(1) பக்கங்களின் எண்ணிக்கை 14

(2) புதுக்கித் திருப்பிய நாள் 1-90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W துறை

அரசாணை எண். —
மு. கோப்புத் தாள் எண். 2488 W

அச்சகம்
பலவகை

நாள் : 17-9-1890 ~~198~~ .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

ஆவண. எ7-1—18,008—15-6-87.

1/2488

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper:—

From Captain H. A. STREET, Her Majesty's Indian Marine, Presidency Port Officer, to the Chief Secretary to Government, dated Madras, 21st August 1890, No. 1005—416-G.

I have the honor to forward herewith the annual report on Lights and Lighthouses in the Madras Presidency for the official year 1889-90.

Enclosure.

Report on the Lights and Lighthouses on the coasts of the Madras Presidency for the official year 1889-90.

New Light.

During the year under notice, a fixed red *harbour* light for marking the position of the anchorage was exhibited at the port of Cuddalore from the cross-trees of the port flagstaff. The lantern is of country make with a reflector, a duplex burner and a dioptric chimney. A light-keeper of the third class is attached to this light.

Proposed new Light.

The arrangements for the exhibition of a new light at Point Calimere (reference to which was made in last year's report) were not completed within the year, and the matter is therefore reserved for further notice in the ensuing year's report.

Change of Apparatus.

The globular red light in use for the harbour light at Kundapur, having been found unsuitable, was replaced by a country lantern, which proved somewhat more satisfactory than the former.

Contemplated Changes in Apparatus.

The apparatus at present in use at certain lighthouses having been found unsatisfactory, it was under contemplation during the year to effect the following changes, which, however, were not carried out within the year, and will therefore be further noticed in the ensuing year's report, viz.—

Manapad.—Dioptric sixth-order light to be replaced by a fourth order dioptric port light.

Calingapatam.—Third-class country-made apparatus to be replaced by a fourth order dioptric port light.

Gopálpur.—Third-class country-made apparatus to be replaced by a fourth order dioptric port light.

Malpe, Kundapur and Cuddalore.—Country lanterns to be replaced by sixth order dioptric port lights.

Light discontinued.

The light at Beypore was discontinued from 1st July 1889, and it is not intended to re-exhibit it any more.

Repairs and Improvements.

(*a*) *Lighthouses.*

The lighthouses along the coast were all in a satisfactory condition at the close of the official year. In addition to periodical repairs, color-washing, painting, &c., the following may be noticed, viz.—

Calingapatam.—A wooden ladder has been fitted to the outside of the column.

Vakalapudi.—Lightning-conductor repaired.

Seven Pagodas.—A lightning-conductor was fixed to the lighthouse.
Negapatam.—New angle iron gaffs for signalling were completed and the earth connection of the lightning-conductor improved.
Pamban.—A lightning-conductor was fixed to the lighthouse.
Mangalore.—Improvements to lightning-conductor completed.
Cannanore.—Platform carrying light repaired.

(*b*) *Lightkeepers' Quarters.*

The following may be noticed in addition to petty repairs to lightkeepers' quarters, viz.—
Calingapatam.—New quarters were provided for the lightkeepers.
Vakalapudi.—New quarters were completed for the use of the lightkeepers.
Point Divi.—Superintendent's quarters improved and an additional room constructed on the upper story. The fresh-water tank in the lighthouse compound was deepened.
Seven Pagodas.—The sinking of a well for the supply of fresh water for the use of the lightkeepers was completed, and a wall was put up round the well.
Manapad.—Quarters for the Superintendent and two lightkeepers were completed.
Madras.—A new well for the supply of fresh water for lighthouse purposes was sunk in lieu of the old one, which has been appropriated by the Public Works Department. There was no charge on Port funds on account of the new well.

LIGHTNING-CONDUCTORS.

