[Fin. D / 6.]
500—24-8-97.

Financial (1898) Department.

ORDINARY MS.

G.O., No. 777

DATED 7-9-98

29/23

[illegible]

[Despatch Abstract.]

Recording proceedings, Marine dept, reviewing the Administration Report of the Madras Harbour Trust Board for the year 1897-98

1-4-98

BACK PAPERS.

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

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
3054/97							

Further CURRENT No. 3403

Government {1898} of Madras.

MARINE.

539: 12-7-97 Mis

CHIEF SECRETARY
-3 SEP 1898
GOVERNMENT OF MADRAS

Recd. } 1898. *Enclosures*

Regd. } *Spare copies*

G.O., No. 694, 16th August 1898.

C.S. / mis

Order No. 777, 8th Septr. 1898

AUGUST.

Recorded.

Cml. 6.9.98

To

The Acct Genl (Sc to)

Rep. 12.9.98

Madras Harbour Trust Board

Reviewing the Administration Report of the — for the year 1897-98.

WITH ORDER

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

READ—the following papers:—

From the Chairman, Harbour Trust Board, dated 24th June 1898, submitting the Administration Report of the Trustees of the Madras Harbour for the official year 1897-98.

From J. N. ATKINSON, Esq., I.C.S., Chairman, Harbour Trust Board, to the Secretary to Government, Marine Department, dated Madras, 10th August 1898, No. 1742.

I have the honour to acknowledge the receipt of your memo., dated 8th August, No. 413 E., Marine, and to inform you in reply that the Madras and South Indian Railways have not—so far as is known—used any English coal for many years.

2. More Bengal coal is required to do the same work as a smaller quantity of English or Welsh coal. I have no information as to the relative economy of Australian coal.

3. The increase of 26,973 tons, alluded to by the Traffic Manager in paragraph 6 of his report, as being largely due to the Madras and South Indian Railways having received a portion of their fuel supply from Bengal, refers to contracts entered into by those two railways with a local firm or firms for the supply of Bengal coal, which it is presumed took the place of an equivalent quantity of Singarini coal or wood fuel.

4. The reason why the coal used by the railways is not shown in statements II, III and IV on page 23 of the report, is that it was not imported by the companies but by contractors. Those statements refer only to goods cleared by the railway storekeepers; but to explain the cause of the increase in imports the Traffic Manager referred to the fact that the two railways were burning Bengal coal.

5. It has not been customary to draw any distinction hitherto between foreign and coasting imports by the railways or Government departments (statements IX and X); but with regard to the railways, stores generally are foreign imports including the items coke, fire bricks, boilers, rails, fish plates, and pot sleepers. Wooden sleepers come from Burma or Karachi, coal of late years from Bengal, and is so included in the summary paragraph 15, page 6, which gives the total of foreign and Bengal coal imported by all parties. Timber imported by the railways is almost exclusively teak logs from Burma.

ORDER—No. 694, Marine, dated 16th August 1898.

The Trustees submit their report on the administration of the Madras Harbour during the year 1897-98.

2. The Board consisted of 10 members, as in the previous year, and held 24 ordinary meetings, and one special meeting to consider the budget. The average attendance of members was 7·3 as against 7·6 in 1896-97. The Chairman was present at all the meetings except one.

3. The following is an abstract of the receipts and charges of the year, as compared with 1896-97, with explanation of the differences:—

Item No.	Head.	1896-97.	1897-98.	Difference + or —.	Explanation.
	Receipts.	RS.	RS.	RS.	
I	Contribution from Port funds.	2,44,688	82,618	— 1,62,070	In 1896-97 a special payment of Rs. 1,00,000 was made in cash, and the value of the dredger *Wenlock* (Rs. 1,00,400) was credited to the Harbour.
II	Harbour dues, &c. ..	4,50,458	4,71,621	+ 21,163	Chiefly caused by increased imports of coal from Calcutta, of rice from coast ports and Burma, and of kerosine oil.
III	Porterage dues ..	1,18,317	1,31,079	+ 12,762	
IV	Interest on Government paper.	16,259	22,989	+ 6,730	
V	Refunds, Construction account.	..	11,405	+ 11,405	No explanation given.
	Total ..	8,29,722	7,19,712	— 1,10,010	
	Charges.				
I	Interest	2,11,472	2,24,065	+ 12,593	Against the last advance received for reconstruction, only one day's interest was paid in 1896-97, while a full year's interest was paid in 1897-98.
II	Repayment of loan ..	1,00,000	1,00,000	..	
III	Refunds ..	2,233	2,124	— 109	
IV	Engine haulage ..	..	9,140	+ 9,140	For expenses occurred in shunting.
V	Fees to Trustees ..	7,410	5,730	— 1,680	Fewer meetings held and no committees.
VI	Chairman's fees ..	4,800	4,800	..	
	Local Consulting Engineer's fees.	..	600	+ 600	
VII	Establishment ..	92,974	1,05,621	+ 12,647	Chiefly due to fee of Rs. 10,428 paid to Sir A. Rendel, which is under correspondence. There was a saving of Rs. 1,348 in exchange compensation allowance, due to higher rates of exchange, and to three foremen having left.
VIII	Contingencies ..	33,074	51,749	+ 18,675	Due principally to an increase of Rs. 19,133 under "Miscellaneous," all expenses for marine surveys, dredger *Wenlock*, and repairs to protective revetment being charged to this head. There was a saving of Rs. 6,057 under Audit fees, all arrears having been paid in the previous year, and an excess of Rs. 3,723 under Law charges due to a suit still *sub judice*.
IX	Petty construction and repairs.	10,184	50,418	+ 40,234	*New works constructed*— RS. Weigh bridge for coal wagons .. 2,211; Extending coal hard .. .. 3,069; 6" pipe along pier for fresh water .. 4,075; Unclimbable fencing .. .. 1,954; Total .. 11,309. *Repairs.* Upkeep of lines, cranes, trucks, buildings, pier, &c. .. .. .. 14,000; Arrears of previous years .. .. 5,067; Boiler repairs hitherto charged to Construction .. .. .. 2,593; Adjustments between Construction and Revenue accounts .. .. 5,040; Total .. 26,700
X	Porterage	1,17,699	1,32,907	+ 15,208	Establishment and beach coolies were greatly increased in numbers owing to increased arrivals of coal and iron and owing to weighments being undertaken by the Board for the first time which has greatly facilitated traffic. There was also an increase of Rs. 2,150 for Custom House coolies to expedite clearance of goods.
XI	Capital account ..	1,94,999	44,380	— 1,50,619	The expenditure has been confined to Rs. 4,895 on moorings. There has also been a loss of Rupees 39,459 by depreciation of Government paper.
	Total ..	7,74,845	7,31,534	— 43,311	

4. It will thus be seen that the receipts fell short of the charges by Rs. 11,822, in spite of the fact that receipts from dues of all kinds exceeded those of the previous year by Rs. 33,925. This result is chiefly due to depreciation of Government paper which will probably soon be recovered, to the payment of the Consulting Engineer's fee which may be refunded, to considerable expenditure in marine surveys, and to some

very useful new works and repairs. The transactions of the year may, however, on the whole, be considered satisfactory, and the harbour be said to be paying its way. It is noticed that porterage dues do not quite meet the corresponding charges.

5. The following statement shows the total tonnage of the port during the past ten years :—

Years.	Imports.	Exports.	Total.
	TONS.	TONS.	TONS.
1888-89	201,597	89,003	290,600
1889-90	246,659	112,525	359,184
1890-91	288,537	103,435	391,972
1891-92	347,401	88,939	436,340
1892-93	277,843	85,938	363,781
1893-94	285,251	98,660	383,911
1894-95	285,276	104,188	389,464
1895-96	330,697	95,074	429,771
1896-97	385,605	102,941	488,546
1897-98	441,926	81,830	523,756

6. It will be seen that there has been a continuous rise in recent years in the grand total of imports and exports, the increase being principally due to the former; exports having remained nearly stationary for some years, and showing a considerable falling off in the year under review. The increase in the import of coal and coke continues. It is largely due to a portion of the fuel supply to the Madras and South Indian Railways being brought from Bengal. The figures given on page 6 of the report are very suggestive of the manner in which indigenous coal is supplanting the foreign article. The amount of kerosine oil imported has also largely increased, both as regards case and bulk oil; the former showing an increase of 126,328 cases, and the latter of 7,126 tons. Piece-goods, twist and rice also show an advance, but there was a decline in gram and peas. There was a falling off in exports, principally under coffee, cotton, ground-nuts, jaggery and tanned skins, the total tonnage exported being the lowest on record up to date, and the total sum collected thereon being only Rs. 61,373. This falling off is ascribed to want of rain and consequent distress and famine.

7. The following statement gives the number and tonnage of vessels which entered and left the port as compared with previous years :—

Description of vessels.	1896-97.		1897-98.	
	Number.	Tons.	Number.	Tons.
Vessels arrived.				
Steam ships, mercantile	662	1,180,664	614	1,236,600
Sailing ships, ,, ...	..	..	1	995
Sailing native crafts	104	10,633	98	11,721
Men-of-war, Government ships and transports	10	25,225	..	..
Total ..	776	1,216,522	713	1,249,316
Vessels left.				
Steam ships, mercantile	660	1,178,823	613	1,232,870
Sailing ships, ,, ...	..	..	1	995
Sailing native crafts	102	10,517	99	12,016
Men-of-war, &c.	10	25,225	..	..
Total ..	772	1,214,565	713	1,245,831

There was a fall in the number of vessels both inwards and outwards, although the tonnage increased.

8. A survey of the harbour and roadstead was made by an officer of the Indian Marine in May and June 1897, and the results as compared with previous surveys have been placed on record. These are briefly given in paragraph 13 of the Chairman's

report. It is expected that the dredger *Wenlock*, which will arrive from Calcutta about the end of the year, will be able to keep the entrance to the harbour free from sand.

9. The Provident funds worked satisfactorily, with great benefit to the employés of the Board.

10. The Biden Home account opened with a balance of Rs. 2,656. The receipts during the year were Rs. 1,472-14-0, and the expenditure Rs. 1,889-4-9, leaving a closing balance of Rs. 2,239-12-0.

11. No outlay was incurred during the year on harbour extension and improvement, the Board not having come to any final decision as to the works to be undertaken.

[Here enter No. 695, Marine, dated 16th August 1898.]

(True Extract.)

A. Kumaresan.

Under Secretary to Government.

To the Chairman, Harbour Trust Board.
" Presidency Port Officer.
" Financial Department.
" Revenue Department.
" Chairman, Chamber of Commerce.
" " Madras Trades Association.
" Secretary to the Port Trust, Bombay.

Exd. T. K. Narayana Aiyangar.

ADMINISTRATION REPORT OF THE TRUSTEES

OF

THE MADRAS HARBOUR

FOR THE OFFICIAL YEAR

1897-98.

PUBLISHED BY AUTHORITY.

MADRAS:
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS.

1898.

ADMINISTRATION REPORT OF THE TRUSTEES

OF

THE MADRAS HARBOUR,

FOR THE OFFICIAL YEAR 1897–98.

The Trustees have the honour to submit their report on the administration of the Madras Harbour Board for the official year 1897–98.

Constitution of the Board.

2. The Board consisted during the period of the following ten members :—

Elected by the Chamber of Commerce.

1. Mr. H. Scott.
2. Mr. C. B. Simpson.
3. Mr. A. J. Yorke.

Elected by the Trades' Association.

4. Mr. J. F. Davies resigned in November 1897, and was succeeded by Mr. R. Harper.

Nominated by Government.

Officials.

5. Mr. Ware Austin, I.C.S., Chairman, retired in April 1897, and was succeeded by Mr. J. N. Atkinson, I.C.S. Mr. J. Thomson, I.C.S., acted from August to October, when Mr. Atkinson returned from leave and resumed the acting appointment, in which he has recently been confirmed.
6. Commander H. A. Street, R.I.M.
7. Mr. F. J. Wilson, A.M.I.C.E.

Non-officials.

8. Mr. Cowasjee Eduljee Panday.
9. Mr. Mirza Mehdy Ispahani.
10. M.R.Ry. M. Abboyi Naidu Garu died on 13th January 1898 and the vacancy was not filled till after the end of the official year.

Meetings held.

3. The Board held 25 regular meetings; and, in February, the usual special meeting under section 37 of the Harbour Trust Act to consider the budget estimate of receipts and charges for the year 1898–99.

The average attendance, exclusive of the various Chairmen who have attended all meetings of the Board, except one, has been 7·3 against 7·6 in 1896–97.

4. The opening balance in the Revenue Account on the 1st April 1897 was as follows :—

		Rs.
Government 3½ per cent. paper *par* value, Rs. 4,93,900 at 101 per cent.	...	4,98,839
Cash in the Bank of Madras	...	3,35,794
Cash in office	...	248
Contingent advance	...	500
Total Cash	...	3,36,542
Total cash and securities	...	8,35,381

exclusive of the standing advance of Rs. 500 with the Traffic Manager, on account of porterage charges for payment of daily cooly labour, and of Rs. 15 postage and receipt stamps with the cashier.

5. Cash receipts have been as follows :—

	Rs.
Contributions from Port Funds	82,618
Landing, shipping, cranage and other dues	4,71,621
Porterage dues	1,31,079
Interest on Government paper	22,989
Total	7,08,307

The corresponding figures in 1896–97 were—

	Rs.
Contribution from Port Funds	2,44,688
Landing, shipping, cranage and other dues	4,50,457
Porterage dues	1,18,317
Interest on Government paper	16,259
Total	8,29,721

The differences between these items are—

	Rs.
Contribution from Port Funds	— 1,62,070
Dues on goods landed and shipped	+ 21,164
Porterage dues	+ 12,762
Interest on Government paper	+ 6,730

The reduction in contribution from Port Funds is due to the fact that in the previous year a special payment of Rs. 1,00,000 was received in cash, and the value of the "Dredger Wenlock" credited at Rs. 1,00,400, total Rs. 2,00,400, in settlement of outstanding balances due to Madras from coast ports.

The increase in harbour dues and porterage dues is, as last year, chiefly caused by increased imports of coal from Calcutta.

6. The closing balance on 31st March 1898 was as follows :—

Government paper (*par* value Rs. 4,65,000) taken at 95½ per cent., the current market rate upon that date, Rs. 4,44,075. This, it will be observed, shows a loss of 5½ per cent. as against the market rate of 101 per cent., the value at the beginning of the financial year, a difference on the closing holdings of Rs. 25,575 ; but the net loss on the transactions in Government paper during the year under review has amounted to Rs. 39,459, and is so shown in the balance sheet ; the difference is accounted for by the variations in the rates of purchase during the period, which have ranged from Rs. 103-12-0 down to Rs. 95-8-0.

The cash in hand on the 31st March 1898 was—

	Rs.
In the Bank of Madras	3,77,941
In office	1,543
Total	3,79,484

The closing balance on the 31st March 1897 and 1898 may be compared as follows :—

	1897. Rs.	1898. Rs.
Government paper—market value	4,98,839	4,44,075
Cash	3,36,542	3,79,484
Total	8,35,381	8,23,559
Balance due by Construction (capital) account	77,805	66,399
Total	9,13,186	8,89,958

7. The statement printed at pages 10 and 11 shows actual receipts of dues from all sources to have been Rs. 6,25,689 against Rs. 5,85,033, an increase for the year of Rs. 40,656, which is satisfactory, especially when owing to the want of rain exports during the past year show a decline of Rs. 15,833, and the total sum collected on exports amounted only to Rs. 61,373.

