Public Works (1896) Department.

G.O., No. 184 3/6

Dated 19/8/96

[Despatch Abstract.]

Lightning Conductor of the lighthouse at Cananore — Report of SE IV Circle on the — Communicated to the Secretariat Dept.

[P. W. 28. 1,000—5-8-96.]

BACK PAPERS.

G.O.	No.	Department,	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

5165

Rec'd: 8.6.96

From
The Supg. Engineer
4th Circle.
No. 2619 W. d/ 24-10-95

Dated 5th
Desp.d 6th } June 1896

To
Sist
No 1843 W. d/ 19th June 1896
Communicated
to the Marine Dept
with reference to para
4 of S.O. No 288 Marine
of 2nd Octr 1895.

No. 273
W.

10/6/96

Lightning Conductor of the
Light-house at Cannanore.

Reporting that the —
is in good order

Marine Dept.
Marine Dept

O.L.S. 171 21/6

BACK [illegible]ERS.

No. 256 8.96 Executive Engineer's office
West Coast Division
Calicut 2nd June 1896

From

G. P. Carless Esq;
Executive Engineer
West Coast Division

To

The Superintending Engineer
Fourth Circle
Coimbatore

Sir,

I have the honor to inform you with reference to your No. 495/W.C dated 26th October 1895 that the lightning Conductor at Cannanore was tested last month and found to be in good order

I have &c.

(Signed) G. P. Carless
Executive Engineer

No. 273/W dated 5th June 1896.

Copy submitted to the Chief Engineer P.W.D for information with reference to G.O. No. 2814 dated 24th October 1895.

J. C. [illegible]
Superintending Engineer
4th Circle

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper:—

From Commander W. J. POWELL, R.I.M., Presidency Port Officer, Madras, to the Chief Secretary to Government, dated Madras, 23rd September 1895, No. 1771—263 G.

I have the honour to forward herewith the annual report on the lights and light-houses in the Madras Presidency for the official year 1894–95.

Enclosures.

Report on the Lights and Lighthouses on the Coasts of the Madras Presidency for the official year 1894–95.

Coondapoor.—Owing to erosion of the sea the light was removed from the north to the south side of the harbour entrance. Its colour was changed from red to white with more satisfactory results.

Malpé.—Cabin and mast, &c., painted and whitewashed.

Mangalore.—Column and service-rooms whitewashed and painted.

Cannanore.—Lighthouse in good order; no annual repairs found necessary; light-keepers' quarters repaired.

Tellicherry.—Certain vacant buildings on the lighthouse bastion were converted into quarters for the light-keepers; annual repairs to the lighthouse carried out; lighthouse, store-room and keepers' quarters in fair condition.

Calicut.—Column and lantern-room painted outside, outer buildings whitewashed, and railings and gate repaired.

Cochin.—Column painted outside with a coat of Carson's stone colour paint; buildings in good order; a new shelf provided for keeping spare burners, towels, &c., in the lighthouse, and two shelves in the oil-room for tinkers' tools, &c.

Muttum.—Annual whitewashing to Superintendent's quarters and out-houses carried out departmentally; column, lantern and buildings in good condition.

Manapad.—Sundry improvements and repairs to the lighthouse and keepers' quarters carried out by the Public Works Department.

Tuticorin.—Column, lantern, lenses and buildings in good order.

Pámban.—Column, &c., in good order. The improvements to the lantern are still uncarried out, pending orders from Government.

Tondi.—A wire-fencing was put up round the pole.

Point Calimere.—Estimates for improved quarters for the keepers are held over, pending orders of Government on Mr. Ashpitel's proposals.

Negapatam.—Column required cleaning inside and out; estimates are awaited.

Cuddalore.—Light-keeper's quarters and flagstaff in good condition.

Seven Pagodas.—Lighthouse in good order; no annual repairs were found necessary; Superintendent's and keepers' quarters whitewashed and petty repairs executed.

Madras.—The new 3rd order double flash light for this port was installed on the tower of the new Law Courts and the light brought into use from 1st June 1894. The arrangements for keeping out rain are most unsatisfactory; the matter has been referred to the Consulting Architect.

