(1) பக்கங்களின் எண்ணிக்கை 88

(2) புதுக்கித் திருப்பிய நாள் 6.90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

PWD துறை

அரசாணை எண். 950
மு. கோப்புத் தாள் எண்.

அச்சகம்
பலவகை

நாள் : 22.3.1892

198 .

44

படிக்கவோ கண்டபடி கையாளவோ கூடாது

ஆவண. கா-1—18,000—15-6-87.

950
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From W. P. AUSTIN, Esq,, C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, dated Madras, 25th January 1892, No. 2998.

I have the honour to submit, herewith, for the information of Government, a statement of progress made upon the Madras Harbour Works during the quarter ending 31st December 1891 together with tracing in duplicate.

ENCLOSURES.

EXTRACT of Proceedings of the Trustees of the Harbour of Madras at a meeting held at the Offices of the Board, on Friday, the 22nd day of January 1892.

* * * * * *

2. Read statement of progress upon the Madras Harbour Works for the quarter ending 31st December 1891.

Recorded and resolved that this statement be submitted to Government.

* * * * * *

(True Extract.)

(Signed) C. PINSENT,
Secretary, Harbour Trust Board.

PROGRESS STATEMENT No. 25.

MADRAS HARBOUR WORKS.

STATEMENT showing progress during quarter ending 31st December 1891 as shown on accompanying tracing No. 24.

NOTE.—The figures in black type denote for comparison progress and quantity of work done in quarter ending December 1890.

No. of item	Particulars and quantity of work, &c.	Column	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Sub-heads of work.		Rubble base.	Pier head.	Wave breaker.	Concrete cap-ping.	Base protec-tion.	Rubble base.	Pier head.	Wave-breaker.	Concrete cap-ping.	Base protec-tion.	At works.	At quarries.	Sand line.	Beach im-provements.	Pulliyaram quar-ries outturn.	Concrete block-making.	Protective works.	Total expenditure.
			NORTH PIER.					SOUTH PIER.					RAILWAY LINES.							
1	Rubble stone deposited from boats	Tons.																		
2	Do. do. from wagons	"																		
3	Total quantity rubble stone received on works	"																		
4	Do. blasted chips do.	"																		
5	Concrete Blocks, set by divers	No.	Nil. 9																	
6	Do. deposited in wavebreaker	C. yds.	146 20																	
7	Do. made for superstructure	"																		
8	Do. do. pier head	"		38 8																
9	Wrought iron cramps fixed in position	"																		
10	Total outturn of concrete	C. yds.															9,778 19,616	9,403 1,326	3,947 19,616	
11	Advance or progress of completed superstructure	Rly. feet																		
12	Rubble base protected with concrete	"																		
13	Metre gauge, 40 lb. per yard laid new	"																		
14	Do. do. relaid or renewed	"																		
15	Do. do. taken up	"																		
16	Broad gauge, 50 lb. per yard laid	"																		
17	Do. do. relaid or renewed	"																		
18	Do. do. taken up	"																		
19	Titan gauge, 75 lb. per yard laid new	"																		
20	Do. do. relaid or renewed	"																		
21	Do. do. taken up	"																		
22	.....	"																		
23	.....	"																		
24	Approximate expenditure under sub-heads of work	Rs.	1,348	3,044	2,872	..	..	506	5,101	897	..	..	..	..	..	..	24,472	8,045	* 9,308	62,296

Rd. casks of cement received on works during quarter ending 31st December 1891, containing .. 1714 do. issued for do. .. 11,765 do. balance in store at end of do.

TONS. CWTS. QRS. LBS.
Nil. 14 0 1 6 3 25 2,103

MADRAS,
7th January 1892.

(Signed) J. J. CHISHOLM,
Engineer, Harbour Trust Board.

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No. 168, Marine.

Transferred to the Public Works Department.

(Signed) J. F. PRICE,
Chief Secretary.

29th January 1892.

From W. P. AUSTIN, Esq., C.S., Chairman, Harbour Trust Board, to the Chief Secretary to Government, dated Madras, 7th March 1892, No. 3794.

I have the honour to submit, herewith, for the information of Government, comparative statement of expenditure upon the Madras Harbour Works during quarter ending 30th September 1891.

No. 462, Marine.

Transferred to the Public Works Department.

(Signed) J. F. PRICE,
Chief Secretary.

10th March 1892.

ORDER—dated 22nd March 1892, No. 950 W., Public Works.

The report of progress for the quarter ending 31st December 1891 and statement of expenditure for the previous quarter, as compared with the sanctioned estimate, will be forwarded to the Secretary of State for India together with the plan.

2. A copy of the report and statement of expenditure will also be forwarded for the information of the Government of India.

3. The report for the quarter ending 31st March 1892 should be prepared in the amended form required by the Secretary of State (this G.O., No. 180 W., dated 12th February 1892).

(Here enter No. 951 W., Public Works, dated 22nd March 1892.)

(True Extract.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Chairman, Harbour Trust Board.
" Marine Department.

ENDORSEMENT—dated 22nd March 1892, No. 951 W., Public Works.

Copy of the above forwarded to the Government of India.

(By Order.)

(Signed) J. PENNYCUICK, Colonel, R.E.,
Secretary to Govt., P.W.D.

Exd. A. D. Xavier.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated March, 22nd

Recd. *Encl.*

G.O., 22nd Mar. 1892, Nos. 950 951 W.

MARCH.

Madras Harbour Works

Forwarding copy of the progress report of the — for the quarter ending 31st December 1891 and statement of expenditure for the previous quarter as compared with the sanctioned estimate.

950/3

22ND MARCH 1892, No. $\frac{4}{950}$ W., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our despatch, No. $\frac{15}{2099}$ W., dated 10th November 1891, we have the honour to forward a copy of our Proceedings, No. 950 W., dated 22nd March 1892, embodying a report of progress of the Madras Harbour Works for the quarter ending 31st December 1891 and a statement of expenditure for the previous quarter as compared with the sanctioned estimate.

2. A plan showing the state of the works at the end of the quarter ending 31st December 1891 is also forwarded.

3. The instructions contained in your Lordship's despatch, No. 1 (Public Works), dated 7th January 1892, in regard to an amended form of report have been duly noted for future guidance and the report for the quarter ending 31st March will be prepared accordingly.

We have the honour to be,

My Lord,

Your Lordship's most obedient, humble servants,

(Signed) WENLOCK.

(„) H. E. STOKES.

(„) J. H. GARSTIN.