8. The receipts and charges are compared in detail in the statement printed on pages 8 and 9 from which it will be observed that dues collected on imports have increased, on exports decreased, and that cranage is less by Rs. 8,691. This decrease in cranage is due to smaller imports of heavy railway material. One satisfactory item is an increase in the payment received for fresh water supplied to steamers Rs. 1,284 ; a new 6-inch pipe has been laid along the iron pier, and vessels can now obtain a plentiful supply.

9. The amount of *interest* paid to Government on the outstanding balance of advances made for Harbour construction has increased by Rs. 12,593, because against the last advance received from the Accountant-General for Harbour re-construction only one day's interest was paid in 1896–97, while a full year's interest has been paid in 1897–98.

The balance due to Government on the 31st March 1898 was Rs. 48,79,227 after payment of Rs. 1,00,000 on the 1st April 1897 in reduction of capital debt under the provisions of Section 31, Act II of 1886.

Engine haulage.—The sum of Rs. 9,140 has been paid to the Board's Engineer for expenses incurred in shunting operations performed by the Board's locomotive engines from June 1896 to the end of March 1898. These bills were in arrears from the date abovenamed ; no payment was made in the previous year 1896–97.

Fees to Trustees have been Rs. 1,680 less than in the previous year : owing to the dates so falling that three fewer meetings were held within the period under review, and no committees met as against 5 in 1896–97.

Secretary's salary shows an increase of Rs. 922—*vide* G.O., No. 410, Marine, dated 3rd May 1897.

Correspondence Department shows an increase of Rs. 223 as compared with last year ; but there has been a saving of Rs. 97 on the sanctioned establishment.

Accounts Department.—The increase as compared with last year is Rs. 750, but the actual outlay is Rs. 7,350 against a sanctioned establishment of Rs. 8,310. The saving of Rs. 960 is due to different arrangements having been made during the year, with regard to the account branch of the Engineer's Office, to those contemplated when the establishment was sanctioned.

Cash Department shows an increase compared with last year of Rs. 510 ; but there has been a saving of Rs. 270 on the sanctioned establishment.

Traffic Department—Shore Staff.—Excess over 1896–97 has been Rs. 727, and the saving on the sanctioned establishment Rs. 844.

Preventive Service shows a saving of Rs. 770 as against last year, but of only Rs. 6 as compared with the sanctioned establishment.

Boatmen have cost more by Rs. 99, but there is a saving on estimate sanctioned of Rs. 42.

Tidal Observatory has cost Rs. 60 more than last year, the clerk in charge having been granted an advance in salary of Rs. 5 per mensem on the recommendation of Colonel Hill, R.E., in charge of Tidal and Levelling Operations. The expenditure agrees with the sanctioned amount.

Exchange Compensation Allowance shows a saving of Rs. 1,348, due to higher rates of exchange, and to the three Harbour Works foremen having left the service.

Contributions to Provident fund show an increase of Rs. 567 ; increase due to the charge in the Engineer's establishment for the full year being debited to Revenue account, as against only nine months in the previous year.

Engineer's Establishment shows an increase of Rs. 458 as compared with the previous year, but a saving of Rs. 15,614 on the sanctioned establishment ; this is due to wages being charged direct to Works.

Consulting Engineer's Allowance.—Rs. 10,428 were paid under instructions from the Accountant-General. This item is under correspondence with Government.

Contingencies.—Fees for audit are less by Rs. 6,067, due to arrears having been paid in the previous year to the Examiner, Public Works Accounts, for audit of Construction accounts.

Law Charges show an increase of Rs. 3,723, a suit having been launched against the Board for shortage of coal by the steamer *Graffoe* from England. This case is still *sub judice*.

Stationery and Printing charges have increased by Rs. 681, more printing having become necessary. Stationery is procured from the Government Stationery office.

Advertisement Charges show a small increase of Rs. 241, due to the publication of auditors' reports under section 44, Act II of 1886.

Overtime Fees have increased by Rs. 798. As explained in previous reports, this is controlled by the permission granted by the Collector of Sea Customs for the working of steamers after hours, and upon Sundays and holidays.

Miscellaneous Charges have increased by Rs. 19,113. The cause of this increase was explained in the quarterly report ending 30th June 1897 as being due up till then to special charges in the Engineer's department, *e.g.*: Bonus and passage money to each of the three Harbour Works foremen, coal for Harbour Works, granite chips from Pallavaram quarries, &c., &c., all debited to Revenue, the Construction account being no longer open. Since then this head has been charged with all expenses incurred up to the end of the year for Marine Surveys and charges on account of the dredger Wenlock, also emergent repairs to protective revetment in December 1897.

Petty Construction and Repairs—New Works.—A weighbridge for coal wagons was erected at a cost of Rs. 2,211, and Rs. 3,069 spent on extending the coal yard ; a new 6-inch pipe was laid upon the iron screw pile pier, for supplying fresh water to the shipping, at a cost of Rs. 4,075 ; a new pipe for use in the engineer's yard was erected at a cost of Rs. 625 to supply drinking water to coolies, as directed by the Inspector of Factories, and to water the locomotive engines. Rs. 1,954 has been spent in preparing unclimbable iron fencing for erection, but this has not yet been placed in position, pending settlement of the question of widening the Beach road and admitting the Madras Railway Company's passenger traffic. A semaphore has been erected at the railway crossing by the office of the Board's Engineer to signal the Madras Railway Company's drivers working the coal traffic. This post was erected at the instance of the Consulting Engineer for Railways.

Repairs.—The total charge amounts to Rs. 35,319 being Rs. 27,235 in excess of the previous year. The following items which have hitherto been charged to Construction have, during the period under review, been debited to Revenue : Repairs to locomotive and harbour cranes' boilers, Rs. 2,593. Adjustments made between Construction and Revenue accounts, Rs. 5,040. Bills for work done on account of Revenue from June 1896 to March 1897 were adjusted in arrears to the extent of Rs. 5,067. Repairs to coal yard cost Rs. 452, and general upkeep of lines, cranes, trucks, buildings, iron pier, &c., amounted to Rs. 14,000 in round figures.

Porterage.—The establishment has cost Rs. 12,157 against Rs. 9,462 last year. It was found necessary to add considerably to the staff engaged in the coal yard, the work there having greatly increased, and weighment being undertaken by the Board for the first time, for which purpose a weighbridge was erected and staff engaged to attend to weighment. The whole establishment sanctioned was estimated to cost Rs. 12,402 ; there has therefore been a saving on the estimate of Rs. 245. The weighment of coal upon the Board's weighbridge has greatly facilitated traffic. The Madras Railway now accept the weights taken by the Board, and supply a locomotive engine which is in daily attendance to haul away vehicles when loaded weighed and ready for despatch, one of the Board's locomotives is constantly engaged in shunting the vehicles sent in for coal and other goods.

Coolies, Beach.—This item exceeds the payment made last year by Rs. 9,407. The provision made in the budget estimate was Rs. 42,000, but it was found when the revised estimate was prepared that this sum would be largely exceeded, owing to increased imports of coal and iron. The grant was therefore increased to Rs. 59,300 ; the total expenditure has been Rs. 59,158.

Coolies, Pier, show a small decline of Rs. 630 caused chiefly by inactivity in exports ; the imports have improved as is shown by an excess of Rs. 2,150 paid in connection with goods stored in the Custom House. Coasting cargo and cart-hire also show small advances.

Steam crane charges have risen from Rs. 1,932 to Rs. 2,476 ; this is merely for working the cranes. Two other cranes have been ordered from home.

Claims for Loss and Damage to Cargo.—The amount charged under this head has been Rs. 1,870, but there has been paid in addition the sum of Rs. 1,245 being damages recovered against the Board, through the Small Cause Court, on account of a picture of the Rajah of Bobbili, which fell from the pier crane slings in course of shipment ; and this amount has been debited to Miscellaneous as no porterage was paid upon it.

Other items call for no special comment.

10. On the 6th November 1896 the Trustees submitted to Government proposals for a boat basin in the accretion of sand to the south of the harbour, and in G.O., No. 834, Marine, dated 1st December 1896, Government directed that the Executive Engineer, Buckingham Canal, should prepare plans and estimate in consultation with the Board's Engineer.

11. This plan and estimate, amounting to Rs. 8,73,667, was received with G.O., No. 110, Marine, dated 11th February 1898, together with a note by Mr. F. J. Wilson forwarding an amended estimate for a boat basin amounting to Rs. 10,47,239, and also pointing out that a wet basin or dock to accommodate sea-going ships could be constructed for Rs. 38,21,000, and suggesting that the whole matter should be reconsidered. It has since been referred to the Chamber of Commerce and Trades Association for favour of an expression of opinion by the members of those bodies, but up to the present the Board has been unable to take decided action. The matter is still under enquiry and consideration.

12. The dredger *Wenlock* has been sent to Calcutta, where she remains in charge of the Royal Indian Marine Dockyard authorities, awaiting the arrival from England of the appliances to convert her from a bucket to a pump dredger. It is expected that they will be shipped from Home in July next, which should permit of the dredger being altered and delivered at Madras ready for work about the end of the year.

13. A survey of the harbour and roadstead was made by Lieutenant Beauchamp, R.I.M., in May and June 1897, and in forwarding the result of his survey to the Officer in charge, Marine Survey of Indian, on the 14th September, he reported that, compared with the surveys made by Lieutenant Jarrard, R.N., in 1876 and by Mr. Pogson in 1886, the following are the most noteworthy changes:—" At the centre of the entrance to the harbour, midway between the two break-water lights, and about 3,600 feet from the pier head there is now a depth of 41 feet. At the same spot, before the break-water was begun there was 44 feet. In 1886 by Mr. Pogson there was 47 feet, or 3 feet more than before the break-water was built, and 6 feet more than there is now. In the north-east corner, the harbour seems to have shoaled about 3 feet since the break-water was begun, and it all seems to have taken place since Mr. Pogson's survey of 1886. In the

south-east corner it seems to be shoaler by about a foot than it was in 1876, and shoaler by about 4 feet than in 1886. I should imagine, however, that the depth in certain parts of the harbour may vary slightly at different times of the year. But I have no information of this. The coast line inside the harbour has advanced considerably, and taking it at the pier it can be said to have advanced 350 feet since 1876, though of this amount only about 50 feet in the last eleven years. The greatest change of all has taken place outside the break-water to the southward. The point where the high water line there meets the break-water has advanced about 750 feet since 1886, and probably more than 1,800 feet since the harbour works were begun. The shoal inside the harbour along the south break-water has entirely arisen since 1886. All to the northward and all outside the 7 fathom contour line to the eastward and south-eastward is much the same as ever. In fact there is a striking similarity in the contour lines, particularly that of the 8 fathom contour east of the south break-water light. There are also a couple of patches of 42 feet just inside the harbour entrance, which is the same depth of water as there was at that spot before the break-waters were built, and the central area of the harbour also appears exactly the same."

Upon this Mr. F. J. Wilson, the Board's Local Consulting Engineer, wrote a note appended hereto, dated 26th October 1897, which, together with a copy of Lieutenant Beauchamp's survey has been forwarded to the Home Government for the information of Sir Alexander Rendel.

The position appears to be that no apprehension need be felt that any sudden changes will take place in the depth of water in and to seaward of the harbour, and more especially at the entrance, and that dredging as recommended by Sir Alexander Rendel, will prove all that is needed to keep the entrance open, should shoaling occur to any extent in the future.

14. The Traffic Manager's report shows collections of harbour dues Rs. 6,02,699 as against Rs. 5,68,774 in the preceding year, an increase of Rs. 33,925, and the net increase in tonnage of cargo has been 35,210 tons; but while there has been an increase in imports, the exports have declined. Details comparing the past eleven years are appended to the Traffic Manager's report.

15. The tonnage of coal imported compares with the two previous years as follows:—

—	1895–96.	1896–97.	1897–98.	Difference.
	TONS.	TONS.	TONS.	TONS.
Foreign Ports	101,025	69,246	35,771	— 33,475
Bengal	30,596	79,361	137,660	+ 58,299
Total ..	131,621	148,607	173,431	+ 24,824

From the above it will be observed that Bengal coal has still further taken the place of English and Welsh coal and that the imports have again increased.

In view of the steady increase in the quantity of coal landed, the Board granted a reduction of 4 annas porterage dues, as a tentative measure for the year 1898–99, as it is considered of importance to reduce the charges upon this article, which is of comparatively small value per ton. Government, however, referred the matter back to the Board for reconsideration, as all surplus Port Funds will be absorbed for the next few years in special lighthouse expenditure, and a sum of Rs. 90,000, which was expected to be transferred to the Trust, will be so utilised. Under these circumstances, the Board has reluctantly had to forego the reduction in dues upon coal.

16. Imports generally have risen in quantity and full details are given in the statements appended to the Traffic Manager's report. Kerosine oil shows an increase of 126,328 cases and 7,126 tons of bulk oil. Piece-goods and twist show an advance of 8,069 bales and cases. Gram and peas have declined by 119,684 bags, but the import of rice has risen by 248,049, most of which excess came from Burmah.

Exports are the lowest on record up to date, coffee—5,242 bags, cotton—29,255 bales, ground nuts—42,375 bags, jaggery—190,555 bags, tanned hides + 4,751 bales, tanned skins—1,885 bales.

17. The Porterage Department has continued to work satisfactorily. The staff of coolies daily employed in the custom house yards has, during the year, been considerably augmented, and the clearance of goods has thereby been expedited. The extra cost has been small compared with the advantages derived by importers.

18. *Provident Fund.*—The opening balance in this account was Rs. 9,754 cash and Rs. 73,500 Government, 3½ per cent. pro-notes taken at 101, Rs. 74,235, which have since declined in value to 95½ per cent. on the 31st March 1898, at which date investments amounted to Rs. 75,000, 3½ per cent. par value, Rs. 71,625 market value. The difference in the two rates shows a net loss of Rs. 3,952 during the year. The cash in hand on the 31st March 1898 amounted to Rs. 6,837. *Receipts* during the year including the trustees' contribution have aggregated Rs. 14,148 and *charges* have amounted to Rs. 18,216, of which amount Rs. 14,998 was paid in the Engineer's Department, and represented principally the amounts at credit of three foremen who were sent Home during the course of the year, their services being no longer required.

The fund is in a healthy condition.

19. *Coolies' Provident Fund* is in a very satisfactory state. The opening balance was in cash, Rs. 551 and in Government securities Rs. 3,000 par value, of which Rs. 1,500 were 3½ per cent. valued at 101 per cent. Rs. 1,515, and Rs. 1,500 of 3 per cent. paper at 96 per cent. Rs. 1,440. The closing balance on the 31st March 1898 was in cash Rs. 297 and in Government securities Rs. 5,000 par value, of which Rs. 1,500, 3½ per cent. are taken at 95½ per cent., Rs. 1,432, and Rs. 3,500, 3 per cent. paper at 89 per cent. Rs. 3,115. The net depreciation in securities has amounted to Rs. 258.