The lightning-conductors attached to the several lighthouses have been examined from time to time by the District Public Works officers. The conductors attached to the lighthouses at Santopilly, Hope Island, Vakalapudi and Armeghon require to be tested. The lighthouses at Tellicherry, Calingapatam and Manapad not being provided with lightning-conductors, arrangements have been made for supplying the same at an early date.

CASUALTY.

The lighthouse at Mangalore was on one occasion struck by lightning during a thunder storm, which resulted in the death of a native youth (who had taken shelter inside from the storm), besides causing slight bodily injuries to one of the lightkeepers.

ESTABLISHMENTS.

The whole of the Lighthouse establishment was reorganized during the year under notice, and may be summarized as follows:—

2 Superintendents of the first class on Rs. 100 each per mensem.
6 Do. of the second class on Rs. 70 each per mensem.
1 Superintendent of the third class on Rs. 50 per mensem.
4 Head Lightkeepers of the first class on Rs. 15 each per mensem.
4 Do. do. of the second class on Rs. 12 each per mensem.
3 Do. do. of the third class on Rs 10 each per mensem.
1 Do. Lightkeeper of the second class on Rs. 12 per mensem with a charge allowance of Rs. 3 per mensem.
5 Do Lightkeepers of the third class on Rs. 10 per mensem with a charge allowance of Rs. 2 each per mensem.
3 Do. Lightkeepers of the third class on Rs. 10 per mensem with a charge allowance of Re. 1 each per mensem.
10 Lightkeepers of the first class on Rs. 9 each per mensem.
21 Do. of the second class on Rs. 8 each per mensem.
23 Do. of the third class on Rs. 7 each per mensem.

One Superintendent of the first class draws an allowance of Rs. 25 in addition for house-rent. Another draws a special allowance of Rs. 25 which will cease to the next incumbent. One of the second-class Superintendents at present draws Rs. 100, which will continue to the present incumbent only.

Charge allowances to Head Lightkeepers are given in the case of men in charge of lighthouses to which no Superintendents are attached, but which are under the immediate supervision of Port Officers or Port Conservators, who are *ex-officio* Superintendents.

DISTRIBUTION OF LIGHTS.

The lights are 29 in number and are distributed as shown below, eight on the West Coast and 21 on the East Coast:—

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West Coast.

1. Kandapur	Country lantern on staff (harbour light)	..	..	..	Red.
2. Malpé	Mast-head light do. (do.)	..	..	..	White.
3. Mangalore	Lighthouse	4th Order	Dioptric	Fixed	Do.
4. Cannanore	Do.	6th do.	Do.	Do.	Red.
5. Tellicherry	Do.	6th do.	Do.	Do.	White.
6. Calicut	Do.	4th do.	Do.	Do.	Do.
7. Cochin	Do.	4th do.	Catadioptric	Do.	Do.
8. Muttum	Do.	1st do.	Dioptric	Do.	Do.

East Coast.

9. Manapad	Tower	6th Order	Dioptric	Fixed	Red.
10. Tuticorin	Lighthouse	4th do.	Do.	Do.	White.
11. Pámban	Do.	4th do.	Catadioptric	Do.	Do.
12. Negapatam	Do.	4th do.	Dioptric	Do.	Do.
13. Cuddalore	Country lantern on staff (harbour light)			Do.	Red.
14. Seven Pagodas	Lighthouse	4th Order	Dioptric	Do.	Do.
15. Madras	Do.	English	Catadioptric	Reciprocating, Flashing.	White.
16. Do.	Port office terrace.	Ship's side light.	Dioptric	Fixed	Green.
17. Do.	Pier T Head.	Do.	Do.	Do.	Red.
18. Pulicat	Lighthouse	4th Order	Do.	Do	White.
19. Armeghon	Do.	4th do.	Do.	Revolving	Do.
20. Point Divi	Do.	4th do.	Do.	Fixed	Do.
21. Masulipatam	Flagstaff	6th do.	Do.	Do.	Do.
22. Hope Island	Lighthouse	6th do.	Do.	Do.	Do.
23. Cocanada	South Groyne	Ship's lantern, globular.	..	Do.	Red.
24. Do.	North Groyne	..	..	Do.	Do.
25. Vakalapudi	Lighthouse	4th Order	Dioptric	Revolving	White.
26. Santopilly	Do.	2nd do.	Do	Fixed	Do
27. Calingapatam	Do.	3rd-class country lantern		Do.	Do.
28. Gopálpur	Flagstaff	Do.	do.	Do.	Do.
29. Do.	Pier T Head	Country lantern	..	Do.	Red.