FORT ST. GEORGE,
22nd March 1892.

Exd. A. D. Xavier.

GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. $\frac{4}{950\ W.}$ dated 22nd Mar. 1892.

Forwarding copy of Proceedings embodying the progress report of the Madras Harbour Works for quarter ending 31st December 1891 and statement of expenditure for the previous quarter as compared with the sanctioned estimate.

950
5

13TH DECEMBER 1892, No. 3414 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From W. P. AUSTIN, Esq., I.C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated 28th October 1892, No. 2871.

In continuation of my No. 2299, dated 16th September, I have now the honour to submit, for the information of Government and the Right Honorable the Secretary of State for India, a report upon the Madras Harbour for the quarter ending 30th September 1892.

2. During this period 158 vessels with a net registered tonnage of 261,781 have entered the Harbour and eight vessels of a tonnage 1,262 net registered anchored outside.

3. Appended are returns of imports and exports for the half year 1st April to 30th September, which disclose a general falling off in all articles of importance, with the exception of coal imported and tanned skins and hides exported.

4. This is due to the general distress which has prevailed in the districts for want of rain until the past south-west monsoon set in and to the uncertainty of exchange.

5. It is satisfactory to note that the increasing importance of the gold mines in the province of Mysore continues to maintain the demand for British coal, and that the tanning industry shows no depression.

6. The decline in imports of stores and material by the Madras and South Indian Railway Companies is even more marked during the quarter under review than in the preceding three months.

7. The imports of rice and food-grains, which, owing to scarcity, had attained large dimensions during the year 1891–92, have been, since 30th June, reduced to small quantities, and this indicates returning prosperity in the surrounding districts.

8. As the south-west monsoon has been plentiful, the ordinary articles of import and export should show a recovery from their present depressed condition in the near future; but the permanent continuance of commercial prosperity at this port must depend upon the facilities given by direct communication between the shipping and railways, and, unless this is afforded, the expenditure upon the Harbour will, to a great extent, be wasted and will merely impose a heavy burden upon local trade, for the large payments to Government on account of interest and refund of capital advances prohibit for the present any reduction in dues

9. It is to be noted that the receipts under all heads for the half year aggregated Rs. 2,82,857, while interest payable to Government under section 30 of the Harbour Trust Act and repayment of loan amounted to Rs. 2,87,039, in other words more than six months' receipts are required to meet these two liabilities of the Trust.

10. The Bombay Port Trust, with a very much larger indebtedness to Government and an enormously greater trade, has to refund to Government only the same sum as Madras, viz., one lakh of rupees annually, and, not only this, for from the last report of the Bombay Trust it would appear that the Bombay Government does not require the Bombay Trust to refund this amount annually as a matter of course, but permits it to be utilised upon capital expenditure.

11. The Trustees of the Madras Harbour would bring prominently to notice the disadvantage in this respect under which Madras labours, and would request that Government may take the matter into consideration, with a view to granting some remission in this very heavy impost upon the trade of the port.

12. The total expenditure of the Trust, including interest and refund, amounted to Rs. 3,89,406, or Rs. 1,06,549 in excess of receipts, but the current half year, as these two items will not recur in it, should restore the equilibrium, and, according to estimate, leave a small addition to the credit balance at the end of the year.

13. It is unsatisfactory that this result can only be attained by maintaining the existing rates of Harbour dues, for it was anticipated that the construction of the Harbour would tend to reduce charges.

14. This end has not been arrived at yet, and cannot be, while the Trust has to make such large payments annually for interest and refund of advances, which, as pointed out above, appear to be out of all proportion to the volume of the trade at this port as compared with Bombay.

15. I annex a very interesting report from the Board's Acting Engineer of the progress made upon the reconstruction of the Harbour during the quarter. Progress has been comparatively slow on account of the greater depth at which the pier heads are founded and the necessity for excavating the rubble base.

16. The Board would request that the special attention of Sir Alexander Rendle may be invited to para. 3 of the Engineer's report regarding the laterite foundation, which, it will be noted, came up, when dredged, to a large extent in the form of gravel, indicating the unsuitability of this kind of material to form the base for a pier.

17. This laterite when deposited some 12 to 15 years since consisted, it is understood, of pieces of considerable dimension, and the report made by the Engineer that it is now merely gravel seems to indicate that the action of the sea-water upon it in that comparatively short time has tended to disintegrate it.

18. The stability of the whole structure would appear to depend in a considerable degree upon that of the pier heads; and it is understood that Sir Alexander Rendle attached great importance to this when he directed them to be founded deeper and built with a wider section.

19. If the base is composed of unsuitable material, the permanent stability of the pier heads would appear to be endangered, and the Trustees would esteem it a favour if they might be furnished with Sir Alexander Rendle's views at his earliest possible convenience, more especially as to his opinion regarding the founding of the iron caisons containing concrete *en masse* upon such a foundation.

20. The progress at the North pier has been considerably better than at the South for reasons given by the Engineer.

21. The new all-round titan crane has worked well, except in minor details as reported, which defects the builders would probably like to be informed of.

22. The accretion of sand to the south of the Harbour has been less than normal; and it is to be noted, in conjunction with this, that the bay caused by erosion to the north of the extended revetment is not of so deep an indentation as has

usually been formed during the south-west monsoon at the end of the old revetment, where it terminated at Cassimode, before being extended further north.

23. The subsidence of the stone in rear of the revetment, indicating, as the Board's Engineer observes, that the action of the sea draws away the sand from under the rubble, it is a matter which must be closely watched, for the erosion to the north of the Harbour apparently points to an indefinite future expenditure extended to an indefinite period.

24. It is satisfactory to note that the sea bottom within the Harbour remains practically unchanged.

25. Referring to the accounts appended to the Engineer's report, it is to be observed that the expenditure upon the works up to 30th September left a balance of Rs. 5,45,707 available to complete the Harbour, while the estimated cost of completing the works amounts to Rs. 6,30,680.

26. This apparent excess does not indicate any anticipated additional expenditure over the revised sanctioned estimate; the difference is accounted for by the fact that the proceeds of sale of plant cannot be brought to account till realised after completion of the works and credit has been taken in the estimates for this.

27. The balance of sanctioned advances of cash available is, therefore, in round numbers 5½ lakhs of rupees, while about an extra lakh will be required to complete the sanctioned work, the excess being recouped, it is anticipated, sale of plant.

ENCLOSURES.

Statement of Receipts and Charges from 1st April to 30th September 1892.