Pulicat.—Lantern painted; cook-rooms provided for the keepers, also a godown for the Superintendent's use.

Armeghon.—Superintendent's and keepers' quarters repaired, and lighthouse column whitewashed.

Point Divi.—A new locker supplied for Douglass burners; two fresh-water tanks fitted with wooden beds; column and buildings painted white; light-keeper's quarters put in repair.

Hope Island.—Column, basement, store-rooms and Superintendent's and light-keepers' quarters repaired departmentally.

Vakalapudi.—Building and machinery in good order; column whitewashed.

Santopilly.—Annual petty repairs and whitewashing carried out departmentally. Repairs on a large scale are required here, but are held over, pending orders of Government on Mr. Ashpitel's report.

Calingapatam.—The red light was removed from the column to a temporary structure. A new 4th order dioptric white occulting light to replace the red light was obtained, but was not installed on the column and brought into use till after the year under notice. Column repaired.

Gopalpur.—Platform of light strengthened and provided with chain and platform protection. Light-keepers' quarters repaired.

Lightning Conductors.

See remarks in Appendix C.

Establishments.

Details of the lighthouse staff are given in Appendix D, and of cost in Appendix A.

Particulars of Lights.

See Appendix B.

Stores and Supplies

Were well maintained.

General Remarks.

All the lights were displayed throughout the year without accident or interruption. The question of more efficiently lighting the Madras Coast was considered, and, as a preliminary measure, a joint inspection of existing lighthouses and light arrangements was carried out by Mr. F. W. Ashpitel of the Public Works Department and the Presidency Port Officer, and a report submitted to Government dealing with the changes and improvements which it was thought desirable to introduce.

Lighthouse Charges.

Appendix A affords particulars of charges for the year. The following is a comparative statement thereof for the past three years:—

—	1892–93.	1893–94.	1894–95.
	Rs.	Rs.	Rs.
Establishment, stores and contingencies	72,292	32,589	43,907
Public Works charges	9,849	7,409	12,649
Total ..	82,141	39,998	56,556

The variations under each detailed head of charge are explained below:—

—	1893–94.	1894–95.	Difference. More.	Difference. Less.
	Rs.	Rs.	Rs.	Rs.
Superintendents and Light-keepers ..	19,978	20,661	683	..
Oil	6,617	7,514	897	..
Stores	1,936	12,817	10,881	..
Contingencies	4,058	2,915	..	1,143
Public Works charges	7,409	12,649	5,240	..
Total ..	39,998	56,556	17,701	1,143
			+ 16,558	

1. The increase under pay of Superintendents and Light-keepers is due to payment of leave allowance at Rs. 50 a month to the Superintendent of Madras Lighthouse on sick leave.

2. Excess in cost of oil over 1893–94 is due to introduction of improved burners.

3. Rupees 10,182 has been charged under stores on account of cost of new light at Calingapatam.

4. Excess under Public Works charges was due to repairs at Armeghon, Manapad, Pulicat, Tellicherry, Point Divi and Calingapatam lighthouses.

APPENDIX A.

Particulars of Charges relating to different Lights.