EXPENDITURE.

The Port Fund accounts for the official year 1889-90, having been finally closed by the Accountant-General, a statement showing the actual expenditure on account of the several lighthouses of this Presidency is herewith submitted. *Vide* Appendix B.

INSPECTION.

With the following unavoidable exceptions, namely, Muttum, Manapad, Seven Pagodas, Pulicat, Armeghon and Point Divi, the lights and lighthouses in the Presidency were inspected in the year by the Presidency Port Officer. The lights at Pulicat and Seven Pagodas were inspected once in the year by the Personal Assistant to the Presidency Port Officer, and the light at Armeghon by the Reserve Port Officer. In addition to these inspections, each light was frequently visited and examined during the year by the nearest Port Officer in each district, and a special inspection of the whole of the lighthouses along the coast of this Presidency was made by Mr. W. T. Douglass, M.I.C.E., at the desire of the Government of India.

It was found impracticable this year also for the Presidency Port Officer to carry out his inspection of the lighthouses jointly with the Chief Engineer to Government as required by G.O., Marine, No. 529, of 3rd December 1884, but nearly all the lighthouses were visited by the Divisional officers of the Public Works Department, and the necessary action taken on the suggestions made by those officers in regard to improvements, &c.

GENERAL REMARKS.

All the lights were efficiently maintained throughout the year, and the reports of Commanders of vessels in regard to their visibility, with the exception of Point Divi light, were, on the whole, satisfactory.

With the exception of the port and harbour lights at Madras, which burn cocoanut oil, and the harbour light at Malpé, for which rapeseed oil is used, all the lights on the Madras Coast use kerosene oil.

A list of the lights, corrected to 31st March 1890, is forwarded herewith.

MADRAS, 21st *August* 1890.

(Signed) H. A. STREET, Captain, H.M.'s I.M., *Presidency Port Officer.*

LIST OF LIGHTS IN THE

Name of light.	Location.	Latitude N.	Longitude E.	Number and relative position of lights.	Colour of light.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash or occultation.
		DEG. M. S.	DEG. M. S.				
Kundapur ..	On the north side of the entrance to the river.	13 38 20	74 39 40	1	Red ..	Fixed	..
Malpe	Close to the entrance to the river.	13 20 40	74 42 0	1	White.	Do. ..	..
Mangalore ..	On a hill above the town and near some high trees.	12 52 17	74 50 08	1	Do. ..	Do. ..	..
Cannanore ..	On the Fort rampart near the beach.	11 51 10	75 21 45	1	Red ..	Do. ..	..
Tellicherry ..	On the Fort wall near the beach.	11 44 50	75 28 30	1	White.	Do. ..	..
Mahe (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 ..	Do. ..	..
Calicut	On the sandy beach .	11 15 05	75 45 35	1	White.	Do. ..	..
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. ..	Do. ..	..
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. ..	..
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. ..	Revolving.	A flash every minute.

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MADRAS PRESIDENCY.