The coolies have themselves inquired into all cases of claims against this fund and the amounts recommended by them for disbursement have very closely approximated to the corresponding items last year. These are as follows:—

	1896–97.	1897–98.
	RS.	RS.
Pensions	178	186
Allowances to wounded coolies while in hospital	331	349
Marriages	507	534
Births	158	129
Deaths	314	228
Total ...	1,488	1,426

This approximates very closely to the deductions from the coolies' own wages which amounted to Rs. 1,452. The net result is therefore that the Board's contribution has been invested in full in Government paper.

20. The report of the Acting Deputy Port Conservator, which is appended, gives full information regarding that department, which is in a state of high efficiency.

21. *Capital Account.*—Appended hereto, page 18, is (i) a statement of funds advanced by Government, amounts refunded, and balance due on 31st March 1898, Rs. 48,79,227, to which is annexed a copy of letter from the Accountant-General, No. 2735, dated 4th September 1897, returning that statement duly verified; (ii) statement showing the sanctioned estimates from 1874–75 up to 1895–96 and *per contra* the expenditure upon harbour construction to 1884 and since 1886 upon harbour re-construction under the Board.

The savings shown in the item Rs. 49,173 will be adjusted in accounts audited by the Examiner of Public Works Accounts subsequent to the date of this statement, and adjustment will also be made in respect of tools and plant, which are herein only shown at the estimated amount to be recovered; actual adjustments and transfers to a new capital account, in respect of harbour improvements, have since been made, and the statement of capital expenditure on harbour construction will be adjusted accordingly in next year's report.

MADRAS,
24th June 1898.

J. N. ATKINSON,
Chairman.
C. PINSENT,
Secretary.

The following statement compares in detail the Receipts and Charges of the past year with 1896-97.

Items.	Actuals of 1896-97.	Actuals of 1897-98.	Plus or minus.
	Rs.	Rs.	Rs.
Revenue Account.			
Opening balance	7,80,504	8,35,381	..
Receipts.			
I. Contributions from Port Funds	2,44,688	82,618	— 1,62,070
II. Beach Imports: dues under Section 45	2,03,206	2,41,926	+ 38,720
Pier do. do.	85,989	89,769	+ 3,780
Beach Exports do.	27,492	22,893	— 4,599
Pier do. do.	49,714	38,480	— 11,234
Wharfage do.	6,095	7,141	+ 1,046
Cranage do.	56,998	48,307	— 8,691
Storage do.	841	1,235	+ 394
Demurrage do.	286	409	+ 123
Dues for entry of vehicles do.	12,618	12,542	— 76
Provisions:—Dues on do.	680	586	— 94
Rent of properties	823	639	— 184
Water: Charge for—delivered at pier head	5,532	6,816	+ 1,284
Penalties under Section 84	33	16	— 17
Sundries	151	862	+ 711
III. Porterage under Section 45—			
Beach	74,970	83,440	+ 8,470
Pier	43,334	47,614	+ 4,280
Miscellaneous	13	25	+ 12
IV. Interest on Government of India 3½ per cent. Promissory Notes ..	16,259	22,989	+ 6,730
V. Refunds from construction account	..	11,405	+ 11,405
Total, Receipts ..	8,29,722	7,19,712	..
Total ..	16,10,226	15,55,093	..
Charges.			
I. Interest (under Section 30)	2,11,472	2,24,065	+ 12,593
II. Repayment of loan for construction of Harbour under Section 31 ..	1,00,000	1,00,000	..
III. Refunds	2,233	2,124	— 109
IV. Engine Haulage	..	9,140	+ 9,140
V. Fees to Trustees	7,410	5,730	— 1,680
VI. Chairman's Allowance	4,800	4,800	..
Local Consulting Engineer's Allowance	..	600	+ 600
VII. Establishment—			
1. Secretary's salary	10,878	11,800	+ 922
2. Correspondence Department	3,748	3,971	+ 223
3. Accounts Department	6,600	7,350	+ 750
4. Cash ,, ...	5,148	5,658	+ 510
5. Traffic ,, (Shore Staff)	23,497	24,224	+ 727
6. Preventive Service	8,924	8,154	— 770
7. Do. boatmen	1,227	1,326	+ 99
8. Tidal Observatory	415	475	+ 60
9. Exchange Compensation Allowance	4,567	3,219	— 1,348
10. Contribution to Government for Pensions	767	788	+ 21
11. Do. to Provident Fund	4,102	4,669	+ 567
12. Engineer's Department	23,101	23,559	+ 458
Consulting Engineer's Allowance	..	10,428	+ 10,428
VIII. Contingencies—			
(*a*) Subject to Regular Audit—			
Postage	48	79	+ 31
Receipt Stamps	236	253	+ 17
Telegrams	18	34	+ 16
Furniture	141	214	+ 73
Fees for Audit	11,867	5,800	— 6,067
Law Charges	50	3,773	+ 3,723
Stationery and Printing	3,637	4,318	+ 681
Advertisement Charges	85	326	+ 241
Uniform for Preventive Service, &c.	1,349	1,674	+ 325
(*b*) Admissible without detailed Audit—			
Overtime fees to Establishment	4,057	4,855	+ 798
Do. to Preventive Service and Boatmen ..	2,853	2,577	— 276
Miscellaneous	8,733	27,846	+ 19,113
IX. Petty Construction and Repairs—			
New Works	1,880	14,568	+ 12,688
Repairs	8,084	35,319	+ 27,235
Tools and Plant	220	531	+ 311
X. Porterage—			
1. Establishment	9,462	12,157	+ 2,695
2. Coolies, beach	49,751	59,158	+ 9,407
3. Do. pier	21,152	20,522	— 630
4. Do. Custom House	13,474	15,624	+ 2,150
5. Coasting cargo	1,483	1,889	+ 406
6. Cart Hire	740	841	+ 101
7. Steam Crane Charges	1,932	2,476	+ 544
8. Refunds	6,228	6,610	+ 382
9. Claims for Losses and damage of Cargo	1,660	1,870	+ 210
10. Contribution to Government for Pensions	17	23	+ 6

The following statement compares in detail the Receipts and Charges, &c.—*cont.*

Items.	Actuals of 1896-97.	Actuals of 1897-98.	Plus or minus.
	Rs.	Rs.	Rs.
Charges—cont.			
X. Porterage—*cont.*	537	617	+ 80
11. Contribution to Provident Fund	1,275	1,452	+ 177
12. Provident Fund Deductions from Coolies' wages	1,275	1,452	+ 177
13. Do. Contributions by the Trust	..	..	..
(*a*) Contingencies subject to Regular Audit—			
Postage	..	..	..
Receipt Stamps	14	14	..
Furniture	1,474	1,475	+ 1
Tarpaulins	..	53	+ 53
Law Charges	685	1,062	+ 377
Stationery and Printing	1,323	1,627	+ 304
Lighting Pier and Yards			
(*b*) Contingencies admissible without Detailed Audit—	2,090	2,745	+ 655
Overtime fees to establishment	3,127	1,240	— 1,887
Miscellaneous			
XI. Capital Account—	..	..	..
Major Works—			
(*a*) Harbour Improvements	23,558	1	— 23,567
(*b*) Moorings	13,963	4,895	— 9,068
(*c*) Other New Works	..	..	..
(*d*) Other debit transactions—	..	25	— 18,543
(i) Acquisition of Land	18,568	..	— 10,301
(ii) Protective Works	10,301	..	— 1,00,400
(*e*) Tools and Plant	1,00,400	..	..
(*f*) Contingencies	..	..	— 11,405
Advances to Construction Account	11,405	..	+ 22,665
Net depreciation in value of Government 3½ per cent. paper	16,794	39,459	
Total, Expenditure ..	7,74,845	7,31,534	..
Closing Balance ..	8,35,381	8,23,559	..
Total ..	16,10,226	15,55,093	..

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

Statement of Receipts and Charges from 1st April 1897 to 31st March 1898.

		Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance—				
Government securities (par value Rs. 4,93,900)	..		..	4,98,839 0 0 @ 101 %
1. Cash in the Bank of Madras	.. ..	3,35,794 2 0		
2. General cash in office	.. ..	247 11 5		
3. Advance for contingencies	.. ..	500 0 0		
4. Do. for Engineer's Department	..	..		
			3,36,541 13 5	
Receipts.				
I. Contributions from Port Funds	.. ..	..	82,617 12 4	
II. Beach imports: dues under section 45 (*a*), I (i), (ii), (iii).		2,41,926 6 0		
Pier do. do. do.	..	89,768 8 0		
Beach exports: do. do.	..	22,893 5 0		
Pier do. do. do.	..	38,479 10 1		
Wharfage: do. II	..	7,141 2 1		
Cranage: do. III	..	48,307 0 2		
Storage: do. IV	..	1,234 11 9		
Demurrage: do. V	..	408 8 3		
Dues for entry of vehicles under section 45 (*c*), VI	..	12,542 7 9		
Provisions: dues on, under section 45 (*a*), I (i).		586 2 0		
Rent of properties	..	639 5 0		
Water: charge for, delivered at pier head	..	6,816 4 0		
Penalties under section 84 ..	..	15 8 0		
Sundries	..	861 12 8		
			4,71,620 10 9	
III. Porterage under section 45 (*a*), I (iv)—				
Beach	..	83,439 11 7		
Pier	..	47,614 1 5		
Miscellaneous	..	24 14 7		
			1,31,078 11 7	
IV. Interest on Government of India 3½ per cent. promissory notes	..	..	22,989 4 9	
Amount transferred from Construction account to Revenue in payment of amount advanced for Construction during 1896-97 ..	..	..	11,404 15 6	
Cost of Government securities purchased	..	..	..	2,94,835 2 0
Proceeds of Government securities sold	..	..	3,10,140 5 8	..
Total	..	..	13,66,393 10 0	7,93,674 2 0
Charges.				
I. Interest (under section 30)	..	..	2,24,065 2 11	
II. Repayment of loan for construction of harbour under section 31	..	..	1,00,000 0 0	
III. Refunds		2,123 10 10		
IV. Engine haulage		9,140 7 1		
V. Fees to Trustees		5,750 0 0		
VI. Chairman's allowance		4,800 0 0		
Local Consulting Engineer's allowance ..		600 0 0		
			22,394 1 11	
VII. Establishment—				
1. Secretary's salary		11,800 0 0		
2. Correspondence Department		3,971 5 6		
3. Accounts Department		7,350 0 0		
4. Cash Department		5,558 2 9		
5. Traffic Department (Shore staff) ..		24,223 10 11		
6. Preventive service		8,154 1 11		
7. Do. boatmen		1,326 4 6		
8. Tidal Observatory		475 0 0		
9. Exchange compensation allowance ..		3,219 3 4		
10. Contribution to Government for pensions.		783 0 3		
11. Contribution to Provident Fund ..		4,669 0 9		
12. Engineer's Department		23,558 13 2		
Consulting Engineer's allowance ..		10,427 9 5		
			1,05,621 4 0	
VIII. Contingencies—				
(*a*) Subject to regular audit—				
Postage		79 6 10		
Receipt stamps		253 4 0		
Telegrams		33 15 0		
Furniture		213 12 0		
Fees for audit		5,800 0 0		
Law charges		3,772 13 6		
Stationery and Printing		4,318 4 5		
Advertisement charges		325 14 0		
Uniform for Preventive service, &c. ..		1,673 12 0		
			16,471 1 9	
(*b*) Admissible without detailed audit—				
Overtime fees to establishment ..		4,854 8 8		
Do. to Preventive service and boatmen ..		2,577 1 11		
Miscellaneous		27,845 15 9		
			35,277 10 4	
IX. Petty construction and repairs—				
New works		14,567 11 3		
Repairs		35,319 1 3		
Tools and plant		531 7 4		
			50,418 3 10	
Carried over ..		..	5,54,247 8 9	..

		Rs. A. P.	Rs. A. P.	Rs. A. P.
Brought forward ..		..	5,54,247 8 9	..
X. Porterage—				
1. Establishment		12,156 10 11		
2. Coolies, Beach		59,158 1 7		
3. Do. Pier		20,522 4 2		
4. Do. Custom-house		15,623 12 11		
5. Coasting cargo		1,889 3 8		
6. Cart-hire		841 1 3		
7. Steam crane charges		2,476 6 3		
8. Refunds		6,6 0 6 7		
9. Claims for losses and damage of cargo ..		1,870 7 4		
10. Contribution to Government for pensions		22 12 8		
11. Contribution to Provident Fund ..		617 2 5		
12. Provident Fund deductions from coolies' wages ..		1,451 8 4		
13. Do. contributions by the Trust		1,451 8 4		
			1,24,691 6 5	
(*a*) Contingencies, subject to regular audit—		..		
Postage		13 13 0		
Receipt stamps		1,474 14 8		
Furniture		52 8 0		
Tarpaulins		1,061 11 4		
Law charges		1,627 6 9		
Stationery and Printing			4,230 5 9	
Lighting pier and yards				
(*b*) Contingencies admissible without detailed audit—		2,744 10 6		
Overtime fees to establishment ..		1,239 12 4		
Miscellaneous			3,984 6 10	
XI. Capital account—				
Major works—		..		
(*a*) Harbour Improvements		1 0 6		
(*b*) Moorings		4,894 13 6		
(*c*) Other new works				
(*d*) Other debit transactions—		24 10 8		
(i) Acquisition of land		—0 0 5		
(ii) Protective works		..		
(*e*) Tools and plant		..	4,920 8 3	
(*f*) Contingencies			2,94,835 2 0	..
Government securities purchased (Rs. 2,96,100)		..	..	3,10,140 5 8
Government securities sold Rs. 3,25,000 ..		..	..	39,458 12 4
Net depreciation in Government paper ..		..	..	
Total Expenditure ..		..	9,86,909 6 0	3,49,599 2 0
Closing balance on the 31st March 1898—				
Government securities (par value Rs. 4,65,000) at 95½ per cent. ..		..	..	4,44,075 0 0
Do. purchased (par value Rs.)		3,77,940 13 11	..	..
Cash in the Bank of Madras		1,043 6 1		
General cash in office		500 0 0		
Advance for contingencies		..	..	..
Do for Engineers' Department ..		..	3,79,484 4 0	..
Total ..		..	13,66,393 10 0	7,93,674 2 0

N.B.—These balances exclude Rs. 500 with the Traffic Manager for meeting daily Porterage charges and Rs. 15 with the Cashier for meeting charges on account of Postage and of Receipt stamps.

(Signed) H. E. HOPE-ROSS,
Chief Accountant.

BANK OF MADRAS.

Certified that the balance standing in the Bank's books on 31st March 1898 at credit of Chairman, Madras Harbour Trust, for the time being *Revenue Account* amounted to Rupees 3,81,038-8-11 (three lakhs eighty-one thousand and thirty eight, annas eight and pies eleven).

(Signed) J. A. MACKENZIE,
for Accountant.

MADRAS,
20th June 1898.

Memorandum.