		RS. A. P.	RS. A. P.	RS. A. P.
Opening balance—				
Government securities (par value 5,00,000)			4,67,097 8 10	
1. Cash in the Bank of Madras		6,77,942 3 2		
2. General cash in office		108 6 6		
3. Advance for contingencies		500 0 0		
			6,78,550 9 8	
				11,45,648 2 6
Receipts.				
1. Harbour Dues collections—				
Beach import		72,989 15 8		
Pier do.		29,885 9 2		
Beach export		8,888 1 7		
Pier do.		23,670 3 7		
Storage		1,140 13 2		
Wharfage		4,435 5 4		
Cranage		13,072 1 10		
Penalties (section 84)		...		
Demurrage		...		
				1,54,082 2 4
Porterage—				
Beach		28,564 13 2		
Pier		16,153 11 3		
Haulage		4,733 12 9		
Miscellaneous		2,550 3 9		
				52,002 8 11
Miscellaneous—				
Harbour Trust properties		832 1 10		
Provisions		319 12 6		
Water collection		1,851 0 0		
Sundries		89 0 5		
				3,091 14 9

9. It is to be noted that the receipts under all heads for the half year aggregated Rs. 2,82,857, while interest payable to Government under section 30 of the Harbour Trust Act and repayment of loan amounted to Rs. 2,87,039, in other words more than six months' receipts are required to meet these two liabilities of the Trust.

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usually been formed during the south-west monsoon at the end of the old revetment, where it terminated at Cassimode, before being extended further north.

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ENCLOSURES.

Statement of Receipts and Charges from 1st April to 30th September 1892.

	Rs. A. P.	Rs. A. P.	Rs. A. P.
Opening balance—			
Government securities (par value 5,00,000)		4,67,097 8 10	
1. Cash in the Bank of Madras ...	6,77,942 3 2		
2. General cash in office	198 6 6		
3. Advance for contingencies ...	500 0 0		
		6,78,550 9 8	
			11,45,648 2 6
Receipts.			
1. Harbour Dues collections—			
Beach import	72,989 15 8		
Pier do.	29,885 9 2		
Beach export	8,888 1 7		
Pier do.	23,670 3 7		
Storage	1,140 13 2		
Wharfage	4,435 5 4		
Cranage	13,072 1 10		
Penalties (section 84)	...		
Demurrage	...		
			1,54,082 2 4
Porterage—			
Beach	28,564 13 2		
Pier	16,153 11 3		
Haulage	4,733 12 9		
Miscellaneous	2,550 3 9		
			52,002 8 11
Miscellaneous—			
Harbour Trust properties ...	832 1 10		
Provisions	319 12 6		
Water collection	1,851 0 0		
Sundries	89 0 5		
			3,091 14 9

	RS. A. P.	RS. A. P.	RS. A. P.
II. Contribution from Port Funds ...	...	...	65,000 0 0
III. Interest realised on Government of India 4 per cent. promissory notes	...	...	8,680 13 6
		Total ...	14,28,505 10 0
Charges.			
I. Interest (under section 30) ...	...	1,87,039 7 10	
II. Repayment of loan for construction of Harbour	...	1,00,000 0 0	
			2,87,039 7 10
III. Establishment, &c.—			
1. Chairman's salary	2,400 0 0		
2. Secretary's do.	4,550 0 0		
3. Correspondence department.	1,733 12 0		
4 Accounts department ...	3,019 3 9		
5. Cash department	1,938 6 10		
6. Traffic department (Shore staff)	13,006 9 10		
7. Preventive service ...	6,246 12 0		
8. Do. boatmen ...	594 10 1		
9. Contribution to Government for pensions	426 2 8		
10. Fees to Trustees	3,090 0 0		
11. Contribution to Provident fund	49 1 11		37,054 11 1
IV. Contingencies—			
(*a*) Subject to regular audit—			
Postage	31 15 6		
Receipt stamps ...	101 8 0		
Telegrams ...	...		
Furniture	...		
Fees for audit	450 8 0		
Law charges	35 0 0		
Stationery and printing ...	1,716 10 10		
Advertisement charges ...	2 6 0		
Uniform for preventive service	280 0 0		2,618 0 4
(*b*) Admissible without detail audit—			
Overtime fees to establishment.	2,062 13 6		
Do. to preventive service and boatmen.	1,324 5 4		
Miscellaneous	1,841 4 11		5,228 7 9
V. Refunds			1,515 6 7
VI. Petty construction and repairs—			
New works	...		
Repairs	10,896 13 2		
Tools and plant	9,499 12 6		
	...		19,896 9 8
VII. Porterage—			
1 Coolies, pier	6,627 2 1		
2. Do. Beach and Custom-house ...	21,681 14 9		
3. Madras Railway Company ...	483 5 6		
4. South Indian Railway Company	136 15 0		
5. Coasting cargo	404 8 1		
6. Boat hire	1,196 3 9		
7. Claims for losses and damage.	533 13 4		
8. Engine charges	724 9 1		
9. Refunds	438 6 7		
10. Steam-crane charges ...	1,340 13 7		
11. Contribution to cooly Provident fund	450 10 0		34,018 5 9

	RS. A. P.	RS. A. P.	RS. A. P.
Contingencies—			
(*a*) Subject to regular audit—			
Postage	...		
Receipt stamps	6 11 0		
Telegrams	...		
Furniture	...		
Tarpaulins	152 0 0		
Law charges	25 0 0		
Stationery and printing ..	411 13 0		
Advertisement charges ...	...		
Lighting pier and yards ..	732 8 0		
(*b*) Admissible without detail audit—			
Miscellaneous ...	...		1,328 0 0
	...		707 6 11
		Total Expenditure ...	3,89,466 7 11
Balance on 30th September 1892—			
Government securities (par value 9,00,000)	...	8,97,311 4 10	
Cash in the Bank of Madras ...	1,41,068 8 10		
General cash in office	219 4 5		
Advance for contingencies ...	500 0 0		
		1,41,787 13 3	
			10,39,099 2 1
		Total ...	14,28,505 10 0

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

I.—Statement of goods imported from Foreign ports.