Miles visible in clear weather.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, 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	Visible from all directions seaward.	Flagstaff ..	28	25	Country lantern.	1st Oct. 1888.	Is intended as a guide to vessels making the port. The light will be exhibited annually from 1st October to 31st May only.
5	Visible from all directions seaward, except where obscured to the westward by St. Mary's Island.	Do. ..	37	25	Admiralty pattern mast-head lantern.	Do. ..	Do. do.
14	Visible from all directions seaward.	Small white masonry tower.	240	65	Dioptric, 4th order.	1st Oct. 1842; improved 1870.	As a guide for vessels to the anchorage.
6 to 8	Between the bearings of N. W. by W. ½ W., and E. by S. ½ S.	Small masonry tower of light yellow colour.	64	25 from the rampart.	Dioptric, 6th order.	17th Oct. 1843; improved 1879; transferred to tower 1880.	As a guide to the anchorage.
8	Visible from all directious seaward.	Small masonry tower.	70	26	Do. ..	1835; improved 1870; transferred to tower 1881.	Do. do.
7	Do. ..	Small white pyramid.	52	7	..	1885.	Do. do.
14	Do. ..	White column.	102	98	Dioptric, 4th order.	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	Do. ..	Flagstaff ..	95	102	Country-made lantern.	1865.	Is exhibited only during the south-west monsoon, namely from 15th May to 30th September, when Cochin port is avoided by shipping.
15	Do. ..	White laterite column.	100	91	Catadioptric, 4th order.	1st April 1839; improved 1868.	..
17	Do. ..	Masonry round white tower.	143	115	Catadioptric, 1st order (Holophotal.)	1862 ..	To guide vessels to the smooth water anchorage during the south-west monsoon.

LIST OF LIGHTS IN THE

Name of light.	Location.	Latitude N.	Longitude E.	Number and position of light.	Color of light.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash or occultation.
		DEG. M. S.	DEG. M. S.				
Muttum ..	On a rocky promontory 300 yards from sea known as "Muttum Point."	8 07 30	77 18 10	1	White.	Fixed.	..
	Gulf of Manar.						
Manapad ..	On the Tinnevelly coast.	8 22 30	78 6 30	1	Red ..	Fixed.	..
Tuticorin ..	On the north extreme of Hare Island or Pandian-tivo, 2½ miles east of Tuticorin town.	8 47 10	78 11 20	1	White.	Do. ..	..
Pámban or Pámban Pass.	On a sand hill about 1 mile east of northern channel.	9 17 14	79 12 38	1	Do. ..	Do. ..	..
Negapatam ..	On the jetty near to the river mouth.	10 45 30	79 50 20	1	Do. ..	Do. ..	..
Karikal (French Territory).	At the mouth of the Arseiaar river.	10 55 0	79 50 35	1	Do. ..	Do. ..	..
Cuddalore ..	On cross-trees of flagstaff.	11 43 0	79 46 15	1	Red ..	Do. ..	..
Pondicherry (French Territory).	In square, near the beach.	11 55 25	79 49 35	1	White.	Do. ..	..
Do. ..	End of landing stage.	..	..	1	Red ..	Do. ..	..
Seven Pagodas or Mahabalipuram.	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 ..	Do. ..	..
Madras or Fort St. George.	On the Esplanade north of the Fort.	13 05 11	80 16 51	1	White.	Flashing. The motion is reciprocating and not rotatory.	There are 5 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 48″ 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.