							Rs. A. P.	Rs. A. P.
Cash in the Bank of Madras								3,81,038 8 11
Deduct—							Rs. A. P.	
Cheque No.	868/136	cashed	23rd May 1898			... ...	29 2 6	
,, ,,	1072	,,	28th April	,,		... ...	1,004 14 6	
,, ,,	1115	,,	18th ,,	,,		... ...	928 9 6	
,, ,,	1151	,,	20th ,,	,,		... ...	159 11 3	
,, ,,	1155	,,	1st ,,	,,		... ...	121 2 1	
,, ,,	1156	,,	1st ,,	,,		... ...	734 7 3	
,, ,,	1157	,,	1st ,,	,,		... ...	119 11 11	
,, ,,								3,097 11 0
Balance as per cash book ...								3,77,940 13 11

MADRAS HARBOUR TRUST DEPOSIT ACCOUNT.

STATEMENT of Receipts and Charges from 1st April 1897 to 31st March 1898.

	Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance.			
Government securities par value	..	11,300 0 0	
Cash in the Bank of Madras	..	900 0 0	
Cash in the Post office Savings Bank	..	500 0 0	
			12,700 0 0
Receipts.			
Deposit in Government securities par value	..	500 0 0	
Do. in cash	..	19,106 7 5	
Interest realised on Government securities	..	392 7 6	
			19,998 14 11
Total ..	..	..	32,698 14 11
Charges.			
Refund of deposits in Government securities	..	..	
Do. in cash	..	3,420 7 2	
Interest paid to depositors	..	392 7 6	
Amount credited to revenue on account of cash deposits for Harbour Dues, &c.	..	15,436 0 3	
			19,248 14 11
Closing balance.			
Government securities deposited par value—			
Messrs. Arbuthnot & Co.	1,000 0 0		
,, Binny & Co.	1,000 0 0		
,, Walker & Co.	1,000 0 0		
,, Dymes & Co.	1,000 0 0		
South Indian Export Company (Limited)	1,000 0 0		
Messrs. McDowell & Co.	1,000 0 0		
,, G. W. Deane & Co.	500 0 0		
,, Gordon Woodroffe & Co.	500 0 0		
,, Parry & Co.	500 0 0		
,, Wilson & Co.	500 0 0		
,, Spencer & Co.	500 0 0		
,, Scholank Engel & Co.	500 0 0		
,, Oakes & Co.	300 0 0		
		9,300 0 0	
Government Securities deposited by Contractors.			
V. Namalwar Chetty	500 0 0		
P. Parthasarathy Naidu	500 0 0		
		1,000 0 0	
Government Securities deposited by Officials.			
C. Vencatachellam Chetty, Cashier	1,000 0 0		
A. Vencatakristna Pillay, Shroff, Porterage Department ..	500 0 0		
		1,500 0 0	
			11,800 0 0
Cash deposited by Officials.			
S. Appathoray Moodelly, Assistant Cashier (in the Post office Savings Bank)	500 0 0		
		500 0 0	
Cash deposited.			
Messrs. W. J. Eales & Co	250 0 0		
,, P. Mooroogasam & Co.	250 0 0		
,, Alfred Young & Co.	250 0 0		
,, Volkart Brothers	200 0 0		
,, Carl Simon Sochne	200 0 0		
		1,150 0 0	
			1,650 0 0
Total ..	..	..	32,698 14 11

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

Memorandum.

	Rs. A. P.
Cash in the Bank of Madras	1,153 9 4
Deduct—	
Cheque uncashed, No. 29 of 1896–97	3 9 4
Balance as per cash book ...	1,150 0 0

COOLIES PROVIDENT FUND.

STATEMENT of Receipts and Charges from 1st April 1897 to 31st March 1898.

	Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance.			
Government securities (par 3½ per cent., Rs. 1,500) at 101 per cent.	..	..	1,515 0 0
Government securities (par 3 per cent., Rs. 1,500) at 96 per cent.	..	..	1,440 0 0
Cash in the Bank of Madras	..	551 3 3	..
Receipts.			
Deduction from coolies' wages	1,451 8 4		
Contribution by the trust	1,451 8 4		
Amount of undisbursed wages credited under Chairman's Order No. 2605, dated 9th January 1893	16 6 8		
Interest on Government investment	101 13 3		
		3,021 4 7	
Cost of Government securities purchased	..	..	1,850 0 0
Total ..	..	3,572 7 10	4,805 0 0
Charges.			
Pensions to widows of coolies who died from effect of accidents	84 0 0		
Pensions to coolies permanently invalided	102 0 0		
Allowance to wounded coolies while under treatment in the hospital at 4 annas per diem	348 12 0		
Allowance for 69 marriages amongst the families of coolies.	534 0 0		
Do. for 61 births amongst the families of coolies ..	129 0 0		
Do. for 73 deaths do. do. ..	228 0 0		
		1,425 12 0	
Government securities purchased (par 3 per cent., Rs. 2,000).	..	1,850 0 0	..
Net depreciation in Government paper	..	..	257 8 0
Closing balance.			
Government securities (par 3½ per cent., Rs. 1,500) at 95½ per cent.	..	..	1,432 8 0
Government securities (par 3 per cent., Rs. 3,500) at 89 per cent.	..	..	3,115 0 0
Cash in the Bank of Madras	..	296 11 10	..
Total ..	..	3,572 7 10	4,805 0 0

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

BANK OF MADRAS.

Certified that the balance standing in the Bank's books on 31st March 1898 at credit of Chairman, Madras Harbour Trust *Cooly Provident Fund Account* amounted to Rs. 296–11–10 (two hundred and ninety-six rupees eleven annas and ten pies).

(Signed) J. A. MACKENZIE,
for Accountant.

20th June 1898.

PROVIDENT FUND.

STATEMENT of Receipts and Charges from 1st April 1897 to 31st March 1898.

	Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance—			
Government securities (par value Rs. 73,500) at 101 per cent.			74,235 0 0
Cash in the Bank of Madras	9,754 7 10		
Cash in office			
		9,754 7 10	
Receipts.			
Revenue Department's collection	3,565 2 1		
Do. trust contribution	3,565 2 1		
Porterage Department collections	617 2 5		
Do. trust contribution	617 2 5		
Harbour works collections	1,103 14 8		
Do. trust contribution	1,103 14 8		
Do. Master's collections	1,251 4 7		
Do. trust contribution	1,251 4 7		
Instalments of refund of loan granted to employés	1,073 0 0		
Miscellaneous			
		14,147 15 6	
Interest realised on Government promissory notes		2,492 10 0	
Cost of Government securities purchased			4,872 8 0
Proceeds of Government securities sold		3,530 11 3	
Total		29,925 12 7	79,107 8 0
Charges.			
Paid to employés who have left trust service subscriptions and trust contribution—			
Revenue Department	948 12 4		
Porterage do.	500 0 7		
Harbour works	14,997 11 2		
Do. Master's Department	7 9 8		
Paid to employés their own subscriptions only—			
Revenue Department	135 13 5		
Porterage do.	32 4 10		
Harbour works	18 2 8		
Do. Master's Department			
Premia on Policies of Life Assurance	1,092 8 0		
Amount of loans granted to employés	483 0 0		
		18,215 14 8	
Government securities purchased (Rs. 5,000)		4,872 8 0	
Do. sold (Rs. 3,500)			3,530 11 3
Net depreciation in Government paper			3,951 12 9
Closing balance—			
Government securities (par value Rs. 75,000) at 95½ per cent.			71,625 0 0
Cash in the Bank of Madras	6,837 5 11		
Cash in office			
		6,837 5 11	
Total		29,925 12 7	79,107 8 0

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

BANK OF MADRAS.

Certified that the balance standing in the Bank's Books on 31st March 1898 at credit of Chairman, Madras Harbour Trust, for the time being "Provident Fund Account," amounted to Rs. 6,837–5–11 (six thousand eight hundred and thirty-seven rupees five annas eleven pies).

MADRAS,
20th June 1898.

(Signed) J. A. MACKENZIE,
for Accountant.

BIDEN HOME.

STATEMENT of Receipts and Charges from 1st April 1897 to 31st March 1898.

	Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance—			
Government securities	1,000 0 0		
Cash in the Bank of Madras	1,606 2 9		
Cash with the Superintendent	50 0 0		
		2,656 2 9	
Receipts.			
Interest on investments	34 14 8		
Rent from Harbour Masters	1,380 0 0		
Profits realized on boarding seamen	57 15 4		
Miscellaneous			
		1,472 14 0	
			4,129 0 9
Charges.			
Establishment	552 8 0		
Exchange compensation allowance	27 10 3		
Contingencies	62 15 6		
Municipal tax	366 0 0		
Repairs	880 3 0		
		1,889 4 9	
Closing balance—			
Government securities	1,000 0 0		
Cash in the Bank of Madras	1,189 12 0		
Cash with the Superintendent	50 0 0		
		2,239 12 0	
			4,129 0 9

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

BANK OF MADRAS.

Certified that the balance standing in the Bank's Books on 31st March 1898 at credit of Chairman, Madras Harbour Trust, for the time being "*Biden Home Account*" amounted to Rupees 1,189–12–0 (one thousand one hundred and eighty-nine and annas twelve only).

MADRAS,
20th June 1898.

(Signed) J. A. MACKENZIE,
for Accountant.

PILOTAGE Fund Receipts.

	Pilotage fees.	Stern-fast Boat hire.	Fees for shifting berths.	Harbour Master fees.	Miscellaneous.	Total.
	1896–97.					
	Rs.	Rs.	Rs.	Rs.	Rs. A. P.	Rs. A. P.
April	2,104	207	..	770	..	3,081 0 0
May	1,854	183	..	590	..	2,627 0 0
June	1,651	168	..	650	..	2,469 0 0
July	2,207	213	..	800	..	3,220 0 0
August	1,435	141	..	550	80 15 0	2,206 15 0
September	2,286	234	..	830	..	3,350 0 0
October	1,719	192	..	670	..	2,581 0 0
November	1,247	114	..	490	..	1,851 0 0
December	1,471	174	..	720	..	2,365 0 0
January	2,312	246	..	960	30 0 0	3,548 0 0
February	1,899	186	..	580	..	2,665 0 0
March	1,725	183	..	600	..	2,508 0 0
Total	21,910	2,241	..	8,210	110 15 0	32,471 15 0
	1897–98.					
April	1,448	159	..	550	90 11 0	2,247 11 0
May	2,018	204	..	870	..	3,092 0 0
June	1,355	144	..	540	91 9 10	2,040 9 10
July	1,529	147	..	690	..	2,366 0 0
August	1,613	159	..	590	..	2,362 0 0
September	1,466	150	..	630	3 5 4	2,249 5 4
October	1,744	186	..	530	3 4 6	2,463 4 6
November	1,802	177	..	710	..	2,689 0 0
December	1,219	123	..	480	..	1,822 0 0
January	2,042	198	..	740	..	2,980 0 0
February	1,277	123	..	460	..	1,860 0 0
March	1,851	180	..	700	..	2,731 0 0
Total	19,364	1,950	..	7,490	98 14 8	28,902 14 8

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

THE following statement compares the Budget Estimate for 1897-98 and the Revised Estimate with Actuals.

Items.	Sanctioned budget estimate for 1897-98.	Sanctioned revised budget estimate for 1897-98.	Actuals of 1897-98.	Plus or minus.
Revenue Account.	RS.	RS.	RS.	RS.
Opening balance	7,69,330	8,21,783	8,35,381	..
Receipts.				
I. Contributions from Port Funds	2,33,400	82,618	82,618	..
II. Beach Imports : dues under Section 45 ..	1,80,000	2,20,000	2,41,926	+ 21,926
Pier Imports : do. do. ..	70,000	80,000	89,769	+ 9,769
Beach Exports : do. do. ..	30,000	25,000	22,893	— 2,107
Pier Exports : do. do. ..	45,000	40,000	38,480	— 1,520
Wharfage do. do. ..	6,000	7,000	7,141	+ 141
Cranage do. do. ..	40,000	45,000	48,307	+ 3,307
Storage do. do. ..	800	1,000	1,235	+ 235
Demurrage do. do. ..	200	500	409	— 91
Dues for entry of vehicles under Section 45 ..	10,000	12,000	12,542	+ 542
Provisions :—Dues on— do. ..	500	600	586	— 14
Rent of properties	800	600	639	+ 39
Water :—Charge for—delivered at pier head ..	5,000	6,000	6,816	+ 816
Penalties under Section 84	50	50	16	— 34
Sundries	100	800	862	+ 62
III. Porterage under Section 45—				
Beach	65,000	82,000	83,440	+ 1,440
Pier	41,000	45,000	47,614	+ 2,614
Miscellaneous	100	100	25	— 75
IV. Interest on Government of India 3½ per cent. Pro-Notes	14,000	23,500	22,989	— 511
V. Refunds from construction account	..	..	11,405	+ 11,405
Total, Receipts ..	7,41,950	6,71,768	7,19,712	..
Total ..	15,11,280	14,93,551	15,55,093	..
Charges.				
I. Interest (under Section 30)	2,24,066	2,24,065	2,24,065	..
II. Repayment of loan for construction of Harbour under Section 31	1,00,000	1,00,000	1,00,000	..
III. Refunds	1,500	2,124	2,124	..
IV. Engine Haulage	2,000	9,140	9,140	..
V Fees to Trustees	7,000	5,730	5,730	..
VI. Chairman's Allowance	4,800	4,800	4,800	..
Local Consulting Engineer's Allowance ..	..	600	600	..
VII. Establishment—				
1. Secretary's salary	9,600	11,800	11,800	..
2. Correspondence Department	4,068	3,971	3,971	..
3. Accounts Department	8,310	7,350	7,350	..
4. Cash do.	5,928	5,658	5,658	..
5. Traffic do. (Shore Staff) ..	25,068	24,224	24,224	..
6. Preventive Service	8,160	8,154	8,154	..
7. Do. Boatmen	1,368	1,326	1,326	..
8. Tidal Observatory	480	475	475	..
9. Exchange Compensation Allowance ..	4,500	3,220	3,219	— 1
10. Contribution to Government for Pensions ..	812	788	788	..
11. Do. to Provident Fund	5,000	4,669	4,669	..
12. Engineer's Department	39,173	23,559	23,559	..
Consulting Engineer's Allowance	..	10,428	10,428	..
VIII. Contingencies—				
(*a*) Subject to Regular Audit—				
Postage	100	79	79	..
Receipt Stamps	200	250	253	+ 3
Telegrams	50	33	34	+ 1
Furniture	500	200	214	+ 14
Fees for Audit	3,400	5,800	5,800	..
Law Charges	500	4,000	3,773	— 227
Stationery and Printing	3,000	4,500	4,318	— 182
Advertisement Charges	500	326	326	..
Uniform for Preventive Service, &c. ..	1,500	1,700	1,674	— 26
(*b*) Admissible without detailed Audit—				
Overtime Fees to Establishment ..	4,000	5,000	4,855	— 145
Do. Preventive Service and Boatmen	3,000	2,577	2,577	..
Miscellaneous	6,000	28,000	27,846	— 154

The following statement compares the Budget Estimate for 1897-98 and the Revised Estimate with Actuals—*cont.*