	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Apparel and effects ..	Packages ..	1,579	1,368	1,217	851	1,347	212	154	366
Alum	Barrels ..	424	496	504	1,233	328	156	50	206
Asphalte, tar and pitch	Casks ..								
Acids	Cases	2,296	2,797	3,133	3,623	4,439	913	392	1,305
Arms and guns ..	Do.	791	1,484	775	1,362	1,854	799	304	1,103
Arrack	Casks	188	516	336	126	442	122	28	150
Blankets	Bales	665	832	773	346	884	146	312	458
Beef and pork ..	Cases	68	25	36	58	119	4	16	20
Bricks	100	1	2	..	..	36	..	..	..
Beer	Cases	580	420	1,497	222	1,021	170	..	170
	Barrels	7,658	6,697	5,664	6,606	6,123	2,242	2,312	4,554
	Hogsheads ..	..	2,160	935	110	1,140	639	138	777
Boiler	No.	7,170	4,424	3,649	8,217	6,808	2,517	1,579	4,096
Corks	Bundles	45	33	19	32	51	7	6	13
Canvas	Bales	181	191	133	38	88	14	13	27
Candles	Cases	334	140	77	244	121	59	38	97
Colours	Do.	11,911	14,278	20,580	18,515	15,637	8,329	9,047	17,376
Confectionery - provisions and oilmanstores	Do.	898	1,980	1,056	2,698	3,838	465	1,147	1,612
Crockery and glassware	Crates and casks ..	17,425	17,042	14,214	17,896	23,395	5,047	4,253	9,300
Chalk	Barrels	2,990	2,942	3,018	4,099	4,538	1,104	739	1,843
Cement	Casks	292	377	95	178	370	15	50	65
Cast-iron pipes and tubes	Tons	6,742	17,203	8,868	7,049	14,622	4,315	1,430	5,745
Camphor	Tubs	451	683	1,009	950	335	435	370	805
Coal, coke and fuel ..	Tons	2,615	2,675	1,516	1,556	4,739	1,091	1,132	2,223
Coal	Do.	6,054	13,773	11,992	16,688	..	..	..	..
Coke	Do.	..	..	..	..	33,686	17,283	10,494	27,777
Crackers	Cases	1,200	879	975	1,134	578	101	510	611
Copper plates and tiles	No.	3,833	198	5,012	1,594	470	..	724	724
Corrugated iron ..	Packages	258	61	449	2,613	1,802	90	109	199
Dynamite	Cases	2,960	1,998	6,450	9,230	18,048	3,220	316	3,536

I.—Statement of goods imported from Foreign ports—*cont.*

—	Packages	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Earthenware	Crates	3,837	2,104	794	1,913	2,318	220	376	596
Fire clay	Casks	43	284	147	23	2,768	56	..	56
Flour	Bags and barrels	785	483	675	367	1,417	296	275	571
Flannel	Bales	56	74	23	58	54	3	9	12
Gunpowder	Packages	700	476	962	1,746	6,667	1,100	2,608	3,708
Harmonium	Cases	8	4	11	9	30	..	3	3
Hardware	Cases and casks	7,670	4,247	3,924	3,954	8,234	1,906	1,331	3,237
Hops	Packages	615	269	115	129	129	19	17	36
Iron	Tons	19,902	17,771	12,762	18,238	13,737	6,946	4,923	11,869
Iron safes	No.	411	577	348	241	296	90	36	126
Kerosine oil	Cases	86,489	248,024	248,505	345,000	397,862	28,400	25,835	54,235
Lime water	Do.	126	108	31	45	..	..	..	..
Malt	Bags	61	505	609	354	445	88	300	388
Millinery and haberdashery	Cases	2,043	1,649	1,393	1,356	1,609	233	551	784
Matches	Do.	6,087	11,739	4,928	7,916	10,665	2,639	2,277	4,916
Machinery	Tons	640	1,752	1,799	1,600	3,099	836	707	1,593
Nails	Kegs	9,871	19,256	4,409	13,287	13,744	4,471	664	5,135
Oil and turpentine	Drums	3,963	6,984	8,863	6,942	7,225	2,355	1,903	4,258
Piece-goods and twist	Cases and bales	76,522	105,495	97,383	82,649	85,079	17,281	11,046 4,282	..
Paper	Bales	5,526	3,233	3,988	4,546	6,546	1,857	1,021	2,878
Piano	No.	102	102	136	123	153	28	28	56
Printing types	Cases	419	330	348	263	492	409	138	547
Pig lead	No.	1,013	1,895	2,647	1,420	2,198	266	342	608
Paint	Kegs	5,784	7,837	7,945	7,457	7,758	3,833	3,652	7,485
Rattan	Bundles	1,945	949	6,527	883	3,823	2,117	662	2,779
Soaps	Cases	1,544	2,075	2,191	1,996	1,650	172	140	312
Salt	Do.	938	488	620	226	383	194	30	134
Steel	Cases and casks	..	921	3,577	874	864	231	188	469
Steel bundles and bars	No.	..	..	..	5,746	11,261	3,836	421	4,257
Steel hoop	Bundles	..	..	..	12,566	5,567	1,189	..	1,189
Shovels	Do.	24	172	13	747	275	197	209	406
Sodawater bottles	Crates	708	846	997	840	1,395	462	489	951
Sulphur	Casks	425	825	831	633	752	335	66	401
Shot	Kegs	306	220	348	240	177	..	1	1
Sundries	Packages	34,365	32,262	39,934	48,364	48,408	6,143	5,947	12,090
Specie	No.	1,877	1,330	1,541	1,115	1,229	253	203	456
Sugar	Bags	..	..	..	2,250	2,152	248	20	268
Slates and pencils	Cases	303	1,389	645	1,101	1,242	161	248	409
Spelter	Cakes	7,465	13,343	3,265	11,342	836	2,144	..	2,144
Saw	Cases	49	34	7	68	70	30	4	34
Twine and rope	Bales and coils	362	71	221	183	438	65	26	91
Tin plates	Boxes	3,611	4,194	3,771	4,994	5,608	845	606	1,445
Wine and spirits	Cases	38,227	45,173	46,479	40,857	37,877	10,793	11,896	22,689
	Casks	..	2,094	3,240	2,739	863	111	327	438
	Puncheons	2,105	255	392	149	369	109	54	163
Window glasses	Cases	4,498	1,987	5,158	8,297	5,972	2,779	2,705	5,484
White and red lead	Kegs	1,040	859	969	495	681	144	213	357
Yellow metal	Cases	3,141	907	2,722	4,309	3,076	451	447	898
Zinc sheets	Packages	1,696	1,221	1,174	595	2,749	476	371	847
Horses	No.	619	837	696	611	816	3	297	300
Ponies	Do.	3	3	6	17	70	3	53	56
Cows	Do.	2	5	5	..	59	..	5	5
Dogs	Do.	21	14	13	10	13	..	..	..
Elephants	Do.	..	..	1	25	10	..	..	..