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MADRAS PRESIDENCY—*cont.*

Miles visible in clear weather.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, or any peculiarity of lighthouse.	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	Visible from all directions seaward.	Dark grey granite column.	142	72	Dioptric, 1st order, with 6 duplex burners.	1875; altered 1st Jan. 1883.	This light in the Territory of Travancore is intended to mark the vicinity of the Crocodile rock, which lies 3 miles S. W. ¾ S. of Cadiapatam. Vessels, unless bound to Kolachel or Cadiapatam, should not pass in shore 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.
6	Do. ..	White masonry tower.	104	27	Dioptric, 6th order.	June 1888. .	Is intended to warn vessels of the dangerous shoal in the vicinity.
14	Do. ..	Sandstone column, colored 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 Pámban Channel.
14	Do. ..	Masonry column, painted white.	79	83	Dioptric, 4th order.	1st August 1870.	As a guide for vessels to the anchorage.
9	Do. ..	Flagstaff ..	42	..	Lamp burning cocoanut oil.	1853.	As a guide to the anchorage.
5	Do. ..	Do. ..	130	31	Country lantern with a duplex burner and a dioptric chimney.	1st July 1889.	As a guide to the anchorage.
14	Do. ..	Masonry column, painted light yellow.	89	76	Dioptric, 4th order.	1886 ..	Do. do.
4	Do. ..	Do. ..	31	..	..	1881 ..	When surf is heavy and approach to landing prohibited, a fixed *green light* is shown.
17	Do. ..	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 *Tripalore 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	Do. ..	Granite column.	128	125	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. ½ W. to avoid Pulicat shoal.

LIST OF LIGHTS IN THE

Name of light.	Location.	Latitude N.	Longitude E.	Number and relative position of light.	Color of light.	Fixed, flashing, intermitting, alternating or revolving.	Interval of revolution or flash or occultation.
		Deg. M. S.	Deg. M. S.				
Madras leading light.	Madras Pier T Head.	13 05 44	80 17 18	1	Red ..	Fixed..	..
Do. do. ..	Port Office Terrace..	13 05 47	80 17 05	1	Green .	Do. ..	..
Pulicat ..	Near the beach ..	13 25 15	80 19 06	1	White.	Do. ..	..
Armeghon 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. ..	Fixed.	..
Masulipatam ..	In the Fort ..	16 09 15	81 09 25	1	Do. ..	Do. ..	..
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. ..	Do. ..	..
Cocanada or Vakalapudi.	4¾ miles north of Cocanada River, 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 Southern Groyne, entrance to the river.	..	..	2	Red ..	Fixed.	..
Santopilly ..	On a small detached hill, some distance inland. This distance said to be ⅝ of a mile.	18 04 56	83 37 35	1	White.	Do. ..	..
Calingapatam ..	On the Point ..	18 19 0	84 07 30	1	Do. ..	Do. ..	..
Gopálpur ..	On the mainland, 60 yards from low water mark.	19 13 0	84 52 0	1	Do. ..	Do. ..	..
Do. ..	On the extreme end of the Pier head, port of Gopálpur.	..	..	1	Red ..	Do. ..	..

Note.—The lights at Mahe, Narakel, Allepey, Karikal and Pondicherry, though not under the control of the Madras Government, are entered to make the list complete for the whole coast of the Madras Presidency.

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MADRAS PRESIDENCY—*cont.*

Miles visible in clear weather.	Arc of illumination (bearings are magnetic and from seaward).	Nature of construction, color, or any peculiarity of lighthouse.	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	Visible from all directions seaward.	Wooden post ..	30	..	Ship's side light, dioptric.	15th Oct. 1888.	To guide vessels leaving the harbour or making the anchorage at night.
5	Do. ..	Do. ..	60	..	Do. ..	Do. ..	Do. do.
14	Do. ..	Masonry column with black bands.	68	57	Dioptric, 4th order.	1859; improved 1879; altered 1881.	To guide vessels clear of the Pulicat shoal. When the light bears W. ¼ N., a vessel is to the northward of all dangers.
14	Do. ..	White masonry column.	107	111	Do. ..	1st January 1853; improved 1870; present light 1881.	Warns vessels of the Armeghon shoal, the shoalest part of which (1¾ fathoms) lies 6 miles off shore.
14	Do. ..	Do. ..	43	50	Do. ..	1st May 1851; improved 1870.	Is intended to point out the position of the dangerous sands in the vicinity.
6	Do. ..	Flagstaff ..	69	112	Dioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
14	Do. ..	Masonry tower, horizontal alternate bands of black and white.	83	94	Do. ..	1817; improved 1886.	Intended to lead vessels clear of the shoals off Godávari Point.
14	Do. ..	White column..	80	76	Dioptric, 4th order.	15th January 1879.	This light is intended to lead vessels clear of the shoals to the northward of Point Godávari, when coming into the Cocanada anchorage from the southward and eastward.
2½	All round the compass.	Wooden posts..	10	..	..	15th Sept. 1886.	Exhibited to serve as a guide to boats entering or leaving Cocanada river.
16	Visible from all directions seaward.	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.	173	35½	Dioptric, 2nd order, with five duplex burners.	1st Nov. 1849; improved 1871; present light 1888; improved 16th Aug. 1888.	Exhibited to warn mariners off the Santopilly rocks, from which this light bears N.W. ⅝ W., distant 6½ miles.
8	Do. ..	Obelisk of cut stone, column white, capital dark blue.	76	73	Third-class country-made.	15th Dec. 1876.	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	Do. ..	1871 ..	As a guide to the anchorage.
3	Do. ..	..	25	..	Country lantern.	1st April 1887.	Points out the sea end of the pier.