—	Establishment. Superintendents.	Establishment. Light-keepers.	Oil.	Stores.	Contingencies and Miscellaneous.	Construction and repairs.	Total, 1894–95.	Total, 1893–94.	Total, 1892–93.	Remarks.
	1	2	3	4	5	6	7	8	9	10	11
	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.	Rs. A. P.	
Coondapoor	..	191 11 9	27 7 1	34 2 2	36 7 7	124 12 4	414 8 11	404 11 7	348 7 4	
Malpé ..	..	191 11 8	45 13 9	28 13 11	5 1 7	..	271 8 11	289 12 4	271 9 3	
Mangalore	..	323 6 10	328 10 7	13 8 0	28 12 0	..	694 5 6	940 2 10	2,551 7 7	
Cannanore	..	234 6 5	126 10 2	1 5 2	46 9 10	..	408 15 7	333 1 5	363 14 3	
Tellicherry	..	228 0 0	102 4 1	35 6 9	17 5 7	654 8 9	1,044 14 7	530 14 9	594 13 8	
Calicut ..	..	323 0 0	225 8 4	80 1 8	93 1 8	203 12 0	889 1 4	1,004 15 7	1,451 12 8	
Do.	..	324 0 0	267 2 7	158 12 3	24 14 0	56 10 7	846 6 5	878 5 9	1,777 3 2	Light at end of pier.
Cochin ..	..	..	..	..	68 7 7	28 0 0	..	51 13 1	..	
Beypore ..	..	668 1 7	597 11 3	94 10 8	889 1 2	..	2,849 8 8	3,956 2 5	5,081 9 3	
Muttum ..	..	321 8 4	240 4 4	43 14 9	76 8 3	1,460 13 10	2,927 9 8	2,084 8 10	1,195 10 7	
Manapad ..	..	694 1 0	405 14 7	98 6 1	220 3 1	..	1,418 8 9	1,476 9 10	2,587 11 2	
Tuticorin ..	..	321 8 1	131 9 9	46 14 8	21 3 3	..	621 3 9	612 13 7	1,389 5 11	
Pámban ..	..	228 0 0	131 9 10	49 14 10	17 5 7	..	426 14 3	336 1 6	669 9 3	
Tondi ..	..	324 0 0	127 3 6	1 3 5	93 1 8	..	545 11 7	499 5 0	1,136 10 11	
Point Calimere	..	346 0 0	254 14 5	73 10 5	63 10 1	..	738 2 11	700 1 5	2,576 12 1	
Negapatam	..	428 0 0	68 10 8	60 13 9	43 13 6	600 0 0	1,191 5 11	526 0 4	3,886 3 0	
Cuddalore	..	468 8 7	190 3 11	139 12 0	93 15 9	260 1 10	1,992 10 1	1,606 9 2	2,465 4 8	
Seven Pagodas	..	667 0 10	1,198 5 11	227 13 0	726 0 4	426 0 4	5,133 4 5	6,724 4 1	27,921 4 9	
Madras ..	..									Two lights mark the entrance to the harbour and two lights show the fair way.
Do. ..	..									
Do. ..	..									
Pulicat ..	..	840 0 0	164 12 7	141 4 3	151 7 10	1,701 9 3	3,431 1 11	3,905 4 9	2,725 13 4	
Armeghon ..	..	601 0 7	157 13 3	191 11 0	138 11 14	3,336 10 7	5,625 15 4	2,421 15 6	2,983 3 3	
Point Divi ..	..	565 0 2	190 7 0	90 7 9	138 3 7	850 11 7	2,674 14 1	2,223 4 9	2,591 8 10	
Maetlpatam ..	..	216 0 0	165 4 6	85 13 4	48 8 6	..	465 10 4	276 2 11	300 2 10	Bar lights.
Do. ..	..									
Hope Island ..	..	752 9 0	376 13 7	8 5 1	114 10 4	610 4 1	2,702 10 1	2,065 8 0	9,998 9 6	Groynes lights.
Cocanada ..	..									
Do. ..	..	840 0 0	343 1 2	14 9 6	148 2 1	403 12 0	2,364 6 9	2,492 2 1	2,545 7 2	
Vakalapudi ..	..	614 14 0	1,094 12 7	91 4 0	137 4 4	113 0 0	2,747 9 6	2,278 6 9	3,838 2 8	
Santopilly ..	..	471 4 7	447 15 1	11,020 12 10	62 10 2	1,767 8 3	13,726 12 5	778 12 0	608 13 10	
Calingapatam ..	..	207 14 1	103 3 4	43 0 1	63 5 3	77 7 7	502 3 5	490 7 5	329 5 4	
Gopalpur ..	..	215 3 2								Light at end of pier.
Do. ..	..									
Total ..	10,302 7 9	10,358 14 8	7,514 3 10	12,816 10 4	2,914 10 10	12,649 1 2	56,556 0 7	39,998 5 8	82,140 8 5	

APPENDIX

List of Lights on 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.
Coondapoor ..	On a site 50 feet to the northward of the southern boundary pillar of the port.	13° 37′ 30″	74° 39′ 40″	1	White ..	F.	....
Malpé	In the vicinity of the Custom House.	13 20 40	74 42 0	1	Do. ...	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	Near the 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	1	Do. ..	Rev ..	One minute .. ...
Muttum ..	On a rocky promontory 300 yards from sea, known as Muttum Point.	8 07 30	77 18 10	1	Do. ..	F.	....