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

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Stores	Packages	186,311	34,697	81,723	51,879	82,105	13,429	2,111	15,540
	Tons	..	..	171	467	3,605	389	..	389
Fuel	Do.	4,884	5,587	9,753	4,673	..	..	..	..
Coke	Do.	908	997	645	838	1,487	141	..	141
Coal	Do.	718	52	2,702	4,301	27	..	..	..
Timber	Do.	831	1,622	1,483	3,800	2,477	569	42	611
Fire brick	100	..	141	140	165	115	..	..	..

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

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Stores	Packages	140,270	109,131	694,812	618,937	68,282	5,718	4,901	10,619
Fuel	Tons	..	856	..	..	..	..	..	..
Coke	Do.	..	..	..	..	14	..	..	..
Coal	Do.	3,091	5,276	6,582	5,980	..	..	..	..
Timber	Do.	..	10	..	..	..	..	..	..
Boiler	No.	..	..	10	55	4	..	5	5

IV.—Statement of goods imported from Coast ports.

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Apparel and effects	Packages	149	378	414	634	451	105	55	160
Alum	Barrels	15	51	56	..	10	5	76	81
Acids	Cases	50	149	11	99	89	11	5	16
Animals	No.	..	..	..	210	..	10	..	10
Arms and guns	Cases	21	15	49	10	45	4	1	5
Boilers	No.	2	3	1	7	2	..	..	..
Bricks and tiles	100	1,577	120	1,239	1,630	1,396	..	10	10
Coffee	Bags	757	715	461	349	379	366	95	461
Candles	Cases	996	1,871	682	..	..	..	..	..
Colours	Do.	635	1,667	1,067	1,541	1,225	378	861	1,239
Crockery and glassware	Do.	216	782	413	305	322	96	87	183
Coal	Tons	1	2,351	186	14,884	13,249	600	3,692	4,292
Carpets	Bales	137	112	178	187	77	20	25	45
Camphor and benjamin	Tubs	1,547	1,483	1,585	4,640	682	248	419	667
Copra	Bags	2,844	191	124	..	32	..	..	..
Crackers	Cases	..	..	10	..	..	..	..	..
Copper	Do.	772	1,350	1,061	..	1,667	366	864	740
Do.	Tiles and ingots	..	..	..	11,053	1,071	96	..	..
Cutch and lac	Packages	..	..	..	..	5,703	4,415	369	725	1,094
Cocoanuts	No.	10,392	900	600	..	3	..	..	..
Earthenware	Crates	97	169	30	23	392	1,424	..	1,424
Do.	Pipes	690	2,080	..	..	2,626	886	2,339	3,225
Firewood	Tons	396	1,212	892	..	..	..	..	..
Flour	Bags and barrels	1,689	2,819	4,352	4,177	7,248	2,334	2,889	5,223
Gunnies	Bales	7,197	7,993	11,863	10,786	7,930	381	1,024	1,405
Gram and peas, &c.	Bags	168,350	126,942	191,357	225,739	271,682	73,695	109,441	183,136
Garlic	Do.	3,807	1,899	7,077	8,523	2,945	20	970	990
Hardware	Cases	737	542	469	605	641	120	88	208
Horns	Bundles	1,068	792	1,043	681	880	239	311	550
Hides	Bales	7,138	4,449	7,400	6,936	6,127	3,351	2,311	5,662
Iron	Tons	639	277	457	400	231	48	49	97
Iron safes	No.	6	65	47	19	31	10	11	21
Leaves	Bundles	6,945	5,110	5,796	5,574	6,508	773	1,522	2,295
Machinery	Tons	6	171	109	251	158	15	6	21
Millinery and haberdashery	Cases	155	254	268	189	208	41	58	99
Oil and turpentine	Drums	2,244	2,794	2,540	2,846	8,340	1,686	1,357	3,043
Paddy	Bags	..	..	..	..	..	34,781	14,429	49,210
Piece-goods	Cases and bales	5,080	7,306	6,237	3,028	3,802	514	963	1,477
Paper	Bales	3,223	3,820	5,003	3,985	3,128	662	1,138	1,800
Paint	Kegs	49	212	1,098	99	224	14	210	224
Piano	No.	7	6	7	5	15	4	4	8
Rice	Bags	42,400	26,769	69,446	223,751	1,147,048	76,303	45,699	122,002
Rose-water	Cases	877	1,409	1,867	715	1,434	762	557	1,319
Seeds	Bags	14,285	13,066	13,212	12,044	30,406	7,998	6,745	14,743
Skins	Bales	8,314	5,729	5,727	5,387	6,199	1,130	948	2,078
Silk	Do.	1,045	837	883	825	1,051	170	280	450
Sandalwood	Bundles	227	145	297	53	143	3	26	29
Sugar	Bags	4,163	6,900	2,816	2,134	1,381	158	190	348
Specie	No.	107	201	184	37	202	14	40	54
Sundries	Packages	44,567	43,462	38,472	40,653	47,533	18,376	10,059	28,435
Soap	Cases	12	105	179	363	445	6	..	6
Sulphur	Casks	..	48	173	..	471	334	..	334
Spice	Packages	..	..	..	3,674	359	182	68	250
Twine and rope	Bales and coils	1,545	1,164	541	942	839	101	240	341
Tin plates	Boxes	630	1,118	1,322	708	1,807	93	289	382
Twist	Bales	3,782	4,964	3,434	1,338	1,126	209	600	809
Turmeric	Bags	4,635	5,790	8,421	10,751	7,224	1,086	1,515	2,601
Timber	Tons	14,273	17,377	17,889	16,850	15,137	2,590	2,586	5,176
Tea	Cases	3,830	1,421	3,813	4,785	1,321	2,272	864	3,136
Yellow metal	Do.	636	155	342	809	6	193	107	300
Horses	No.	2	..	..	..	1	8	..	8

V.—Statement of goods exported to foreign ports.