APPENDIX B.

Particulars relating to the different lights.

Name.	Location.	Date of first exhibition.	Column or flagstaff.	Character, description, color.	Description of illumination.	Height of centre of lantern above sea level.	Number of miles visible in clear weather.
1	2	3	4	5	6	7	8
						FT.	
Kundapur	Kundapur	1st October 1888	Flagstaff	Country red lantern, F.	Kerosine oil	28	3
Malpe	Malpe	1st ,, ,,	Do.	Admiralty mast-head lantern, white, F.	Rapeseed oil	37	5
Mangalore	Mangalore	1842	Column	D., 4th order, white, F.	Kerosine oil	240	14
Cannanore	Cannanore	1843	Do.	D., 6th order, red, F.	Do.	64	6 to 8
Tellicherry	Tellicherry	1835	Do.	D., 6th order, white, F.	Do.	70	8
Calicut	Calicut	1847	Do.	D., 4th order, white, F.	Do.	102	14
Beypore*	Beypore	1883	Flagstaff	Country-made lantern, red, F.	Do.	60	5
Cochin	Cochin	1839	Column	C.D., 4th order, white, F.	Do.	100	15
Muttum	Muttum Point	1875	Do.	D., 1st order, white, F.	Do.	142	16
Manapad	Manapad Point, Tinnevelly Coast.	1st June 1888	Tower on elevated ground.	D., 6th order, red, F.	Do.	104	6
Tuticorin	Hare Island	1845	Column	D., 4th order, white, F.	Do.	85	14
Pámban	Pámban	1846	Do.	C.D., 4th order, white, F.	Do.	97	14
Point Calimere	About 30 miles south of Negapatam.	1st June 1890	Staff	D., 6th order, port-light, pale red, F.	Do.	About 56.	6
Negapatam	Negapatam	1846	Column	D., 4th order, white, F.	Do.	79	14
Cuddalore	Cuddalore	1st July 1889	Flagstaff	Country-made lantern, red, F.	Do.	130	5
Seven Pagodas	Mahabalipuram	1887	Turret on a rock	D., 4th order, red, F.	Do.	119	17
Madras	Madras	1844	Column	C.D., white, flashing	Cocoanut oil	128	20
Do.	Do.	15th October 1888	Staff	D., ship's side-light, red, F.	Do.	30	5
Do.	Do.	15th ,, ,,	Do.	Do. green, F.	Do.	60	5
Pulicat	Pulicat	1859	Column	D., 4th order, white, F.	Kerosine oil	68	14
Armeghon	Monapalliem	1853	Do.	D., 4th order, white, Rev.	Do.	107	14
Point Divi	Point Divi	1851	Do.	D., 4th order, white, F.	Do.	48	14
Masulipatam	Masulipatam	1858	Flagstaff	D., 6th order, white, F.	Do.	69	6
Hope Island	Coringa	1817	Column	D., 6th order, white, F.	Do.	83	14
Cocanada	Cocanada	1886	Staff	Ship's light, red, F.	Do.	10	2½
Do.	Do.	1886	Do.	Do. do.	Do.	10	2½
Vakalapudi	Do.	1879	Column	D., 4th order, white, Fl.	Do.	80	14
Santopilly	Konada	1849	Basement on top of a hill.	D., 2nd order, white, F.	Do.	173	16
Calingapatam	Calingapatam	1876	Column	3rd-class country, white, F.	Do.	76	8
Gopálpur	Gopálpur	1871	Flagstaff	Do. white, F.	Do.	85	10
Do.	Do.	1887	Staff on pier head	Country red, F.	Do.	25	3

