any peculiarity of light-house.	Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
3	From N. thro' E. to S., shut in to the westward of N. by trees.	Flagstaff ..	28	25	Lantern, globular, red (not under control), Admiralty pattern.	1st Oct. 1888.	Intended as a guide to vessels making the port and will be exhibited annually from 1st October to 31st May only.
5	From N. thro' E. to S., shut in between N. and N.E. by trees, N. 53 E. and N. 57 E. by St. Mary's Islands, N. 73 E. to N. 80 E. by St. Mary's Islands.	Do. ..	37	25	Admiralty pattern mast-head lantern.	Do. ..	Do. do.
14	From N. by E. $\frac{1}{2}$ E. thro' E. to S. by W. $\frac{1}{2}$ W.	Small white masonry tower.	240	65	Dioptric, order.	4th 1st Oct. 1842; improved 1870.	As a guide to the anchorage.
6 to 8	Between the bearings of N. W. by W. $\frac{1}{2}$ W. and E. by S. $\frac{1}{2}$ S.	Small masonry tower of a light yellow colour.	64	25 from the rampart.	Dioptric, order.	6th 17th Oct. 1843; improved 1870; transferred to tower 1880.	Do. do.
	N. W. thro' E. to S.E.	Small masonry tower.	70	26	Do. ..	1835; improved 1870; transferred to tower 1881.	Do. do.
7	All round the compass.	Small white pyramid.	52	7	....	1885 ..	Shown only during N.-E. monsoon.
14	From N. 25 W. thro' E. to S. 14 E.	White column.	102	98	Dioptric, order.	4th 1847; improved 1881.	To guide vessels to the anchorage clear of the reef, which lies about 1 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 roadstead.
10	180° from N.N. W. through E. to S.S.E.	Flagstaff ..	95	102	Country made lantern.	1865 ..	Is exhibited only during the S.-W. monsoon, namely, from 15th May to 30th September, when Cochin port is avoided by shipping.
15	From N. by W. $\frac{1}{2}$ W. through E. to S. by E.	White laterite column.	100	91	Catadioptric, 4th order.	1st April 1839; improved 1868.	
17	All round the compass.	Masonry round white tower.	113	115	Catadioptric, 1st order (Holo-photal).	1862 ..	To guide vessels to the smooth water anchorage during the S.-W. monsoon.

List of Lights in the

Name of light.	Location.	Latitude, N.	Longitude, E.	Number and relative position of lights.	Colour of lights.	Fixed, flashing, intermittent, alternating or revolving.	Interval of revolution or flash or occultation.
Muttum ..	On a rocky promontory 300 yards from sea, known as Muttum Point.	8° 07' 30"	77° 18' 10"	1	White.	F.	....
Manapad ..	On the Tinnevely Coast.	8 22 30	78 6 30	1	Red ..	F.	....
Tuticorin ..	On the north extreme of Hare Island or Paundian-tivo. 2½ miles east of Tuticorin town.	8 47 10	78 11 20	1	White.	F.	....
Paumben or Pamban Pass.	On a sand-hill about one mile east of Northern Channel.	9 17 14	79 12 38	1	Do.	F.	....
Point Calimere ..	On the point about 30 miles south of Negapatam.	10 18 0	79 51 30	1	Red ..	F.	....
Negapatam ..	On the jetty near to the river mouth.	10 45 30	79 50 20	1	White.	F.	....
Karikal (French territory).	At the mouth of the Arselnar river.	10 55 0	79 50 35	1	Do.	F.	....
Cuddalore ..	On cross-trees of flagstaff.	11 43 0	79 46 15	1	Red ..	F.	....
Pondicherry (French territory).	In square, near the beach.	11 55 25	79 49 35	1	White.	F.	....
Do.	End of landing stage.	..	..	1	Red ..	F.	....
Seven Pagodas or Mahabali-puram.	On a rock half a mile inland marked on chart "Ruined pagoda" on rock very conspicuous and about 6 miles northward of Sadras.	12 36 55	80 11 31	1	Do. ..	F.	....
Madras or Fort St. George.	On the Esplanade north of the Fort.	13 05 11	80 16 51	1	White.	Flash- ing. The motion is reci- procat- ing and not ro- tatory.	There are 6 faces, and every minute one face flashes towards the same spot, but three faces are presented seaward at one time. The duration of the flashes to that of the eclipses or dark periods is in the ratio of 2 to 3, but as the

nature of the motion is reciprocating instead of rotatory, the above ratio merely expresses the average proportion of the light and dark intervals, which are themselves variable according to the position of the spectator. The rapidity of movement is so adjusted that the duration of the flashes will vary from 0° to 45° and that of the eclipses from 0° to 72°, the sums of the duration of light and darkness bearing, however, in every position the constant ratio of 2 to 3.