* These lights have hitherto in Light Lists been described as Dioptric; they are

B.

Coasts of the 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.
6	180	Steel mast ...	45	40	6th order * Catadioptric port light.	1st October 1888; present light 1st Nov. 1891; altered 15th Sept. 1894.	Exhibited only from 15th September to 31st May.
6 to 8	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. ..	53	50	Do.	1st October 1888; present light 1st Nov. 1891.	Do. do.
14	From N. by E. ½ E. thro' E. to S. by W. ½ W.	Small white masonry tower.	240	65	* Catadioptric, 4th order.	1st October 1842; improved 1870.	
6 to 8	Between the bearings of N. W. by W. ¼ W. and E. by S. ¾ S.	Small masonry tower of a light yellow colour.	64	25 from the rampart.	* Catadioptric, 6th order, port light.	17th Oct. 1843; improved 1879; transferred to tower 1880.	
6 to 8	N. W. thro' E. to S. E.	Small masonry tower.	70	26	* Do.	1835; improved 1870; transferred to tower 1881.	
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	* Catadioptric, 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	180° from N.N. W. thro' E. to S.S.E.	Flagstaff ..	95	102	Country made lantern.	1865 ..	Is exhibited from 15th May to 30th September.
14	From N. by W ¾ W. thro' 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. (Holophotal).	1862.	
17	From N. 64 W. thro' N. and E. to S. 84 E.	Dark gray granite column, showing black and white horizontal stripes from seaward.	142	72	* Catadioptric, 1st order.	1875; altered 1st January 1893.	Is intended to mark the vicinity of the Crocodile Rock, which lies 3 miles S.W. ¾ S. of Cadiapatam Point.

all fitted with either reflectors or mirrors and show over an arc of from 180° to 270°.

List of Lights on 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.
Gulf of Manaar.							
Manapad ..	On summit of Manapad Point.	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.	....
Pámban or Pámban Pass.	On a sand-hill about one mile east of Northern Channel.	9 17 14	79 12 38	1	Do. ..	F.	....
Tondi	About 14 yards due south of the Tondi Sea Custom House.	9 44 45	79 00 30	1	Red ..	F.	....
Point Calimere..	On the point about 30 miles south of Negapatam.	10 18 0	79 51 30	1	Do. ..	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 Araselar 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 Mahábalipuram.	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 main tower of the Law Courts on the Esplanade, North of the Fort.	13 05 13	80 16 52	1	White ..	Fl.	Double flashing of half minute periods giving two flashes of about 2 seconds separated by an eclipse of about 3 seconds followed by a long eclipse of 23 seconds.
Madras Leading Light.	Madras Pier T. Head.	13 05 44	80 17 18	1	Red ..	F.	....
Do. ..	Custom Office Terrace	13 05 47	80 17 05	1	Green ..	F.	....
Pulicat	Near the Beach ..	13 25 15	80 19 06	1	White ..	F.	....