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Beer and ale	Cases	22	13	30	..	18	2	..	2
	Casks	21	..	..	..	..	..	7	7
	Hogsheads	..	..	2	..	60	..	..	..
Cinchona bark	Bales	..	1	1	..	3	..	..	..
Cuttles	Bags and bundles	2,791	2,185	1,229	1,346	471	110	327	437
Cigars	Cases	6,333	2,225	8,262	1,362	2,760	..	..	..
Coffee	Bags	1,126	1,233	1,428	942	1,249	146	139	285
Cotton	Bales	14,879	23,456	15,516	22,708	23,764	12,152	3,406	15,558
Cotton twist	Do.	32,394	55,174	101,837	77,922	48,262	8,512	8,387	16,899
Coriander and omum seeds	Bags	2,893	3,964	5,956	8,271	4,229	2,294	2,907	5,201
Carpets	Bales	3,821	3,281	11,610	1,385	8,218	361	260	621
Coal	Tons	526	645	725	324	418	50	90	140
Deer horns	Packages	50	182	115	..	905	213	..	213
Explosive	Cases	866	874	1,366	1,311	1,574	364	743	1,107
Firewood	Tons	9	14	26	..	21	..	1	1
Four-wheel carriage	No.	8	23	..	..	..	..	..	..
Ground nuts	Bags	3	30	3	2	8	1	1	2
Gram, peas, &c.	Do.	105,529	95,642	206,096	126,320	98,132	11,610	11,110	22,720
Horns, cow and buffalo	Tons	2,379	937	1,454	..	519	..	..	..
Hides, tanned	Bales and bundles	242	189	60	84	62	15	4	19
Indigo	Cases and chests	20,376	17,868	17,532	16,460	21,848	5,144	7,352	12,796
Iron	Tons	27,482	22,762	27,918	24,463	14,622	2,762	2,781	5,543
Jaggery	Bags	20	29	23	..	2	..	..	..
Myrabolans	Bags	79,358	23,620	111,032	34,135	28,985	13,736	..	13,736
Miscellaneous	Packages	1,744	195	452	2,576	235	60	..	60
Onions	Bags and baskets	19,381	25,807	17,990	16,335	37,808	8,200	8,889	17,179
Oil	Casks	6,089	7,979	9,078	12,022	21,954	4,458	935	5,393
Piece-goods	Bales and cases	4,038	3,372	3,419	5,843	6,205	1,675	1,281	2,956
Potatoes	Bags and baskets	2,892	3,837	2,703	2,284	2,437	157	..	157
Poonac	Bags	14,847	13,116	15,187	26,134	33,880	5,962	4,166	10,127
Piano	No.	3	19	8	3	41	5	2	7
Rice	Bags	5,250	17,589	65,475	2,059	1,138	1	..	1
Redwood	Tons	1,145	1,332	2,052	1,809	699	342	384	726
Seeds, gingelly and castor	Bags	132,295	20,187	89,411	19,021	1,813	652	65	717
Skins, sheep and goat, tanned	Bales	31,229	32,498	30,309	31,205	32,104	7,435	10,035	17,470
Sandalwood	Bundles	849	672	837	1,728	1,925	43	..	43
Spirits and wine	Cases	744	135	291	..	332	..	18	18
	Casks	49	5	87	..	977	1	39	40
	Puncheons	..	..	18	..	..	..	..	..
Sugar	Bags	912	1,112	7,206	..	599	21	1	22
Specie	Boxes	161	155	..	55	94	21	..	21
Tamarind	Bundles	3,673	8,277	2,549	1,156	6,445	1,969	1,467	3,436
Turmeric	Bags	24,830	1,898	1,626	..	2,159	217	30	247
Tea	Cases	4,360	4,275	3,822	2,384	2,265	424	785	1,209
Two-wheel carriage	No.	..	..	..	3	1	..	..	..
Wool	Bales	991	970	1,048	1,196	1,021	436	443	879
Yellow metal	Tons	98	3	5	..	107	..	..	..

VI.—Statement of goods exported to Coast ports.

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1891.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Beer and ale	Cases	202	249	456	289	352	81	86	167
	Casks	28	18	110	159	159	16	10	26
	Hogsheads	..	..	1	..	2	..	..	..
Cinchona bark	Bales	..	1	19	47	7	1	5	6
Cuttles	Bags and bundles	80	178	186	..	295	..	84	84
Cigars	Cases	2,341	2,008	3,533	4,592	2,064	1,264	1,126	2,390
Coffee	Bags	857	1,488	1,268	1,345	1,418	311	277	588
Cotton	Bales	697	500	574	606	507	806	334	1,140
Cotton twist	Do.	3,077	1,072	4,761	8,621	5,731	532	1,312	2,144
Coriander and omum seeds	Bags	2,933	3,816	3,075	5,103	1,698	764	950	1,734
		2,435	2,728	7,071	4,783	2,970	1,531	1,012	2,543

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VI.—Statement of Goods exported to Coast ports—*cont.*

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Carpets	Bales	10	34	26	46	68	14	11	25
Coal	Tons	249	..	94	975	273	25	..	25
Deer horns	Packages	4	85	..	84	105	1	..	1
Explosive	Cases	152	201	303	55	2,068	315	32	347
Eggs	Pots	2,631	2,717	3,882	2,801	1,165	157	193	350
Firewood	Tons	67	28	8	..	2	..	..	..
Four-wheel carriage	No.	21	26	9	34	21	9	5	14
Ground-nuts	Bags	22,711	30,757	20,998	61,463	27,790	7,797	731	8,528
Gram, peas, &c.	,,	701	15,204	8,987	3,568	521	66	587	653
Horns, cow and buffalo	Tons	79	198	336	30	310	28	68	96
Hides	Bales and bundles	246	407	495	508	373	111	109	220
Indigo	Cases and chests	227	405	829	419	165	..	16	16
Iron	Tons	324	989	743	850	2,244	685	1,017	2,402
Jaggery	Bags	433	376	296	..	268	86	4	90
Kerosine-oil	Cases	250	1,516	4,680	3,403	10,327	212	216	428
Myrabolams	Bags	714	322	130	535	1,054	1	6	7
Miscellaneous	Packages	26,540	12,419	20,868	35,308	50,510	12,262	11,366	23,628
Onions	Bags and baskets	15,838	9,705	11,418	21,141	29,442	2,036	4,512	6,548
Oil	Casks	1,771	790	1,344	1,261	807	285	43	328
Piece-goods	Bales and cases	3,273	3,429	3,813	6,259	5,615	1,556	2,336	3,892
Potatoes	Bags and baskets	14,485	24,220	21,992	26,479	25,687	918	7,881	8,799
Poonac	Bags	3,121	2,219	1,469	4,752	4,270	6,028	3,356	9,384
Piano	No.	..	5	42	24	23	2	4	6
Paddy	Bags	18,655	27,149	4,019	11,436	..	..	250	250
Rice	,,	8,379	6,799	8,138	8,928	5,448	3,076	1,924	5,000
Redwood	Tons	223	82	336	..	119	48	439	487
Seeds, gingelly and castor	Bags	56,137	18,574	28,756	57,167	16,803	401	955	1,356
Skins, sheep and goat, tanned	Bales	685	516	758	1,271	731	90	166	256
Sandalwood	Bundles	998	224	342	1,855	153	54	9	63
	Cases	2,529	2,142	2,038	3,049	2,982	1,256	772	2,027
Spirits	Casks	44	156	162	250	747	86	416	502
	Puncheons	..	2	16	54	15	1	2	3
Sugar	Bags	265	160	2,307	2	2	954	338	992
Spices	Boxes	301	279	154	154	55	169	133	302
Tamarind	Bundles	5,423	2,019	3,598	17,197	3,624	4,849	1,754	6,603
Turmeric	Bags	11,491	8,972	463	4,719	10,298	5,218	2,762	7,980
Tea	Cases	51	55	544	298	341	17	15	32
Two-wheel carriage	No.	4	14	8	27	..	..	6	6
Wool	Bales	9	37	567	476	766	147	190	337
Yellow metal	Tons	23	86	25	47	53	12	4	16