Madras Presidency—cont.

Miles visible in clear weather.	Area of illumination (bearings are magnetic and from seaward).	Nature of construction, colour, or any peculiarity of light-house.	Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
16	From N. 65 W. through N. to S. 85 E.	Dark grey granite column.	142	72	Dioptric, 1st order, with 6 duplex burn-ers.	1875; altered 1st January 1883.	This light, in the territory of Travancore, is intended to mark the vicinity of the Crocodile Rock, which lies 3 miles S. W. ½ S. of Cadiapattam. Vessels, unless bound to Kolachel or Cadiapattam, should not pass inshore of Kota and Adunda islands, as they are difficult to be distinguished from seaward, and sometimes have the appearance of sunken rocks from the sea sweeping completely over them.
12	N.N.E. through E. to S.S.W.	White masonry tower.	104	27	Dioptric, 4th port order light.	June 1888; improved 1st May 1890.	Is intended to warn vessels of the dangerous shoal in the vicinity.
14	All round the compass.	Sandstone column coloured brown, lantern white.	85	91	Dioptric, 4th order.	15th May 1845; improved 1874.	As a guide for vessels to the anchorage.
14	Do. ..	Circular masonry column.	97	72	Catadioptric, 4th order.	21st April 1846; improved 1860.	As a guide to vessels making for the Paumben Channel.
6	Do. ..	Steel mast, painted white.	49	..	Dioptric, 6th port order, light.	1st June 1890.	As a guide to vessels passing between Point Calimere and the shoals to the eastward.
14	From N. 5 W. through W. to S.S.E.	Masonry column painted white.	79	83	Dioptric, 4th order.	1st August 1846; improved 1870.	As a guide for vessels to the anchorage.
9	Visible from all directions seaward.	Do. ..	42	..	Lamp burning coconut oil.	1853 ..	Do. do.
6	N. through W. to S.	Flagstaff ..	130	31	Country lantern with a duplex burner and a dioptric chimney.	1st July 1889.	Do. do.
14	Visible from all directions seaward.	Masonry column, painted light yellow.	89	76	Dioptric, 4th order.	1886 ..	Do. do.
4	Do. ..	..	31	..	..	1881 ..	When surf is heavy, and approach to landing prohibited, a fixed green light is shown.
17	From N. through W. to South (180°).	Small grey turret.	119	26	Dioptric, 4th order.	10th July 1887.	Is intended to warn mariners of the dangerous outlying patches of rock composing the Tripatore reef and other reported dangers in its vicinity, to avoid which vessels navigating between Sadras and Covelong should not come into a less depth than 13 fathoms.
20	From N.N.E. through W. to S.S.E.	Granite column.	128	125	Catadioptric ..	1st Jan. 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. ½ W. to avoid Pulicat shoal.

List of Lights in the

Name of Light.	Location.	Latitude N.	Longitude E.	Number and relative position of lights.	Colour of lights.	Fixed, flashing, inter-mitting, alternating or revolving.	Interval of revolution or flash or occultation.
Madras leading light.	Madras Pier T. Head.	13° 05' 44"	80° 17' 18"	1	Red ..	F.	....
Do. do. ..	Port Office terrace ..	13 05 47	80 17 05	1	Green.	F.	....
Pulicat	Near the beach ..	13 25 15	80 19 06	1	White.	F.	....
Arneghon or Armogham.	On the mainland village of Moona or Moonapollium.	13 53 08	80 11 47	1	Do. ..	Revolving.	A flash every 20 seconds.
Point Divi or Divy.	About 2 miles N.W. of the point.	15 58 55	81 09 25	1	Do. ..	F.	....
Masulipatam ..	In the Fort ..	16 09 15	81 09 25	1	Do. ..	F.	....
Coringa or Hope Island.	On the southern part of Hope Island (Coringa Harbour), and distant about 2½ miles from the sea.	16 49 05	82 18 58	1	Do. ..	F.	....
Cocanada or Vakkalapudi.	4½ miles north of Cocanada river and about 500 yards from the shore.	17 0 40	82 16 30	1	Do. ..	Flashing.	A flash every 20 seconds.
Cocanada River.	One on the end of the North Groyne, and the other on the end of the South Groyne, entrance to the river.	..	..	2	Red ..	F.	....
Santipilly ..	On a small detached hill some distance inland. This distance said to be ½ of a mile.	18 04 56	83 37 35	1	White.	F.	....
Calingapatam ..	On the Point ..	18 19 0	84 07 30	1	Red ...	F.	....
Gopālpur ..	On the mainland 60 yards from low water mark.	19 13 0	84 52 0	1	White.	F.	....
Do. ..	On the extreme end of the pier head, port of Gopālpur.	..	..	1	Red ..	F.	....