* These lights have hitherto in Light Lists been described as Dioptric; they are

Coast of the 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.
8	N.N.E. thro' E. to S.S.W.	White masonry tower.	104	27	* Catadioptric, 4th order, port light.	June 1888..	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; improved 1893.	
14	Do.	Circular masonry column.	97	72	Do.	21st April 1846; improved 1860; improved 1893.	As a guide to vessels making for the Pámban Channel.
6 to 8	Visible from all directions seaward.	Steel mast ..	63	52	* Catadioptric, 6th order, port light.	1st October 1892.	
6 to 8	All round the compass.	Steel mast, painted white.	49	..	Dioptric, 6th order, port light.	1st June 1890.	As a guide to vessels passing between Point Calimere and the shoals to the eastward.
14	From N. 5 W. thro' W. to S.S.E.	Masonry column, painted white.	79	83	* Catadioptric, 4th order.	1st August 1846; improved 1870; improved 1893.	
9	Visible from all directions seaward.	Do.	42	..	Lamp burning cocoanut oil.	1853.	
6 to 8	N. thro' W. to S.	Flagstaff ..	130	31	* Catadioptric, 6th order, port light.	1st July 1889; present light 5th Oct. 1891.	
14	Visible from all directions seaward.	Masonry column, painted light yellow.	89	76	Dioptric, 4th order.	1886.	When surf is heavy, and approach to landing prohibited, a *fixed green* light is shown.
4	Do.	....	31	..	....	1881.	
10	From N. thro' W. to South (180°).	Small grey turret.	119	26	* Catadioptric, 4th order.	10th July 1887; improved 1893.	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	Shows all round the compass visible from all directions seaward on the following bearings, from N. to E. thro' W. to S. by W.	Tower is an octagonal structure of brick and stone.	166	190	Dioptric, 3rd order.	1st June 1894.	Service intensity full power 18,000 candles.
5	From S 51° 45° W. thro' W. to N. 17° W.	Wooden post ..	30	..	Ship's side light, Dioptric.	15th October 1888.	To guide vessels leaving the harbour or making the anchorage at night.
5	Do.	Do. ..	60	..	Do.	Do.	Do. do. do.
14	From N. by W. thro' W. to S. by E.	Masonry column with black bands.	68	57	* Catadioptric, 4th order.	1859; improved 1870; altered 1881; improved 1893.	To guide vessels clear of the *Pulicat shoal*.

all fitted with either reflectors or mirrors and show over an arc of from 180° to 270°.

List of Lights on 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.
Armeghon or Armogham.	On the mainland, village of Moona or Moonapollium.	13° 53′ 08″	80° 11′ 47″	1	White ..	Rev.	Every 45 seconds ..
Point Divi or Divy.	About 2 miles North-west 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 Vakalapudi.	4¾ miles north of Cocanada river and about 500 yards from the shore.	17 0 40	82 16 30	1	Do. ..	Rev.	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 river.	..	.. ..	2	Red ..	F.	....
Santipilly ..	On a small detached hill some distance inland. This distance said to be ¾ 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.	....
Gopalpur ..	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 Gopalpur.	..	..	1	Red ..	F.	....

* These Lights have hitherto in Light Lists been described as Dioptric; they are all fitted with either reflectors or mirrors and show over an arc of from 180° to 270°.

Coasts of the 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.
14	From N. E. thro' W. to S. E.	White masonry column.	107	111	Dioptric, 4th order, Single flash 45 seconds.	1st January 1853; improved 1870; present light 1881; improved 1893.	Warns vessels off the *Armeghon shoal*, the shoalest part of which (1¾ fathoms) lies 6 miles off shore.
12	From N. E. thro' W. to S.	White masonry column.	48	50	* Catadioptric, 4th order.	1st May 1851; improved 1870; improved 1893.	Is intended to guide vessels clear of the point.
6	From S. 26° W. thro' W. to N. 9° E.	Flagstaff ..	69	112	* Catadioptric, 6th order.	1858; improved 1870.	As a guide for vessels to the anchorage.
14	From N. 5° E. thro' W. to S 5° W.	Masonry tower, horizontal alternate bands of black and white.	83	94	Dioptric, 4th order.	1817; improved 1886; improved 1893.	Is intended to guide vessels clear of Sacramento shoal and Godávari Point.
14	All round the compass.	White column..	80	76	Dioptric, 4th order, single flash 20 seconds.	15th January 1879.	This light is intended as a guide to vessels approaching Cocanada anchorage.
2½	Do.	Wooden post ..	10	..	..	15th September 1886.	To guide boats entering or leaving Cocanada river.
16	From N. E. thro' 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	* Catadioptric, 2nd order; improved 1893.	1st November 1849; improved 1871; present light 1886; improved 16th August 1888.	Exhibited to warn mariners of the *Santipilly 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	* Catadioptric, 4th order, port light.	15th December 1876; improved 1st June 1890.	Intended to warn vessels of 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.
10	From N. E. thro' N. W. to S. W.	Flaffstag, painted white.	54	33	* Do.	Present light 1871; 1st March 1892.	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.