Items.	Sanctioned budget estimate for 1897-98.	Sanctioned revised budget estimate for 1897-98.	Actuals of 1897-98.	Plus or minus.
Charges—cont.	RS.	RS.	RS.	RS.
IX. Petty Construction and Repairs—				
New Works	5,000	14,568	14,568	..
Repairs	10,000	36,000	35,319	— 681
Tools and Plant	1,000	531	531	..
X. Porterage—				
1. Establishment	12,402	12,157	12,157	..
2. Coolies, Beach	42,000	59,300	59,158	— 142
3. Do. Pier	18,000	20,550	20,522	— 28
4. Do. Custom House	12,000	15,650	15,624	— 26
5. Coasting Cargo	1,400	1,900	1,889	— 11
6. Cart Hire	1,000	900	841	— 59
7. Steam Crane Charges	2,200	2,476	2,476	..
8. Refunds	4,000	6,600	6,610	+ 10
9. Claims for Losses and Damage of Cargo ..	1,500	1,870	1,870	..
10. Contribution to Government for Pensions ..	23	23	23	..
11. Contribution to Provident Fund	675	617	617	..
12. Provident Fund Deductions from Coolies' wages	1,200	1,450	1,452	+ 2
13. Provident Fund Contributions by the Trust.	1,200	1,450	1,452	+ 2
(*a*) Contingencies, subject to Regular Audit—				
Postage	10	..	..	..
Receipt Stamps	10	..	..	..
Furniture	100	14	14	..
Tarpaulins	1,500	1,475	1,475	..
Law Charges	..	53	53	..
Stationery and Printing	500	1,062	1,062	..
Lighting Pier and Yards	1,500	1,600	1,627	+ 27
(*b*) Contingencies admissible without Detailed Audit—				
Overtime Fees to Establishment ..	1,500	2,745	2,745	..
Miscellaneous	1,500	1,240	1,240	..
XI. Capital Account—				
Major Works—				
(*a*) Harbour Improvements	2,00,000	..	1	+ 1
(*b*) Moorings	10,000	..	..	..
(*c*) Other New Works	10,000	4,895	4,895	..
(*d*) Other debit transactions—				
(i) Acquisition of Land	10,000	1,872	25	— 1,847
(ii) Protective Works	10,000	1,000	..	— 1,000
(*e*) Tools and Plant	1,10,000	..	..	..
(*f*) Contingencies	10,000	1,000	..	— 1,000
Net depreciation on value of Government 3½ per cent. paper	..	..	39,459	+ 39,459
Total, Expenditure ..	9,54,803	6,97,544	7,31,534	..
Closing Balance ..	5,56,477	7,96,007	8,23,559	..
Total ..	15,11,280	14,93,551	15,55,093	..

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

Capital Account.

Receipts.	Rs.	*Charges.*	Rs.
Loans from Government for reconstruction of harbour prior to the formation of the Trust.	21,10,231	Repayment of loan in 1887	1,00,000
Do. do. during the year 1887-88.	4,37,000	Do. do. 1888	1,00,000
Do. do. 1888-89.	6,20,000	Do. do. 1889	1,00,000
Do. do. 1889-90.	7,40,000	Do. do. 1890	1,00,000
Do. do. 1890-91.	7,47,011	Do. do. 1891	1,00,000
Do. do. 1891-92.	8,00,000	Do. do. 1892	1,00,000
Do. do. 1892-93.	1,50,000	Do. do. 1893	1,00,000
Do. do. 1893-94.	2,70,000	Do. do. 1894	6,00,000
Do. do. 1894-95.	1,50,000	Do. do. 1895	1,00,000
Do. do. 1895-96.	4,54,985	Do. do. 1896	1,00,000
		Do. do. 1897	1,00,000
		Balance due to Government, 31st March 1898	48,79,227
Total ..	64,79,227	Total ..	64,79,227

(Signed) H. E. HOPE-ROSS,
Chief Accountant, Harbour Trust.

From F. C. HARRISON, Esq., Officiating Accountant-General to the Government of Madras, to the Secretary, Harbour Trust Board, Madras, dated Fort St. George, 4th September 1897, No. 2735.

With reference to your letter, No. 2286 A., dated the 27th August 1897, I have the honour to return, duly verified, the statement of advances received and repayments made by the Harbour Trust Board, and to note below the outlay incurred by the Public Works Department on the Harbour Works from 1883-84 to 1886-87. There were no repayments during this period—

	Rs.	A.	P.
1883-84	2,24,856	1	0
1884-85	2,09,086	10	11
1885-86	8,70,405	12	4
1886-87	8,05,881	12	3
Total ...	21,10,230	4	6

For payments made for the construction of the harbour before 1883-84, reference should be made to the Examiner of Public Works Accounts, Madras, as there is no record of them in this office.

Capital Account.

	Rs.	Rs.		Rs.	Rs.
1875, original estimate ..	57,45,165		Expenditure on harbour construction up to 31st December 1884	..	65,54,490
1884, excess on estimate ..	8,09,325	65,54,490			
1886, reconstruction estimate ..	45,90,051		*Expenditure on Harbour Reconstruction.*		
1892, additional estimate ..	12,38,845				
1895, completion estimate ..	3,69,122		Harbour reconstruction ..	60,15,335	
	61,98,018		* Harbour reconstruction, Extraordinary expenditure ..	1,10,418	
			Acquisition of land	19,496	
			Moorings	17,616	
			Protective revetment ..	2,44,901	
			Extension of fort drain ..	18,853	
			Beach Railway	2,890	
			Savings on the works above exclusive of the suspense balance in hand on the 31st March 1897, such as stock and the amount of other recoveries due from the Board, to be credited to construction ..	49,173	
Tools and Plant.					
Estimated recoveries	2,80,664	64,78,682			64,78,682
Total ..	..	1,30,33,172	Total ..	..	1,30,33,172

* Not included in the sanctioned estimate.

MADRAS,
October 1897.

(Signed) A. LEE POGSON,
Engineer, Harbour Trust Board, Madras.

MADRAS HARBOUR TRUST
TRAFFIC DEPARTMENT,
26*th May* 1898.

No. 318 T.

To

THE SECRETARY,
HARBOUR TRUST BOARD,
Madras.

SIR,

I have the honour to submit the following report on the working of the Board's Traffic Department during the year 1897-98, as compared with previous years.

2. The revenue collected by the Traffic Department during the year amounted to Rs. 6,02,699-6-4 as compared with Rs. 5,68,774-3-10 during 1896-97, showing an increase of Rs. 33,925-2-6 for the year under review. The details of receipts are as follows :—

	1896-97. Rs.	A.	P.	1897-98. Rs.	A.	P.
Imports	2,89,194	4	7	3,31,694	14	0
Exports	77,206	0	7	61,372	15	1
Cranage	56,997	15	11	48,307	0	2
Porterage	1,18,317	5	4	1,31,078	11	7
Entry of vehicles	12,617	6	9	12,542	7	9
Wharfage	6,095	0	0	7,141	2	1
Storage	841	5	2	1,234	11	9
Demurrage	285	14	1	408	8	3
Water supplied	5,532	0	0	6,816	4	0
Rent	822	14	8	639	5	0
Sundries	864	0	9	1,463	6	8
Total ...	5,68,774	3	10	6,02,699	6	4

3. The estimated and actual receipts during the past ten years have been as follows :—

Years.	Estimate revised. Rs.	Actuals. Rs.
1897-98	5,65,650	6,02,699
1896-97	5,30,020	5,68,774
1895-96	4,71,900	4,94,347
1894-95	4,37,200	4,51,309
1893-94	4,23,000	4,52,137
1892-93	3,83,000	4,22,138
1891-92	4,48,500	4,96,749
1890-91	* 2,99,000	4,81,916
1889-90	† 3,06,200	3,26,747

* Porterage receipts not estimated.

† Porterage work not done by the Board.

4. The following statement shows in detail the sources of revenue from which the foregoing amounts have been realised, and for ready comparison with former years, the sums collected as cranage have been apportioned to the two items where it was formerly shown, viz., imports and exports :—

Receipts.	Years.									
	1888–89.	1889–90.	1890–91.	1891–92	1892–93.	1893–94.	1894–95.	1895–96.	1896–97.	1897–98.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
(*a*) Harbour Dues, Imports.	1,72,481	2,00,099	2,41,441	2,85,071	2,26,678	2,39,872	2,37,163	2,77,441	3,32,121	3,67,175
(*b*) Do. Exports.	78,568	1,00,945	92,290	89,716	78,332	88,723	97,676	88,880	91,278	74,200
(*c*) Wharfage	8,574	10,225	12,470	7,971	6,466	6,775	5,10[illegible]	6,957	6,095	7,141
(*d*) Storage and Demurrage.	2,773	2,836	3,444	2,923	2,753	2,235	1,98[illegible]	1,764	1,126	1,643
(*e*) Rent of Trust Properties.	3,246	2,946	2,186	1,774	1,249	1,137	68	686	823	639
(*f*) Water Collections ..	..	..	..	3,091	3,736	4,126	4,49[illegible]	4,885	5,532	6,816
(*g*) Porterage	..	..	1,22,533	1,08,323	1,02,151	93,047	91,544	1,00,892	1,18,317	1,31,079
(*h*) Entry of vehicles ..	..	..	..	..	..	13,288	11,869	12,235	12,617	12,543
(*i*) Miscellaneous ..	1,324	2,966	7,562	6,870	1,755	2,934	780	608	864	1,463
Total ..	2,66,967	3,26,747	4,81,916	4,96,749	4,22,938	4,52,137	4,52,307	4,94,348	5,68,774	6,02,699

(*a*) The large increase of Rs. 35,054 under this head is principally due to the increased tonnage of coal and food-grains imported.

(*b*) Exports have fallen off during the year resulting in a decrease of Rs. 17,078.

(*c*) Increase of Rs. 1,046 due to increased tonnage of coal stacked.

(*f*) *Water collections.*—Increase due to a larger pipe having been fitted to the pier which is able to supply all water required by the shipping.

(*g*) The increase of Rs. 12,762 under the head of Porterage is due to large increases in the tonnage of coal handled.

There has been an increase of 35,210 tons in the tonnage of goods landed at, or shipped from, the port during the year.

5. The total tonnage landed at, or shipped from, this port during the past eleven years is as under :—

Years.	Pier.			Beach.			Grand Total.
	Import.	Export.	Total.	Import.	Export.	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1887–88	86,258	54,562	140,820	124,721	51,445	176,166	316,986
1888–89	85,133	47,262	132,395	116,464	41,741	158,205	290,600
1889–90	88,419	66,208	154,627	158,240	46,317	204,557	359,184
1890–91	100,154	58,855	159,009	188,383	44,580	232,963	391,972
1891–92	97,987	56,046	154,033	249,414	32,893	282,307	436,340
1892–93	80,339	55,514	135,853	197,504	30,424	227,928	363,781
1893–94	81,719	58,912	140,631	203,532	39,748	243,280	383,911
1894–95	89,181	62,545	151,726	196,095	41,643	237,738	389,464
1895–96	90,641	58,297	148,938	240,056	40,777	280,833	429,771
1896–97	114,665	66,285	180,950	270,940	36,656	307,596	488,546
1897–98	119,358	51,306	170,664	322,568	30,524	353,092	523,756

6. *Coal, Coke and Patent Fuel.*—The quantity of these goods imported during the year again shows a large increase, amounting to 26,973 tons as shown by the following statement which covers a period of eleven years. This increase is largely due to the Madras and South Indian Railways having received a portion of their fuel supply from Bengal :—

Years.	Coal.	Coke.	Patent fuel.	Total.
	Tons.	Tons.	Tons.	Tons.
1887–88	10,000	608	4,884	15,492
1888–89	21,645	997	6,443	29,085
1889–90	23,970	645	9,753	34,368
1890–91	41,888	1,389	5,613	48,890
1891–92	47,010	2,017	..	49,027
1892–93	63,600	1,322	2,953	67,875
1893–94	80,568	1,734	..	82,302
1894–95	97,500	1,663	..	99,166
1895–96	131,621	2,781	50	134,452
1896–97	148,607	2,052	..	150,659
1897–98	173,431	4,201	..	177,632

Kerosine oil.—There has been a large increase in imports both in bulk and in case oil.

Screw pile pier.—This structure has been maintained in good working order during the year. The following statement shows the amount of revenue collected on goods passed over the pier during the past eleven years :—

Years.	Imports.	Exports.	Total.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
1887–88	86,256 8 9	54,56[illegible] 8 1	1,40,818 0 10
1888–89	85,132 14 2	47,26[illegible] 11 3	1,32,394 9 5
1889–90	88,418 12 9	66,20[illegible] 15 0	1,54,626 11 9
1890–91	1,00,154 7 6	58,854 10 3	1,59,009 1 9
1891–92	97,987 10 0	56,046 6 6	1,54,034 [illegible] 6
1892–93	78,550 2 1	55,514 2 7	1,34,064 4 8
1893–94	87,222 7 11	58,912 1 9	1,46,134 9 8
1894–95	90,091 10 10	66,443 14 0	1,56,535 8 10
1895–96	97,397 12 0	58,297 4 0	1,55,695 0 0
1896–97	1,19,915 11 7	63,785 2 10	1,83,700 14 5
1897–98	1,25,249 8 0	51,306 10 1	1,76,556 2 1

Over-time work.—The quantity of work done on Sundays, holidays and after 6 P.M. has been much larger than during any previous year. The following statement shows briefly what work has been done out of regular working hours during the year.

Days.	Tonnage of goods landed and shipped.	Number of packages delivered to consignees.
	Tons.	
Sundays	51,234	41,912
Holidays	26,754	60,259
Nights	18,485	...
Total ...	96,473	102,171

Porterage work.—This work has been very heavy during the year owing to the increased tonnage of goods handled. The maistries and coolies have worked satisfactorily and have given no trouble.

The Cooly Provident Fund has met all claims and added considerably to its balance during the year.

Claims for loss and damage.—These claims have amounted to Rs. 1,870 during the year as against Rs. 1,660 during the previous year.

Staff.—The staff of the Traffic Department has worked hard and well during the year, and have given satisfaction in the discharge of their duties.

Appended are nine statements showing the quantities of goods landed at, or shipped from, this port during the past four years, viz. :—

Appendix I. Goods imported from Foreign Ports.
" II. Stores imported by the Madras Railway Company.
" III. Stores imported by the South of India Railway Company.
" IV. Stores imported by the Bezwada-Madras Railway Company.
" V. Goods imported from Coast Ports.
" VI. Goods exported to Foreign Ports.
" VII. Goods exported to Coast Ports.
" VIII. Stores, &c., imported by Government.
" IX. Stores, &c., exported by Government.

I have the honour to be,

Sir,

Your obedient Servant,

S. HUTCHENCE,
Traffic Manager.

I.—Statement of Goods imported from Foreign Ports.