* Light discontinued from 1st July 1889.

Particulars relating to the different lights—*cont.*

Name.	Cost of: Establishments. Superintendents.	Establishments. Lightkeepers.	Oil.	Stores.	Contingencies.	Construction and repairs.	Total cost in 1887-88.	Total cost in 1888-89.	Total cost in 1889-90.	
	9	10	11	12	13	14	15	16	17	18
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Kundapur	..	52 0 0	8 8 0	4 11 3	27 9 10	..	..	53 11 4	88 11 3	
Malpe	..	51 0 0	8 2 0	12 15 3	16 10 0	..	60 5 7	92 4 1	92 4 1	
Mangalore	..	308 0 0	94 9 5	10 9 5	65 13 1	123 8 7	1,163 0 0	945 12 1	602 7 6	
Cannanore	..	220 0 0	194 9 5	2 0 5	25 4 4	263 12 6	709 0 0	357 13 11	705 10 8	
Tellicherry	..	220 0 0	194 9 5	..	31 1 10	..	347 0 0	460 5 4	445 11 3	
Calicut	..	324 0 0	124 9 5	21 8 1	17 15 8	108 2 5	1,698 0 0	1,495 6 2	596 3 7	
Beypore*	..	60 0 0	40 0 0	..	3 14 4	..	168 0 0	125 3 6	83 14 4	* Light discontinued from 1st July 1889.
Cochin	..	340 0 0	194 9 5	5 7 3	2 6 4	..	359 0 0	498 4 9	542 7 0	
Muttum	1,509 0 0	477 8 0	1,105 9 2	39 10 6	136 2 3	..	2,815 0 0	3,018 9 7	3,258 13 10	
Manapad	610 14 9	243 1 1	262 6 9	1,521 11 0	75 11 4	2,290 7 4	1,809 0 0	3,897 7 5	5,004 4 3	
Tuticorin	..	492 0 0	209 1 5	10 14 1	39 4 3	93 8 0	807 0 0	833 9 3	844 11 9	
Pámban	..	224 0 0	130 5 5	..	68 6 2	343 0 6	397 0 0	239 3 8	765 12 1	
Point Calimere†	..	..	..	..	863 10 2	1,434 3 11	..	..	2,297 14 1	†† Figures represent part expenditure on account of construction of lightkeepers' quarters incurred up to January 1890 by Public Works Department. Light not exhibited till 1st June 1890.
Negapatam	..	308 0 0	111 2 9	173 5 4	14 6 11	712 13 8	674 0 0	661 0 9	1,319 12 8	
Cuddalore	..	56 0 0	56 4 0	62 13 5	111 1 1	..	..	..	286 2 6	
Seven Pagodas	840 0 0	331 11 9	136 3 5	1 2 0	84 7 8	983 0 5	3,987 0 0	7,611 2 9	2,376 9 3	
Madras	1,563 0 0	513 8 8	1,336 14 0	42 6 0	70 0 5	..	9,261 0 0	5,697 5 1	3,525 13 1	
Do.	Expenditure met from Madras Port Contingencies.									
Do.										
Pulicat	840 0 0	344 0 0	106 8 3	..	81 0 5	2,061 14 2	2,069 0 0	1,888 15 2	3,433 7 1	
Armeghon	1,200 0 0	447 3 1	106 8 6	32 3 6	212 15 10	..	3,090 0 0	1,975 7 9	1,998 14 11	
Point Divi	840 0 0	458 2 11	216 3 0	8 6 2	8 14 4	1,245 10 10	1,496 0 0	1,440 10 1	2,777 5 3	
Masulipatam	..	183 9 10	75 7 7	3 12 5	4 7 9	..	326 0 0	217 0 10	267 5 7	
Hope Island	840 0 0	516 0 0	156 14 7	22 1 2	227 15 6	..	1,931 0 0	1,816 9 4	1,761 15 3	
Cocanada	Expenditure met from Cocanada Port Dues under Act III of 1883.									
Do.										
Vakalapudi	1,300 0 0	505 9 10	155 14 7	49 8 2	96 8 1	515 2 8	2,348 0 0	5,089 2 7	2,622 11 4	
Santopilly	840 0 0	467 4 9	750 14 6	38 6 0	56 10 3	124 1 5	3,897 0 0	2,604 7 1	2,277 4 11	
Calingapatam	221 15 0	226 0 0	259 0 2	1,502 6 2	27 15 10	327 14 3	367 0 0	2,258 10 2	2,565 3 5	
Gopálpur	..	224 0 0	130 4 1	9 4 0	35 0 8	140 12 1	421 0 0	266 8 0	539 4 10	
Do.										
Total	10,595 13 9	7,592 11 11	6,144 3 6	3,575 1 6	2,404 12 4	10,768 0 9	40,033 0 0	43,512 12 2	41,080 11 9	