APPENDIX C.

Statement furnishing (1) Particulars of Inspection made of Lighthouses on the Madras Coast in 1894-95 and (2) Remarks in connection with Lightning Conductors.

(1)			(2)
Name of Light.	Officers by whom inspected.	Number of inspections.	Remarks as to Lightning conductors.
Coondapoor ..	Presidency Port Officer	1	
	Superintending Engineer	1	
	Executive do.	3	
	Port Officer, Mangalore	2	
Malpé	Presidency Port Officer	1	
	Port Officer, Mangalore	2	
Mangalore ..	Presidency Port Officer	1	Lightning conductor not tested during the year.
	Superintending Engineer and Executive do. Jointly ..	1	
Cannanore ..	Port Officer, Calicut	2	
Tellicherry ..	Presidency Port Officer	1	
	Port Officer, Calicut	1	
Calicut	Presidency Port Officer	1	Lightning conductor in good order.
	Superintending Engineer and Executive do. Jointly ..	1	
Cochin	Presidency Port Officer	1	Lightning conductor in good order but not tested during the year.
Muttum	Port Officer, Tuticorin	4	Lightning conductor tested in September 1894.
	Executive Engineer	1	
Manapad ..	Port Officer, Tuticorin	3	Lightning conductor tested in October 1894.
	Executive Engineer	1	
	Public Works Department Officers of subordinate rank.	6	
Tuticorin ..	Presidency Port Officer	1	Lightning conductor in good order but not tested during the year.
	Superintending Engineer	1	
	Executive do.	2	
Pámban	Executive Engineer	1	Lightning conductor not tested during the year.
Tondi	Port Officer, Pámban	4	
Point Calimere ..	Port Officer, Negapatam	11	
Negapatam ..	Presidency Port Officer	2	Lightning conductor not tested during the year.
	Superintending Engineer	1	
	Executive do.	1	
Cuddalore ..	Presidency Port Officer	2	
Seven Pagodas ..	Presidency Port Officer	1	Lightning conductor in good order; tested in December 1894.
	Superintending Engineer	1	
	Executive Engineer	1	
Pulicat	Presidency Port Officer	1	Lightning conductor in good order; tested in January 1895.
	Superintending Engineer	1	
	Executive Engineer	1	
Armeghon ..	Presidency Port Officer	1	Lightning conductor in good order; tested in January 1895.
	Executive Engineer	1	
	Superintending Engineer	1	
Point Divi ..	Port Officer, Masulipatam	1	
Hope Island ..	Port Officer, Cocanada	12	Lightning conductor tested during the year.
	Presidency Port Officer	6	
Vakalapudi ..	Presidency Port Officer	1	Lightning conductor in good order but not tested during the year.
	Port Officer, Cocanada	1	
Santopilly ..	Presidency Port Officer	9	
	Port Officer, Bimlipatam	1	
Calingapatam ..	Port Officer, Gopalpur	11	
	Executive Engineer	1	
Gopalpur ..	Port Officer, Gopalpur	1	
		See foot-note.	

Note.—At stations where there is a Port Officer or Conservator, such officers, as *ex-officio* Superintendents, frequently visited the lighthouses in addition to the outside inspections above noticed.

APPENDIX D.

Statement showing the sanctioned Establishments of Lighthouses on the Madras Coast as they stood on the 31st March 1895.