——	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Apparel and effects ..	Packages	985	989	935	865	— 70
Alum	Barrels	773	1,326	827	1,937	+ 1,110
Asphalte, tar and pitch ..	Casks	2,493	2,878	2,562	3,254	+ 692
Acids	Cases	2,151	1,817	2,349	2,817	+ 468
Arms and guns	,, ...	93	74	75	100	+ 25
Arrack	Casks	1,218	1,388	1,171	1,429	+ 258
Blankets	Bales	55	47	55	28	— 27
Beef and pork	Cases	..	..	..	..	..
Bricks	100	900	600	1,223	1,034	— 189
Beer	Cases	5,408	6,944	6,442	6,011	— 431
	Barrels	1,800	1,311	988	1,513	+ 525
	Hogsheads	6,743	8,946	9,155	7,757	— 1,398
Boilers	No.	25	34	40	37	— 3
Corks	Bundles	60	57	101	61	— 40
Canvas	Bales	148	136	135	187	+ 52
Candles	Cases	28,458	36,399	34,994	45,113	+ 10,119
Colours	,, ...	3,999	3,170	4,542	5,660	+ 1,118
Confectionery, provisions and oilmanstores.	,, ...	16,508	21,045	24,102	25,548	+ 1,446
Crockery and glassware ..	Crates and casks ..	3,627	5,479	4,839	6,134	+ 1,295
Chalk	Barrels	366	1,165	446	1,246	+ 800
Cement	Tons	30	..	..	..	..
Cast-iron pipes and tubes ..	Casks	10,235	10,212	15,981	19,398	+ 3,417
Camphor	Tons	1,472	5,164	2,625	1,810	— 815
Coal	Tubs	5,523	4,017	4,850	6,091	+ 1,241
Coke	Tons	76,851	101,025	69,246	35,771	— 33,475
Fuel-patent	,, ...	896	1,219	961	385	— 576
Crackers	,, ...	..	50	..	..	..
Copper-plates and tiles ..	Cases	975	1,028	1,431	1,177	— 254
Corrugated iron ..	No.	4,096	7,960	11,524	5,873	— 5,651
Dynamite	Packages	3,234	7,306	7,815	11,684	+ 3,869
Earthenware	Cases	9,426	14,832	11,643	14,297	+ 2,654
Fire clay	Crates	1,492	3,983	1,845	2,127	+ 282
Flour	Casks	454	133	1,413	1,098	— 315
Flannel	Bags and barrels ..	1,348	1,018	886	926	+ 40
Gunpowder	Bales	23	44	8	26	+ 18
Hardware	Packages	3,384	1,537	1,449	2,920	+ 1,471
Hops	Cases and casks ..	11,532	8,423	14,594	13,308	— 1,286
Iron	Packages	287	323	219	123	— 96
Iron safes	Tons	10,863	17,384	18,607	18,713	+ 106
Kerosine-oil ..	No.	56	69	16	39	+ 23
Malt	Cases	343,365	8	97,016	223,344	+ 126,328
Millinery and haberdashery.	Tons	7,899	13,156	9,065	16,191	+ 7,126
Matches	Bags	56	2	14	17	+ 3
Machinery	Cases	1,881	1,855	1,891	2,347	+ 456
Nails	,, ...	8,140	7,956	7,463	7,061	— 402
Oil and turpentine ..	Tons	3,603	3,941	4,616	4,472	— 144
Piece-goods ..	Kegs	11,948	15,652	20,913	16,611	— 4,302
Twist	Drums	4,021	4,677	8,411	8,678	+ 267
Paper	Cases	78,435	25,406	27,168	29,249	+ 2,081
Piano	Bales		18,346	23,883	29,241	+ 5,358
Printing type	,, ...	29,432	21,594	30,636	31,266	+ 630
Pig lead	No.	4,435	4,415	4,937	5,176	+ 239
Paint	Cases	49	103	68	82	+ 14
Rattan	No.	231	262	156	244	+ 88
Rails	Kegs	629	1,261	2,369	894	— 1,475
Soap	Bundles	8,436	8,879	11,530	12,585	+ 1,055
Salt	No.	4,519	1,704	3,818	3,598	— 220
Steel	Cases	..	5,243	4,070	8,591	+ 4,521
Steel bundles and bars ..	Bags	1,050	1,366	1,839	1,645	— 194
Steel hoop	Cases and casks ..	458	370	590	222	— 368
Sodawater bottles	No.	395	277	1,013	1,602	+ 589
Sulphur	Bundles	8,905	21,676	25,379	27,384	+ 2,005
Shot	Crates	2,439	7,137	12,268	3,904	— 8,364
Sundries	Casks	2,155	2,125	2,410	3,215	+ 805
Specie	Kegs	10	467	205	529	+ 324
Sugar	Packages	130	185	209	157	— 52
Stationery	No.	53,125	54,214	59,748	63,344	+ 3,596
Spelter	Bags	612	644	807	462	— 345
Saws	Cases	1,527	1,266	2,083	4,147	+ 2,064
Twine and rope	Cakes	2,939	4,426	4,935	3,537	— 1,398
Tin plates	Cases	4,013	7,726	2,288	9,013	+ 6,725
Tin slabs	Bales and coils ..	36	46	67	33	— 34
Tin ingots	Boxes	862	218	325	453	+ 128
Timber	No.	4,389	5,060	6,514	7,353	+ 839
Tramway material	,, ...	2,496	5,015	3,370	4,309	+ 939
	Tons	..	..	..	10	+ 10
	Packages	..	3,367	30	..	— 30
	Tons	5,370	2,326	144	76	— 68
Wines and spirits	Cases	202	..	1	28	+ 27
	Casks	36,519	37,818	41,544	36,802	— 4,742
	Puncheons	713	1,346	1,602	430	— 1,172
Window glasses	Cases	139	109	244	279	— 35
White and red lead ..	Kegs	8,053	5,939	14,140	6,356	— 7,784
	.. ..	715	779	1,049	1,406	+ 357

I.—Statement of Goods imported from Foreign Ports—*cont.*

——	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Yellow metal	Cases	3,275	2,904	3,481	6,654	+ 3,173
Zinc sheets	Packages	1,342	299	779	1,030	+ 251
Horses and ponies ..	No.	917	1,061	1,147	758	— 389
Cows	,, ...	7	9	11	..	— 11
Elephants	,, ...	4	6	1	1	..
Carriages	,, ...	9	28	9	25	+ 16
Sleepers	Tons	..	..	..	10	+ 10
Animals	No.	..	..	..	19	+ 19

II.—Statement of Stores imported by the Madras Railway Company.

——	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Stores	Packages	8,915	8,852	23,158	5,909	— 17,249
	Tons	1,173	371	1,901	459	— 1,442
Wooden sleepers	,, ...	..	3,847	..	51	+ 51
Fuel	,, ...	..	..	..	..	..
Coke	,, ...	703	1,562	..	1,073	+ 1,073
Coal	,, ...	2,948	3,048	..	100	+ 100
Timber	,, ...	1,364	2,399	2,105	990	— 1,115
Fire bricks	100	75	50	44	..	— 44
Boilers	No.	6	10	..	1	+ 1
Rails	,, ...	..	10,441	9,000	9,813	+ 813
Fish plates	Bundles	..	..	24,675	13,914	— 10,761
Pot sleepers	No.	..	..	..	24,618	+ 24,618

III.—Statement of Stores imported by the South Indian Railway Company.

——	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Stores	Packages	13,933	6,556	4,046	1,980	— 2,166
	Tons	113	596	178	1,498	+ 1,320
Coke	,, ...	..	..	..	..	..
Coal	,, ...	..	..	..	..	..
Timber	,, ...	..	..	..	..	..
Boiler	No.	1	..	..	5	+ 5
Fire bricks ..	100	190	200	100	50	— 50

IV.—Statement of Stores imported by the Bezwada-Madras Railway.

——	Packages.	1894-95.	1895-96.	1896-97	1897-98.	Increase or decrease.
Stores	Packages	..	..	3,083	1,827	— 1,256
	Tons	..	..	1,422	1,788	+ 366
Sleepers	,, ...	..	..	6,199	512	— 5,687
Fish plates	Bundles	..	..	18,685	10,602	— 8,083
Rails	No.	..	..	35,413	20,152	— 15,261
Boilers	,, ...	..	..	6	1	— 5

V.—Statement of Goods imported from Coast Ports.

——	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Apparel and effects ..	Packages	520	517	430	648	+ 218
Alum	Barrels	149	12	16	7	— 9
Acids	Cases	305	180	284	73	— 211
Animals	No.	9	..	8	..	— 8
Arms and guns	Cases	10	5	8	4	— 4
Boilers	No.	..	..	1	..	— 1
Bricks and tiles	100	852	1,177	731	3,695	+ 2,964
Coffee	Bags	476	454	901	600	— 301
Candles	Cases	1	13	3	750	+ 747
Colours	,, ...	1,244	1,133	1,289	1,676	+ 387
Crockery and glassware ..	,, ...	1,233	614	720	973	+ 253

V.—Statement of Goods imported from Coast Ports—*cont.*

—	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Coal	Tons	17,556	27,548	79,361	137,560	+ 58,199
Coke	,,	..	..	1,091	2,426	+ 1,335
Carpets	Bales	95	62	38	49	+ 11
Camphor and benjamin	Tubs	1,060	799	460	401	− 59
Copra	Bags	68	253	..	..	..
Crackers	Cases	2	..	60	..	− 60
Copper	,,	10	433	68	13	− 55
,,	,,	3,755	1,951	305	1,535	+ 1,230
Cutch and lac	Tiles and ingots	5,208	4,611	4,098	2,530	− 1,568
Cast-iron tubes and pipes	Packages	61	224	110	251	+ 141
Earthenware	Tons	271	1,492	58	12	− 46
	Crates	182	5,663	1,114	34,660	+ 33,546
	Pipes	..	1,524	6,586	5,740	− 846
Firewood	Tons	..	19,405	19,640	25,587	+ 5,947
Flour	Bags and barrels	18,641	10,249	13,976	16,994	+ 3,018
Gunnies	Bales	11,341	319,788	388,393	268,709	− 119,684
Gram and peas, &c.	Bags	264,890	4,278	2,103	5,902	+ 3,799
Garlic	,,	7,495	2,151	2,919	2,595	− 324
Hardware	Cases	2,920	628	629	342	− 287
Horns	Bundles	856	6,732	7,154	7,990	+ 836
Hides	Bales	6,896	359	329	1,109	+ 780
Iron	Tons	202	15	9	5	− 4
Iron safes	No.	18	2,643	57,819	13,078	− 44,741
Kerosine-oil	Cases	..	5,332	5,612	2,390	− 3,222
Leaves	Bundles	4,393	3,136	2,733	3,869	+ 1,136
Liquor	Cases	2,071	76	181	67	− 114
Machinery	Tons	202	261	409	335	− 74
Millinery and haberdashery	Cases	371	6,265	4,004	2,999	− 1,005
Oil and turpentine	Drums	5,829	29,776	25,095	76,739	+ 51,644
Paddy	Bags	19,988	2,040	1,343	1,309	− 34
Piece-goods	Cases	4,814	1,442	1,374	2,054	+ 680
	Bales	..	8,428	10,273	10,418	+ 145
Paper	,,	7,962	592	102	73	− 29
Paint	Kegs	277	95,765	74,401	322,450	+ 248,049
Rice	Bags	111,384	2,367	1,649	1,608	− 41
Rose-water	Cases	1,594	28	1,600	..	− 1,600
Rails	No.	..	19,766	28,681	22,474	− 6,207
Seeds	Bags	12,061	5,745	3,669	2,541	− 1,128
Skins	Bales	7,108	729	741	356	− 385
Silk	,,	488	118	86	38	− 48
Sandalwood	Bundles	265	1,826	973	1,244	+ 271
Sugar	Bags	2,686	47	65	106	+ 41
Specie	No.	124	51,726	54,631	134,277	+ 79,646
Sundries	Packages	52,303	1,586	6,345	3,719	− 2,626
Sleepers	Tons	..	789	608	729	+ 121
Soap	Cases	863	772	254	345	+ 91
Sulphur	Casks	295	1,275	3,149	1,209	− 1,940
Spice	Packages	944	300	233	276	+ 43
Stationery	,,	184	8	867	1,242	+ 375
Sodawater bottles	Crates	1,651	608	1,626	1,128	− 498
Twine and rope	Bales and coils	1,309	658	466	1,105	+ 39
Tin plates	Boxes	1,248	233	2	..	− 2
	Slabs	78	1,501	1,617	1,623	+ 6
Twist	Bales	1,187	3,702	3,487	5,088	+ 1,601
Turmeric	Bags	5,185	18,196	18,972	18,840	− 132
Timber	Tons	14,154	300	615	891	+ 276
Tea	Cases	205	12	293	..	− 293
Tamarind	Bundles	86	191	918	245	− 673
Yellow metal	Cases	281	37	93	95	+ 2
Horses and ponies	No.	..	16	13	14	+ 1
Carriages	,,	14	..	..	..	..
Tramway materials	Tons	13				

VII.—Statement of Goods exported to Foreign Ports.

—	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Bone-meal	Bags	5,448	11,235	22,191	33,666	+ 11,475
Bear and ale	Cases	..	1	1	12	+ 11
	Casks	..	3	..	..	..
	Hogsheads	..	..	1	70	+ 69
Cinchona bark	Bales	123	..	91	282	+ 191
Chillies	Bags and bundles	883	816	2,049	2,113	+ 64
Cigars	Cases	613	721	661	1,012	+ 351
Coffee	Bags	27,864	26,283	15,934	10,692	− 5,242
Cotton	Bales	39,607	44,245	46,276	17,021	− 29,255
Cotton twist	,,	1,664	463	287	905	+ 618
Coriander and omum seeds	Bags	10,473	6,662	6,485	10,188	+ 3,703
Carpets	Bales	239	410	428	515	+ 87
Coal, ship's use	Tons	152	330	865	1,400	+ 535

VII.—Statement of Goods exported to Foreign Ports—*cont.*

—	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Deer horns	Packages	1,477	943	1,057	420	− 637
Explosives	Cases	2	..	..	..	..
Firewood	Tons	..	7	16	10	15	+ 5
Carriages	No.	110,328	67,776	49,336	6,961	− 42,375
Ground-nuts	Bags	489	253	30	803	+ 773
Gram, peas, &c.	,,	71	154	290	207	− 83
Horns, cow and buffalo	Tons	18,519	24,922	23,929	28,680	+ 4,751
Hides, tanned	Bales and bundles	522	702	860	1,314	+ 454
Hardware	Cases and casks	27,416	32,046	26,205	31,604	+ 5,399
Indigo	Cases and chests	3	16	24	12	− 12
Iron	Tons	17,809	42,378	190,557	2	− 190,555
Jaggery	Bags	237	2	32	296	+ 264
Myrabolams	,,	17,763	24,825	25,401	27,548	+ 2,147
Miscellaneous	Packages	..	50	..	24	+ 24
	Tons	16,094	19,367	17,657	30,355	+ 12,698
Onions	Bags and baskets	451	257	376	524	+ 148
Oil	Casks	4,417	5,360	5,445	6,236	+ 791
Provisions	Packages	7,788	10,035	7,018	3,267	− 3,751
Piece-goods	Bales		2,202	3,962	2,705	− 1,257
	Cases		1,575	917	1,703	+ 786
Potatoes	Bags and baskets	1,648	65,892	60,464	61,918	+ 1,454
Poonac	Bags	47,253	10	4	10	+ 6
Piano	No.	5	..	..	..	..
Paddy	Bags	..	3,023	26,053	32,695	+ 6,642
Rice	,,	44,694	1,194	802	652	− 150
Redwood	Tons	1,113	13	..	..	..
Salt	Bags	7	12,877	9,758	38,718	+ 28,960
Seeds, gingelly and castor	,,	90,571	37,344	35,038	32,153	− 1,885
Skins, sheep and goat, tanned.	Bales	38,649	664	1,439	1,954	+ 515
Sandalwood	Bundles	288	276	108	343	+ 235
Spirits and wine	Cases	22	15	1	2	+ 1
	Casks	9	..	..	10	+ 10
	Puncheons	..	..	..	2,024	− 8,240
Sugar	Bags	1,762	3,727	10,264	53	− 17
Specie	Boxes	104	76	70	3,839	+ 292
Tamarind	Bundles	4,737	3,562	3,547	883	− 417
Turmeric	Bags	3,551	6,744	1,300	1,527	+ 423
Tea	Cases	2,156	1,658	1,104	40	+ 32
Timber	Tons	..	9	8	1,141	− 978
Wool	Bales	2,049	2,426	2,119	3	+ 3
Yellow metal	Tons	7	5	..	5	− 98
Horses	No.	24	28	103	..	− 3
Ponies	,,	9	21	3	..	..
Elephant	,,	2	1	..	..	..
Lion	,,	1	..	..	..	..
Tiger	,,	1	..	..	..	..
Leopards	,,	6	..	..	..	..
Bear	,,	1	..	..	..	..
Sheep	,,	79	20	20	52	+ 32
Animals	,,	..	9	3	2	− 1

VIII.—Statement of Goods exported to Coast Ports.