Madras Presidency—cont.

Miles visible in clear weather.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, colour, or any peculiarity of light-house.	Height in feet of centre of lantern above high water.	Height in feet of building from base to vane.	Character and order of illuminating apparatus.	Year lighted.	Remarks.
5	From S. 51° 45' W. through W. to N. 17° W.	Wooden post ..	30	..	Ship's side light, Dioptric.	15th Oct. 1888.	To guide vessels leaving the harbour or making the anchorage at night.
5	From S. 51° 45' W. through W. to N. 17° W.	Do. ..	60	..	Ship's side light, Dioptric.	15th Oct. 1888.	Do. do.
14	From N. by W. through W. to S. by E.	Masonry column with black bands.	68	57	Dioptric, 4th order.	1859; improved 1870; altered 1881.	To guide vessels clear of the Pulicat shoal. When the light bears W. ½ N., a vessel is to the northward of all dangers.
14	From N.E. through W. to S.E.	White masonry column.	107	111	Dioptric, 4th order.	1st January 1853; improved 1870; present light 1881.	Warns vessels off the Arneghon shoal, the shoalest part of which (1½ fathoms) lies 6 miles off shore.
14	N. E. through W. to S.	Do. ..	48	50	Dioptric, 4th order.	1st May 1851; improved 1870.	Is intended to point out the position of the dangerous sands in the vicinity.
6	From S. 26° W. through W. to N. 2° E.	Flagstaff ..	69	112	Dioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
14	From N. 20 E. through W. to S. 20 W.	Masonry tower, horizontal alternate bands of black and white.	83	94	Dioptric, 6th order.	1817; improved 1886.	Intended to lead vessels clear of shoals off Godavari Point. A faint light is visible throughout the remainder of the arc.
14	All round the compass.	White column..	80	76	Dioptric, 4th order.	15th Jan. 1879.	This light is intended to lead vessels clear of the shoals to the northward of Point Godavari when coming into the Cocanada anchorage from the southward and eastward.
2½	Do. do. ..	Wooden post ..	10	..	..	15th Sept. 1888.	Exhibited to serve as a guide to boats entering or leaving Cocanada river.
16	From N. E. through W. to S.W.	On a small basement on the top of a small hill with a small building by the side of the lantern on the west side.	163.77	31.15	Dioptric, 2nd order, with 5 duplex burners.	1st Nov. 1849; improved 1871; present light 1886; improved Aug. 16th, 1888.	Exhibited to warn mariners of the Santipilly Rocks, from which this light bears N. W. ½ W., distant 6½ miles.
12	Do. ..	Obelisk of cut stone; column white; capital dark blue.	76	73	Dioptric, 4th order, port light.	15th Dec. 1876; improved 1st June 1890.	Intended to warn vessels off a small reef which projects from the point and which should not be passed in less than 8 fathoms when making the port at night.
8	Do. ..	Flagstaff, painted white.	82	61	3rd-class country lantern.	1871 ..	As a guide to the anchorage.
3	All round the compass.	..	25	..	Country lantern.	1st April 1887.	Points out the sea end of the pier.

ORDER—dated 13th October 1891, No. 450, Marine.

Recorded.

(True Extract.)

Edmund Price

Chief Secretary.

To the Presidency Port Officer.
„ Public Works Department.

ENDORSEMENT—dated 13th October 1891, No. 451, Marine.

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

J. F. PRICE,
Chief Secretary.

ENDORSEMENT—dated 13th October 1891, No. 452, Marine.

Twenty copies to the Government of Bengal, Municipal Department.

J. F. PRICE,
Chief Secretary.

ENDORSEMENT—dated 13th October 1891, No. 453, 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.

J. F. PRICE,
Chief Secretary.

ENDORSEMENT—dated 13th October 1891, No. 454, Marine.

Ten copies to the Chief Commissioner of Burma.

J. F. PRICE,
Chief Secretary.

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Govt. of {1891} Madras.
MARINE.

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Communicated to
Suptg Engineers concerned
for information.

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