Lights.	Superintendents.			Head Light-keepers.				Light-keepers.			Total staff of each light.	Remarks.
	1st Class.	2nd Class.	3rd Class.	1st Class.	2nd Class.	3rd Class.	1st Class.	2nd Class.	3rd Class.			
	Rs. 100.	Rs. 70.	Rs. 50.	Rs. 15.	Rs. 12.	Rs. 10.	Rs. 9.	Rs. 8.	Rs. 7.			
Coondapoor									(b) 1		2	(a) *Plus* Charge allowance of Re. 1.
Malpé ..									(b) 1		2	(b) Temporarily for 8 months (October to May).
Mangalore								1			3	(c) *Plus* Charge allowance of Rs. 2.
Cannanore									1		2	(d) *Plus* House allowance of Rs. 26.
Tellicherry								1			2	(e) Temporarily. *Plus* charge allowance of Rs. 2 and provision allowance of Re. 1.
Calicut ..								1			3	(f) Temporarily. *Plus* provision allowance of Re. 1.
Cochin ..							1				3	(g) Flag-signalling allowance of Rs. 10.
Muttum ..								1			6	(h) Also a flag-signaller on Rs. 8.
Manapad								1			4	(i) *Plus* charge allowance of Rs. 20.
Tuticorin (Hare Island)								1			3	(j) Rising to Rs. 9.
Pámban								1			2	(k) The whole Calingapatam establishment is sub. *pro tem.* and to take effect from 1st May 1895.
Tondi								1			3	(l) Also two water boys on Rs. 7 each.
Point Calimere								1			3	
Negapatam								1			5	
Cuddalore								1			7	
Seven Pagodas								1			5	
Madras			(d) 1								1	
Pulicat								1			3	
Armeghon								1			5	
Point Divi								1			6	
Masulipatam								1			6	
Coringa or Hope Island									(l) 2		2	
Sacramento										(h) 1	6	
Vakalapudi										(j) 1	5	
Santopilly											5	
Calingapatam (k)											2	
Gopalpur												

Note.—The light-keepers on entertainment will receive Rs. 7 per mensem during their first year of service, after which if well reported on, they will receive Rs. 8 during their second year, and Rs. 9, thereafter. All light-keepers at Muttum, Manapad, Seven Pagodas, Armeghon, Point Divi, Hope Island, Vakalapudi and Santopilly receive an allowance of Rs. 1 per mensem, as compensation for the difficulty and expenses connected with obtaining supplies.

Amalgamated Establishments.

Lighthouses.	Head Light-keeper and Head Signaller.	Light-keeper and Signaller.			Total staff.
	Rs. 20.	Rs. 11.	Rs. 9.	Rs. 8.	
Tuticorin	1	1	1	1	5
Cuddalore	1	1	..	2	3

Temporary.—Lighthouse Mechanic, Rs. 80 per mensem, rising by annual increments of Rs. 5 to Rs. 100.

(Signed) W. J. POWELL, Commander, R.I.M.,
Presidency Port Officer.

Order—No. 288, Marine, dated 2nd October 1895.

Recorded.

2. With reference to the Presidency Port Officer's remarks in regard to Pámban, Point Calimere and Santopilly, it is observed that Mr. Ashpitel's report is under consideration.

3. The Presidency Port Officer will be requested to submit a separate report on the alterations necessary for keeping out rain at the Madras light.

4. The Public Works Department will be requested to take early steps for testing the lightning conductors at Cannanore and Santopilly, the former of which has not been examined since 1892, and the latter not since it was fitted up in the same year—*vide* Appendix C to G.O., No. 391, Marine, dated 2nd October 1894.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Presidency Port Officer.
" the Public Works Department.
" F. W. Ashpitel, Esq.

Endorsement—No. 289, Marine, dated 2nd October 1895.

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

J. F. PRICE,
Chief Secretary.

Exd. S. J. Pereira.

Govt. of {1895} Madras.

MARINE.

10 L.C.
P.W. 7917/95

Issued

Recd. Encl.

G.O., &c., Nos. 288, 289,
2nd October 1895.

OCTOBER.

No 2619 W dt 24th October 1895

Communicated to officers Concerned

2. The Supdg Engrs IV and I Circles will make early arrangements to test the lightning Conductors at Cannanore and Santopilly.

(Sd) J. P. W

To 2 Es. (Except III)
C.A. to Govt

Lights and Light-houses.

Recording report on the — in this Presidency for 1894–95; directing the Presidency Port officer to submit a separate report on the alterations necessary for keeping out rain at the Madras light; and requesting the Public Works Department to take early steps for testing the lightning conductors at Cannanore and Santopilly.