Charges on account of Establishment, Contingencies and Public Works of the Lighthouses in the Presidency for the past three years are as detailed below:—

	1887-88.	1888-89.	1889-90.
	RS.	RS.	RS.
Establishment and Contingencies	25,850	26,546	30,313
Public Works charges	14,183	17,967	10,768
Total charges	40,033	43,513	41,081

From the above it will be seen that charges on account of Establishment and Contingencies for 1889-90 are Rs. 4,463 and 4,767 over those of the years 1887-88 and 1888-89, respectively, the excess being chiefly due to the special charges specified below:—

	RS. A. P.
Cost of heavy mineral oil received from England	1,422 11 8
Two 4th order dioptric lights for Manapad and Calingapatam	2,994 4 0
Total	4,416 15 8

Public Works charges for the year under review are far below those of the two preceding years.

6/248

ORDER—dated 3rd September 1890, No.327, Marine.

Recorded.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Presidency Port Officer.
„ Public Works Department.

ENDORSEMENT—dated 3rd September 1890, No. 328, Marine.

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

J. F. PRICE,
Chief Secretary.

ENDORSEMENT—dated 3rd September 1890, No. 329, Marine.

Twenty copies to the Government of Bengal, Municipal Department, with reference to its letter, dated 18th April 1887, No. 1377.

J. F. PRICE,
Chief Secretary.

ENDORSEMENT—dated 3rd September 1890, No. 330, 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 3rd September 1890, No. 331, Marine.

Ten copies to the Chief Commissioner of Burma.

J. F. PRICE,
Chief Secretary.

Exd. A. Raitt.

Govt. of {1890} Madras.

MARINE.

1912 II
22

No. 2488 Wx/17 Sept. 1890

Communicated to Supdg. Engineers concerned for information.

(Sd) J. P.
W

Issued

Recd. Encl.

G.O., &c., 3rd September 1890,
Nos. 327—331.

SEPTEMBER.

Lights and Lighthouses.

Recording the report on the — in the Madras Presidency for 1889-90; and forwarding copies to the Governments of India, Bengal and Bombay and the Chief Commissioner of Burma.

S. E. I, II, III, IV, V & VI circles