—	Packages.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Beer and ale	Cases	354	300	171	293	+ 122
	Casks	166	76	15	14	− 1
	Hogsheads	107	195	238	120	− 118
Boiler	No.	..	..	..	1	+ 1
Bricks	100	..	5	..	200	+ 200
Cinchona bark	Bales	..	376	296	660	+ 364
Chillies	Bags and bundles	2,444	684	3,310	1,704	− 1,606
Cigars	Cases	732	810	735	757	+ 22
Coffee	Bags	449	672	400	799	+ 399
Cotton	Bales	5,295	7,393	6,244	1,384	− 4,860
Cotton twist	,,	3,034	4,355	2,844	3,327	+ 483
Coriander and omum seeds	Bags	2,067	2,531	1,897	810	− 1,087
Cement	Casks	195	324	1,433	1,013	− 420
Carpets	Bales	27	41	49	21	− 28
Coal, ship's use	Tons	480	632	1,126	300	− 826
Deer horns	Packages	..	1	..	..	..
Explosives	Cases	46	17	.. 5	2	− 3
Eggs	Pots	1,263	1,006	1,624	2,396	+ 772
Firewood	Tons	..	..	..	..	..
Carriages	No.	35	42	49	52	+ 3
Ground-nuts	Bags	63,700	31,918	17,041	15,970	− 1,071
Gram, peas, &c.	,,	372	544	33,724	39,264	+ 5,540
Horns, cow and buffalo	Tons	106	387	701	425	− 276

VIII.—Statement of Goods exported to Coast Ports—*cont.*

—	Packages.	1894–95.	1895–96.	1896–97.	1897–98.	Increase or decrease.
Hides	Bales and bundles	252	285	245	277	+ 32
Hardware	Cases and casks	800	2,828	1,928	4,486	+ 2,558
Indigo	Cases and chests	264	164	104	80	— 24
Iron	Tons	695	534	614	874	+ 260
Old iron	,,	165	1,693	401	13	— 388
Jaggery	Bags	488	2,099	353	204	— 149
Kerosine-oil	Cases	11,005	9,993	5,979	8,536	+ 2,557
Myrabolams	Bags	131	78	..	21	+ 21
Miscellaneous	Packages	18,312	31,686	37,353	28,966	— 8,387
Onions	Bags and baskets	94,737	57,420	43,039	36,161	— 6,878
Oil	Casks	641	357	305	783	+ 478
Piece-goods	Cases	8,852	1,160	2,403	1,302	— 1,101
	Bales		7,709	8,714	10,606	+ 1,892
Potatoes	Bags and baskets	20,068	18,238	10,775	4,796	— 5,979
Poonac	Bags	396	2,666	3,848	1,566	— 2,282
Piano	No.	11	32	11	7	— 4
Paddy	Bags	4,123	3,031	..	2,013	+ 2,013
Provisions	Packages	1,565	2,260	2,943	2,706	— 237
Rice	Bags	8,196	8,369	13,569	30,387	+ 16,818
Redwood	Tons	134	88	106	109	+ 3
Seeds, gingelly and castor	Bags	68,201	77,404	35,458	8,487	— 26,971
Skins, sheep and goat, tanned	Bales	1,706	531	618	632	+ 14
Sandalwood	Bundles	373	39	10	34	+ 24
Spirits and wines	Cases	2,534	2,434	2,416	2,416	..
	Casks	409	253	241	82	— 159
	Puncheons	..	..	1	2	+ 1
Sugar	Bags	1,725	3,708	3,919	4,159	+ 240
Specie	Boxes	75	28	17	10	— 7
Salt	Bags	4,001	1,040	9,605	33,729	+ 24,124
Tamarind	Bundles	3,028	2,982	3,623	10,851	+ 7,228
Turmeric	Bags	53,374	41,679	12,583	15,647	+ 3,064
Tea	Cases	114	109	29	41	+ 12
Timber	Tons	..	18	49	..	— 49
Wool	Bales	478	1,361	1,806	610	— 1,196
Yellow metal	Tons	31	69	18	55	+ 37
Horses	No.	..	33	130	28	— 102
Ponies	,,	..	39	20	7	— 13
Old rails	Tons	..	..	450	..	— 450
Old fish plates	,,	..	..	300	..	— 300

IX.—Statement of Stores, &c., imported by Government.

Department.	Description.	Class.	1894–95.	1895–96.	1896–97.	1897–98.	Increase or decrease.
Accountant-General	Specie silver	Boxes.	489	167	20	..	— 20
	,, copper	,,	480	150	300	3,347	+ 3,047
	Notes	,,	..	..	27	25	— 2
	Packages	No.	..	13	2	15	+ 13
Public Works Department.	Boilers	,,	1	..	1	1	..
	Coal	Tons.	..	..	..	..	..
	Coke	,,	64	18	..	207	+ 207
	Iron	,,	151	3	120	145	+ 25
	Bricks	100	1,875	..	..	..	..
	Stores	Pkgs.	..	491	3,294	5,312	+ 2,018
	,,	Tons.	..	..	..	391	+ 391
Ordnance	Coal	,,	145	..	..	..	..
	Coke	,,	..	..	..	110	+ 110
	Iron	,,	..	7	62	176	+ 114
	Ammunition	Boxes.	13,465	10,570	6,043	3,279	— 2,764
	Boilers	No.	..	2	..	..	..
	Stores	Pkgs.	16,390	9,901	7,426	10,887	+ 3,461
	,,	Tons.	..	..	..	51	+ 51
	Timber	,,	..	77	1,176	180	— 996
	Bricks	100	50	34	60	..	— 60
	Gunpowder	Pkgs.	..	53	421	311	— 110
Madras Harbour Works	Cement	Casks.	14,000	15,600	3,580	..	— 3,580
	Stores	Pkgs.	40	8	..	8	+ 8
	Coal	Tons.	..	..	..	..	..
Clothing	Packages	No.	1,900	2,048	1,975	1,824	— 151
Police	,,	,,	131	166	141	91	— 50
Salt Revenue	,,	,,	79	53	61	46	— 15
Post Office	,,	,,	2,886	2,021	2,596	1,641	— 955
Medical	,,	,,	1,012	350	655	763	+ 108
Telegraphs	,,	,,	10,770	11,552	6,191	20,105	+ 13,914
Stationery	,,	,,	1,115	707	925	1,463	+ 538
Stamps	,,	,,	1,611	2,497	1,757	2,036	+ 279
Commissariat	,,	,,	3,611	2,814	1,452	2,075	+ 623

IX.—Statement of Stores, &c., imported by Government—*cont.*

Department.	Description.	Class.	1894–95.	1895–96.	1896–97.	1897–98.	Increase or decrease.
Gazette Press	Packages	No.	249	344	74	118	+ 44
Marine	,,	,,	317	157	380	234	— 146
Revenue Survey	,,	,,	37	43	20	24	+ 4
Agriculture	,,	,,	6	3	6	4	— 2
Government Central Museum.	,,	,,	6	4	10	9	— 1
Under Secretary to Government	,,	,,	68	53	44	54	+ 10
Superintendent of Prisons	,,	,,	16	..	10	44	+ 34
Revenue Board	,,	,,	13	13	40	213	+ 173
Forests	,,	,,	1	..	2	..	— 2
Presidency College	,,	,,	4	17	8	..	— 8
Chemical Examiner	,,	,,	35	23	13	24	+ 11
Medical College	,,	,,	31	16	41	75	+ 34
Deputy Collectors	,,	,,	..	15	..	4	+ 4
Astronomer	,,	,,	7	9	8	17	+ 9
Presidency Paymaster	,,	,,	..	..	..	..	..
Registration	,,	,,	..	5	..	..	..
Registrar of High Court	,,	,,	2	12	4	5	+ 1
Civil Engineering College	,,	,,	21	10	8	14	+ 6
Examiner of Accounts, Bezwada-Madras Railway	,,	,,	..	11	9	35	+ 46
Revenue Settlement	,,	,,	1	4	1	2	+ 1
Executive Engineer, Military Works.	,,	,,	2,003	879	260	3,500	+ 3,240
	Bricks	100	45	..	..	..	..
Collectors	Packages	No.	4	4	14	14	..
Deputy Port Conservator	,,	,,	..	60	47	5	— 42
Comptroller, Military Accounts	,,	,,	2	3	13	1	— 12
Agent for Government Consignments	,,	,,	501	303	257	412	+ 155
Government Botanical gardens	,,	,,	282	199	278	103	— 175
Commissioner of Paper Currency	,,	,,	13	9	13	..	— 13
Inspector of Salt	,,	,,	..	1	30	160	+ 130
Engineer-in-Chief, Bezwada-Madras Railway	,,	,,	..	77	..	..	..
Officer in charge, Pensioners, Madras	,,	,,	1	1	..	..	..
Superintendent of Central Jail.	,,	,,	..	7	28	5	— 23
Meteorological Reporter	,,	,,	..	3	1	4	+ 3
Pay Examiner	,,	,,	1	14	15	10	— 5
Miscellaneous Department	,,	,,	24	319	92	189	+ 97
Director of Public Instruction	,,	,,	..	..	..	2	+ 2

X.—Statement of Stores, &c., exported by Government.

Department.	Description.	Class.	1894–95.	1895–96.	1896–97.	1897–98.	Increase or decrease.
Accountant-General.	Specie silver	Boxes.	17	865	9	..	— 9
	,, copper	,,	180	95	55	..	— 55
	,, notes	,,	6	..	1	1	..
	,, Pkgs.	No.	5	7	1	3	+ 2
Bank of Madras	,, silver	Boxes.	..	..	..	..	..
	,, copper	,,	..	..	..	..	..
Ordnance	Gunpowder	,,	..	584	54	883	+ 829
	Pkgs. & Pieces.	No.	8,819	6,871	6,491	10,658	+ 4,167
	Ammunition	Boxes.	..	36	2,389	3,070	+ 681
Public Works Department.	Pkgs. & Pieces.	,,	1,173	1,500	2,481	1,644	— 837
	Tons	,,	..	7	76	12	— 64
Clothing	Pkgs. & pieces.	,,	1,160	1,257	1,828	852	— 976
Police	,,	,,	933	493	492	541	+ 49
Salt Revenue	,,	,,	960	591	499	354	— 145
Medical	,,	,,	1,027	734	983	646	— 337
Telegraph	,,	,,	3,045	11,432	1,782	1,743	— 39
Stationery	,,	,,	680	1,010	689	726	+ 37
Stamps	,,	,,	221	385	262	270	+ 8
Commissariat	,,	,,	6,030	6,263	4,032	3,260	— 772
Gazette Press	,,	,,	618	496	341	187	— 154
Marine	,,	,,	98	51	67	81	+ 14
Revenue Board	,,	,,	105	11	81	40	— 41
Revenue Settlement	,,	,,	35	44	26	279	+ 253
Revenue Survey	,,	,,	138	54	119	57	— 62
Superintendent of Prisons	,,	,,	58	24	23	18	— 5

X.—Statement of Stores, &c., exported by Government—*cont.*

Department.	Description.	Class.	1894-95.	1895-96.	1896-97.	1897-98.	Increase or decrease.
Registration	Pkgs. & pieces.	Boxes.	62	92	20	75	+ 55
Conservator of Forests ..	,,	,,	5	30	..	..	..
Government Central Museum.	,,	,,	..	7	8	5	— 3
Government Astronomer ..	,,	,,	21	3	2	..	— 2
Government Botanist ..	Packages ..	No.	48	24	..	92	+ 92
Inspector of Salt	,, ..	,,	..	102	7	..	— 7
Chemical Examiner ..	,, ..	,,	1	4	..	..	..
Collectors	,, ..	,,	..	5	5	2	— 3
Meteorological Reporter ..	,, ..	,,	..	19	11	14	+ 3
Salt Revenue	,, ..	,,	..	527	16	..	— 16
Miscellaneous Department ..	,, ..	,,	59	40	46	52	+ 6
Civil Engineering College ..	,, ..	,,	..	3	..	..	..
Under Secretary to Government	,, ..	,,	..	5	..	..	..
Post Office	,, ..	,,	..	295	..	..	..
Medical College	,, ..	,,	..	18	5	..	— 5
Registrar of High Court ..	,, ..	,,	31	38	35	49	+ 14
Examiner of Accounts, Bezwada-Madras Railway ..	,, ..	,,	..	10	..	..	..
Executive Engineer, Military Works	,, ..	,,	..	172	33	2	— 31
Agent for Government Consignments	,, ..	,,	..	..	..	73	+ 73

S. HUTCHENCE,
Traffic Manager, Harbour Trust.

To

The Secretary, Harbour Trust Board, Madras.

From F. J. WILSON, Esq., to the Chairman, Harbour Trust Board, Madras, dated 26th October 1897.

With reference to Board's resolution No. 7, passed at the meeting of the 15th instant, and your letter No. 3253, dated 16th instant, I have the honour to submit the following remarks on the papers forwarded to me.

Before dealing with the survey of the Madras roadstead lately made by Lieutenant Beauchamp, I propose to review the circumstances which lead up to this survey being made.