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

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Accountant-General.	Specie, silver	Boxes.	2,423	1,789	1,109	1,176	408	100	..	100
	,, copper	,,	352	335	1,320	3,475	5,100	..	..	..
	Silver and copper.	,,	..	174	..	..	..	..	..	..
	Notes	,,	4	19	21	8	32	..	..	..
	Packages	No.	7	..	1	..	27	..	1	1
	Packages and pieces.	,,	11,940	593	..	3	..	..	..	..
State Railway	Rails	,,	26,602	..	..	..	..	..	..	..
	Sleepers	,,	78,513	..	..	..	..	..	..	..
	Bridge works	Tons.	267	..	..	..	..	..	..	..
Public Works Department.	Boilers	No.	2	2	..	..	2	..	..	..
	Coal	Tons.	..	106	44	60	50	..	20	20
	Iron	,,	63	220	442	250	271	..	..	..
	Stores	Pkgs.	3,084	1,691	1,127	2,049	15,148	2,023	1,130	3,153
Ordnance	Coal	Tons.	136	86	1,968	939	..	..	..	..
	Ammunition	Boxes.	2,160	1,303	51	..	2,148	..	..	..
	Stores	Pkgs.	11,336	15,838	22,268	22,898	13,017	4,067	1,152	5,219
	Cement	Casks.	11,168	35,764	40,241	30,375	1,869	..	..	..
Madras Harbour Works.	Stores	Pkgs.	790	321	1,009	895	3,869	..	..	..
	Coal	Tons.	..	..	496	586	..	..	..	..

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

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Clothing ..	Packages ..	No.	2,525	1,773	2,831	1,527	1,983	589	635	1,224
Police	,, ..	,,	211	248	135	335	122	98	51	149
Salt Revenue ..	,, ..	,,	69	75	115	190	272	220	56	276
Post office ..	,, ..	,,	1,733	980	1,858	1,739	1,119	198	249	447
Medical	,, ..	,,	2,879	1,384	1,616	1,250	1,779	415	50	465
Telegraphs ..	,, ..	,,	34,690	6,899	15,414	19,211	34,768	1,752	1,949	3,701
Stationery ..	,, ..	,,	1,503	1,088	743	611	732	19	107	126
Stamps	,, ..	,,	1,263	1,435	1,499	1,647	1,961	186	656	842
Commissariat ..	,, ..	,,	3,841	1,811	1,779	4,384	8,588	2,013	1,204	3,217
Gazette Press ..	,, ..	,,	91	52	32	2,414	161	7	126	133
Marine	,, ..	,,	147	32	182	511	729	117	107	224
Superintendent, Railway Mail Service ..	,, ..	,,	270	52	81	..	..	..	..	..
Revenue Survey ..	,, ..	,,	103	252	52	32	297	73	133	206
Agriculture ..	,, ..	,,	28	1	6	292	380	209	101	310
Government Central Museum ..	,, ..	,,	13	6	4	10	15	3	2	5
Under-Secretary to Government ..	,, ..	,,	81	87	84	94	235	439	28	467
Superintendent of Prisons ..	,, ..	,,	6	3	9	..	1	2	3	5
Revenue Board ..	,, ..	,,	36	65	36	139	424	2	13	15
Forests	,, ..	,,	66	31,811	175	1,318	1,196	..	..	..
Bank of Madras.	Specie, silver ..	Boxes.	..	..	56	..	..	..	..	..
	,, copper ..	,,	..	..	13	40	28	7	..	7
Presidency College.	Packages ..	No.	..	..	2	2	..	..	..	..
School of Arts ..	,, ..	,,	..	..	..	..	3	..	..	..
Sanitary Commissioner	,, ..	,,	..	1	..	..	..	..	..	..
Inspector of Cattle Diseases	,, ..	,,	..	116	10	..	9	2	6	8
Medical College ..	,, ..	,,	11	25	15	32	31	..	2	2
Deputy Collectors ..	,, ..	,,	12	50	2	14	9	1	10	11
Camp equipage ..	,, ..	,,	5	..	1	..	..	..	..	..
Astronomer ..	,, ..	,,	4	11	6	6	23	2	7	9
Presidency Pay Master ..	,, ..	,,	1	8	6	12	2	5	3	8
Registration ..	,, ..	,,	19	24	2	3	7	1	3	4
Director of Public Instruction ..	,, ..	,,	43	..	9	5	9	..	137	137

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

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Accountant General.	Specie, silver ..	Boxes.	342	118	174	20	411	27	9	36
	,, copper ..	,,	176	136	216	330	965	173	25	198
	,, notes ..	,,	4	5	4	10	6	4	3	7
	,, packages	No.	1	1	1	6	4	..	1	1
Bank of Madras ..	,, silver ..	Boxes.	..	..	10	..	34	..	..	62
,, ,, ..	,, copper ..	,,	..	..	437	..	..	33	29	2,206
Ordnance	Packages & pieces	No.	7,476	5,765	25,038	6,564	8,595	1,083	1,123	164
Public Works Department ..	,,	,,	1,100	4,420	18,368	429	1,784	141	23	708
Clothing	,,	,,	1,401	916	1,018	1,254	1,327	225	483	590
Police	,,	,,	690	749	849	727	889	95	495	377
Salt Revenue ..	,,	,,	152	330	493	306	591	84	273	791
Medical	,,	,,	1,794	1,049	1,868	1,652	1,267	518	120	155
Telegraph ..	,,	,,	4,078	355	1,125	9,462	8,845	35	122	285
Stationery ..	,,	,,	915	777	398	799	693	53	45	98
Stamps	,,	,,	177	165	171	195	220	740	788	1,528
Commissariat ..	,,	,,	5,881	5,128	5,179	7,761	7,971	114	128	242
Gazette Press ..	,,	,,	328	445	567	476	526	92	122	214
Marine	,,	,,	926	419	307	268	399	18	5	23
Revenue Board ..	,,	,,	29	26	52	79	77	29	33	62
Revenue Settlement	,,	,,	154	157	55	87	51	50	233	289
Revenue Survey ..	,,	,,	80	31	77	74	75			