As to what would be the final result of constructing a close harbour with an eastern entrance at Madras has been the subject of controversy ever since the scheme was first projected more than twenty years ago. Mr. Parkes, who designed the original harbour, anticipated a gradual accumulation of sand on the south side of the harbour, but at a constantly decreasing rate. In a paper read before the Institution of Civil Engineers in 1882, Mr. Vernon-Harcourt says with reference to the Madras Harbour, "as the breakwaters extend to a depth of 45 feet at low water, the sand is certain not to encumber the entrance for a long period"; and in the discussion on this paper Mr. Thorowgood said that he thought the accumulation was rather quicker than was at first anticipated, but he did not think that there was any reason to suppose that the harbour could not be made efficient in consequence. He also said that, judging from repeated surveys, there never had been the slightest indication of any shallowing at the mouth, or anything in the way of silting up, except from wave-borne sand which was arrested mechanically by the solid obstruction of the south pier.

Proceedings, Vol. LXX, p. 18.

In submitting the progress report of the harbour for the quarter ending 30th September 1894, the trustees drew particular attention to the advance seawards of the water line to the south of the harbour, and in noting on this, Sir Alexander Rendel says the importance of this advance depends very much on whether it is going on to the same extent below the water line as at and above it, and to ascertain this he asked that cross sections extending out to the 7 fathom line should be made *at intervals throughout the year.* G.O., No. 584 W., dated 12th March 1895, directs that arrangements should be made for doing this, and that the results should be recorded with the quarterly reports submitted to Government. It does not appear from the file what orders of the Board were passed on this Government Order, but the sections asked for do not appear to have been taken.

Note, dated 11th January 1895.

With his report on the harbour works for the quarter ending 30th September 1895, the Engineer submitted the results of his survey of the harbour and roadstead, taken in July, August and September, which showed important movements of sand both inside and outside the harbour, and a shallowing of the entrance of 2′ 7″ between 1893-95. The Engineer gave it as his opinion that the roadstead was shallowing, and that the time had now arrived when measures must be taken to prevent further accretion of sand outside the entrance, where dredging would be of no avail, and in a separate report recommended the construction of a groyne south of the present harbour.

Mr. Pogson also in this report stated his opinion that the shallowing of the roadstead was not due to the harbour, and that the Madras roadstead was subject to periods of shallowing and deepening before the harbour was constructed.

Government sent this report home, and ordered whatever information on the subject there was in the Secretariat, or Presidency Port Officer's offices, to be furnished to the Harbour Trust Board.

G.O., No. 529 W., dated 11th February 1896.

The Secretary to Government in the Marine Department pointed out that the records did not support Mr. Pogson's theory, as to the shallowing of the roadstead and asked for soundings for a series of years.

Memo. No. 76 E., dated 18th February 1896.

Mr. Pogson replied to this memo. and with some other particulars again stated that soundings in deep water showed a steady shallowing at a distance from the harbour, and that, in his opinion, unless sand was prevented from reaching the entrance, it might be left high and dry a few years hence.

The Board, in submitting Mr. Pogson's report to Government, asked that it might be submitted to an expert for opinion, and that the roadstead might be surveyed by a Marine officer.

P.W. No. 536 M., dated 4th August 1896.

The Secretary to Government in the Marine Department in noting on this report and accepting the fact that the entrance was getting shallower, advocated a north-eastern entrance as the only satisfactory solution of the question, from an engineering point of view, and the matter was referred to Sir Alexander Rendel.

Mr. Pogson, the Engineer, having been directed to proceed to England to consider the question with Sir Alexander Rendel, the latter gives his opinion in his report, dated 23rd September 1896.

The information laid before Sir Alexander Rendel was presumably that contained in the Engineer's reports referred to above, and the opinion he formed was, that sand was now beginning to travel past the harbour, that the deposit in the entrance was due to wave action, and is a bar formed in the same way as at river mouths. That whether the bar would increase or not depended mainly on whether the shallowing outside the harbour increases, but that as the entrance was not originally placed in water sufficiently deep to bear much loss, we should act at once as if further loss was certain. He recommended the purchase of a sand pump dredger, capable of holding about 500 tons of sand, and that if dredging should fail to secure a sufficient depth in the present entrance and the harbour is to be maintained, he would recommend a new north-east entrance as shown on a plan which he forwarded.

About this time the Board was committed to the purchase from Government of the dredger *Wenlock* which is a bucket dredger with a hopper capacity of about 400 tons. Estimates have now been made for converting this dredger into a sand pump dredger, and indents sent home for the pumps, &c., which will be fitted in the Calcutta dockyard, where the dredger now lies.

We have therefore taken the first step considered necessary by Sir Alexander Rendel, to meet further loss of depth at the entrance, should it occur.

Having taken this step, it remains for the Board to examine the information on which the recommendation to the purchase of a dredger was made, with the view of ascertaining whether anything further is required, and also to determine at what stage dredging should begin, and to what extent, or, in other words, what minimum depth of water should be maintained at the entrance to the harbour.

With regard to the first point the main statements made were—

(1) that the entrance had shallowed 2′ 7″ between 1893 and 1895 (paragraph 32 of Mr. Pogson's report, dated 17th December 1895);
(2) that 220 feet east of the entrance there had been a shallowing of 3 feet in the same time (paragraph 37 of the same report);
(3) that this change, together with what had taken place in deeper water, tended to show that the roadstead was shallowing.

We have now received the marine survey made by Lieutenant Beauchamp in May and June 1897, and in his note accompanying this survey he compares it with a survey made by Lieutenant Jarrad, R. N., in 1876, and with a chart prepared from a survey made by Mr. Pogson in 1886. The result of this comparison is that the entrance was 3 feet deeper in 1886 than in 1876 before the harbour was constructed, and that now it is 6 feet shallower than in 1886, or 3 feet shallower than in 1876. That all to the northward and outside the seven fathom contour to the eastward and south-eastward is much the same as ever. This information is valuable so far as it goes, and it is satisfactory to know that there are now no grounds for believing that the harbour is doomed to an early disappearance in the sand, as might be apprehended if a general shoaling up of the roadstead took place.

I would point out, however, that the comparison of a single set of soundings taken in any one year with a similar set taken ten years previously, is not an absolutely reliable indication of what is taking place, more especially when it is desired to notice small differences in depth. Putting aside the many sources of error in a marine sounding, no account is taken of changes in the seabed due to the weather, or of what occurred in the intervening years. We are aware that the shore line advances and recedes at different seasons of the year, and it was to ascertain whether similar movements were going on below water that Sir Alexander Rendel asked for sections taken at intervals throughout the year two and a half years ago, and I have not been able to ascertain why these were not taken.

The results of Lieutenant Beauchamp's survey must not be taken to mean that there has been a gradual deepening of the entrance by 3 feet between 1876 and 1886, and a gradual shallowing since that date to the present time. All that the survey tells us with regard to the entrance is that on a particular day of this year there was a certain depth of water, and the two previous charts give us similar information for two particular days in other years. I have now before me the following sources of information regarding the harbour entrance:—

(1) The three charts—Lieutenant Beauchamp's, and the two others of 1876 and 1886.

(2) A section of the entrance showing various sets of soundings in different years, which accompanied Engineer's letter No. 68-A, dated 25th April 1896.

(3) A statement, which I have obtained from Mr. Pogson, showing soundings taken across the entrance at intervals of a month, since January 1897 and certain other dates.

For the purposes of comparison, I have reduced the chart soundings to the datum in use on harbour plans, that is what is there called DeHavilland's mean sea level. This level is 6·83 feet below the bench mark, known as DeHavilland's bench mark, under the north gate of the fort, and is the level which was accepted as the mean level of the sea up to 1885.

From the charts I find the depth of the entrance, below this datum, was 47·13 feet in 1876, 49·63 feet in 1886, and 43·89 feet in 1897.

From Mr. Pogson's section I find that in 1889 there was a depth of 51 feet, and that the sea bottom at the entrance is shown as the same on 25th October 1893 and January 1895. In paragraph 32 of Mr. Pogson's report for quarter ending 30th September 1895, it is stated that the soundings taken (presumably some time in July, August or September 1895) showed a depth of only 44′ 5″ and no mention is made of any sounding in January. In looking at this section a few days ago, Mr. Pogson threw doubts on its correctness, which purports to be a true copy of an original signed by Mr. Pogson, vouched for by Mr. Manuel, the Manager of his office.

The third source of information, the statement showing soundings at short intervals in the present year, shows that it is possible for there to be a difference in level either shallowing or deepening of a foot in a month. For example, between the 11th June 1897 and 22nd July 1897, there was a shallowing of nearly a foot, and between 25th August 1897 and 22nd September 1897, there was a deepening of over a foot. The average depth of the entrance at 260 feet from south caisson for 1897 comes to 42·9 feet, the highest reading is that for September 0·8 feet above the average, and the lowest is that for July 0·8 feet below the average.

It is obvious, therefore, that if we wish to watch carefully what is taking place at the entrance, we must have soundings taken at regular intervals throughout the year, and that conclusions based on two single sets of soundings taken in different years may be absolutely misleading. Assuming similar variations in the depth to have been going on in 1893 and 1895, as are now observed to be going on in 1897, the actual average difference in depth between 1893 and 1895 might have been only about a foot, instead of 2′ 7″ as reported.

On the recommendation of Sir Alexander Rendel, Government has directed that

G.O., No. 34 W., dated 9th January 1895.

soundings outside the harbour should be taken once in four years, and so far as the roadstead is concerned, I think this should be sufficient, as the maximum period that should be allowed to elapse without a

regular set of soundings; but we still require to watch carefully the movements of sand in the immediate vicinity of the south arm and at the entrance. For this purpose, in my opinion, soundings taken once a year are altogether insufficient. Lithographed diagrams should be drawn up for regular submission once a month. I am aware that there are difficulties in taking accurate soundings when the sea is not calm, but so far as the entrance is concerned, I think it should be possible, with very rare exceptions, to get soundings once a month. In any case the diagrams should be submitted, with the reasons in such cases, why the soundings could not be taken. Spaces would be provided on these diagrams for information regarding any unusual disturbance of the sea, for the velocity and direction of currents observed outside the harbour, and in the entrance itself, and remarks would naturally be expected on any unusual alteration of the sea bottom.

It will be observed from the statement submitted that Mr. Pogson has been collecting most of the informations required, only it is not put on record in any systematic way. A copy of the diagram would be sent to the Deputy Port Conservator for information.

With regard to the minimum depth which should be maintained at the entrance:—For a proper consideration of this question it is necessary to understand the different datum lines to which our different sources of information are referred. I annex a diagram showing these different levels—all the levels on the harbour works and the previous harbour surveys are referred to what is called DeHavilland's mean sea level. This was the accepted mean level of the sea up to 1885, and is 6·83 feet below the DeHavilland's bench mark on the fort. Under these circumstances, I think it better to adhere to this datum remembering that the mean level of the sea as ascertained by latest tidal observations, and accepted by the Survey of India, is a little over a foot below the DeHavilland's mean sea level.

The lowest recorded tide, as published in the preface to Official Madras Tide Tables for 1897, is 3·49 feet (say 3½ feet) below DeHavilland's mean sea level. This is a little lower than the lowest tide of 1897 as shown in the tide table to occur on the 20th March 1897.

The highest recorded tide is 2·01 feet (say 2 feet) above DeHavilland's mean sea level, which is a little higher than the highest tide shown in the tables for 1897 to occur on the 25th November 1897.

I understand that the nautical consideration desired by the Presidency Port Officer in fixing a minimum depth, is that the depth should be such that any vessel which might be inside the harbour on the occurrence of a storm should be able to get out without bumping.

The worst possible case would be that in which such a vessel should be one of the greatest draught which use the harbour, and that the occurrence of the storm should coincide with the lowest tide. Mr. Pogson informs me that he knows of a case of a vessel drawing 27 feet entering the harbour, but as the Colombo Harbour ship berths are only dredged out to 26 feet below low-water, I think we need not take account of more draught than 25 feet for the present.

Kyle on Colombo Harbour Works, Vol. LXXXVII, Monthly Proceedings of Constitution of C.E.

As regards height of waves I cannot get any direct evidence of the height of waves at Madras. The height of a wave is dependent on the velocity and the depth of water, and the velocity is governed by the strength of the wind and the distance in the direction of the wind over which the wind acts on the water. In a south-west direction there is no land between Colombo and Africa. The greatest heights of waves observed at Colombo during the south-west monsoon, as given in an appendix to the paper marginally quoted, were 12 feet in the offing, and 15 feet just outside the breakwater. Between 1878 and 1882 the greatest wave observed at Colombo during the north-east monsoon is 6 feet, but it is believed that a wave which broke the gauge rose to 7 feet.

It does not seem possible that a vessel should plunge to a greater depth than its own draught measured below the level of the trough of a wave.

Taking, therefore, a vessel of 25 feet draught, and a wave 20 feet from trough to crest, occurring when the general level of the water was at *lowest recorded tide*, *viz.*, 3½ feet below DeHavilland's mean sea level, we get the greatest depth to which the vessel could plunge as $25 + \frac{20}{2} + 3{\cdot}5 = 38\frac{1}{2}$ feet below DeHavilland's mean sea level.

The level of the entrance at present is, according to Lieutenant Beauchamp, nearly 44 feet below DeHavilland's mean sea level, and according to Mr. Pogson's latest soundings 43 feet. The margin, under these assumptions, between the ship's bottom and that of the entrance is $4\frac{1}{2}$ or $5\frac{1}{2}$ feet.

It must be remembered that this assumes a wave 5 feet greater than ever observed at Colombo, and that, as a matter of fact, the level of the sea during a cyclone is generally raised above its ordinary level.

Under these circumstances, I am inclined to think that it will be sufficient if we maintain the entrance to its present level, or 43 feet below DeHavilland's mean sea level. This is 40·11 feet below Indian spring low-water mark, the chart datum, as the highest recorded tide arises to 2 feet above DeHavilland's mean sea level. If this level is decided on, some alteration would be required in the design of the dredger, which, I understand, is only intended to dredge to 40 feet below water level. To dredge to 43 below DeHavilland's mean sea level, at all states of the tide, the dredger should be capable of dredging to a depth of 45 feet.

ENCLOSURE.

ADMINISTRATION Report of the Deputy Conservator of the Port of Madras for the year 1897–98.

The number and tonnage of vessels entering and leaving the Port of Madras during the year is shown in the following statement and shows increase over the preceding year in tonnage:—

Vessels entered.

	1896–97.		1897–98.	
	NO.	TONS.	NO.	TONS.
Steam ships, mercantile	662	1,180,664	614	1,236,600
Sailing ,, ,, ...	...	...	1	995
Do. Native crafts	104	10,633	98	11,721
Men-of-War, Government ships and transport	10	25,225	...	...
Total ...	776	1,216,522	713	1,249,316

Vessels left.

	NO.	TONS.
Steam ships, mercantile	613	1,232,870
Sailing ,, ,, ...	1	995
Do. Native crafts	99	12,016
Total ...	713	1,245,881

Of the above vessels 295 were foreign * going and 321 coasting.

* Including { 33 German. 23 Austro-Hungarian. 24 French. 6 Norwegian.

Total, Foreign .. 85

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ENCLOSURES TO C. No.

ORDER OF GOVERNMENT.	A	A	A	A	A	A	A	
LETTER OF GOVERNMENT.								
STATEMENT WITH DITTO								
PAPERS NOT FILED UP, BEING MEANT FOR DESPATCH IN ORIGINAL.								

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