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

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Total for the six months ending 30th Sept. 1892.
Superintendent of Prisons ..	Packages and pieces ..	No.	63	151	91	71	69	35	90	125
Registration ..	,, ..	,,	29	80	61	61	66	..	..	..
Conservator of Forests ..	,, ..	,,	35	28	49	31	34	3	4	7
Quartermaster-General	,,	,,	28	..	..	..	..	..	4	4
Government Central Museum ..	,, ..	,,	9	7	6	9	10	4	15	19
Deputy Collectors ..	,, ..	,,	12	20	..	..	2	9	..	9
Camp equipage ..	,, ..	,,	244	..	..	..	..	..	..	..
Government Astronomer ..	,, ..	,,	6	5	2	..	..	11	2	13
Agriculture ..	,, ..	,,	7	..	..	5	15	2	1	3
General Hospital ..	,, ..	,,	3	..	..	..	..	..	..	..
State Railways ..	,, ..	,,	98	293	..	..	100	..	..	..
Inspector of Cattle Diseases ..	,, ..	,,	9	11	11	3	3	1	..	1
Chemical Examiner	,, ..	,,	1	..	1	3	..	..	1	1
Director of Public Instruction ..	,, ..	,,	2	9	2	16	10	3	1	4
Registrar of University ..	,, ..	,,	12	14	16	16	13	..	..	..
Collectors ..	,, ..	,,	1	..	..	..	10	..	..	..
Curator of Government Garden, Ooty ..	,, ..	,,	2	..	2	12	11	..	..	..
Engineer, Harbour Trust Board ..	,, ..	,,	..	..	1	..	..	..	..	..
Crown Officer, High Court	,, ..	,,	..	1	8	13	14	6	3	9
School of Arts ..	,, ..	,,	..	1	..	..	..	..	..	..
Chief Secretary to Government, Public Department ..	,, ..	,,	..	4	1	..	2	..	..	..
Registrar-General of Births, Deaths and Marriages ..	,, ..	,,	..	..	..	..	..	..	..	..
Inam Commissioner.	,, ..	,,	..	..	1	..	1	..	..	..
Consulting Engineer to Government Railways.	,, ..	,,	..	..	4	36	30	..	..	..

REPORT of progress on the Madras Harbour Works for the quarter ending 30th September 1892.

This report is accompanied by the following plan and statements:—

(*a*) A plan of the harbour to a scale of 200 feet to an inch showing in red the position of work done during the quarter, contours of the bottom of the harbour plotted from soundings taken by the Assistant Engineer in August and September of this year, and for comparison, the contours of the survey of 1889. The positions of the high-water marks of the 30th September and of the 30th June from the end of the revetment south of the harbour to south of the south pier are also shown.

(*b*) A statement comparing the expenditure on different sub-heads of work up to the end of the quarter with the provisions of the sanctioned estimate.

(*c*) A statement showing work done under different sub-heads and particulars of cement received and issued.

2. The different parts of the harbour works are reported on in the following paragraphs.

3. *North Pier.*—The progress on the north pier has gone on steadily during the quarter, and consists of the setting of ninety-seven blocks in the pier head, making up four courses and one block of a fifth course. The last two of these courses are the first courses on the curved

superstructure forming the pier head. The removal of stone and blocks from the bed of the old pier forms by far the largest item of work. Out of a total of ninety-two days in the quarter, sixty-five days were occupied in the preparation of the beds, and only ten in setting blocks, the balance being Sundays and holidays and days on which the sea was too rough to allow of work. The material removed was mostly laterite, and to a large extent came up in the form of gravel, indicating the unsuitability of this kind of stone to form the base of a pier. The open tined Priestman's grab was quite unsuited to the removal of this small material and a close interlocking tined grab was purchased from the Madras Railway and which has done good work. The all-round Titan has been used on this pier throughout the quarter, and has proved its usefulness for setting blocks in the superstructure, as well as for dropping the wave-breaker blocks; some alterations are, however, required to enable it to produce the best results in dredging operations. Some of the cast-iron rollers on which the upper part of the crane revolves, and which are hollow, have failed by cracking, and these have been replaced by solid rollers.

4. As the fifth course above alluded to was completed a few days after the end of the quarter, there remain thirteen courses (or about 68 feet) to be set before the cylindrical head is commenced. The iron work for the caisson for the north pier was received in July.

5. *South Pier.*—The progress on the south pier consists of the setting of 24 blocks or one course. The comparatively slow progress is accounted for by the fact, that the material to be removed at the south pier consists of blocks to a much larger extent than at the north pier, which cannot be dredged, and involving the employment of divers and the number of days on which the state of the sea would not allow the divers to work. At the end of the quarter there remained sixteen courses to be set before the commencement of the cylindrical head.

6. *Block-making.*—The fourteen blocks reported last quarter as still required have been made, thus completing the number wanted for the whole work.

7. *Foreshore, North of the Harbour.*—As will be seen from the plan submitted with this report, the usual bay has formed at the northern extremity of the revetment and, as was to be expected, the stone continues to be drawn seawards from the front slope. A sinking of the stone in rear of the revetment appears to indicate, that the action of the sea at this season still draws away sand from underneath the stone bank.

8. *Foreshore, South of the Harbour.*—The shore line has advanced, as was to be expected, since the end of last quarter, and the high-water mark was about 1,298 feet from the shore end of the pier on the 30th September. For comparison the line showing the high-water mark of the same date last year has been plotted from last year's plan and, as will be seen, is slightly in advance of this year's line. The system of observing the high-water mark is, however, not sufficiently accurate to avoid the possibility of giving an erroneous impression of the advance or retirement of the shore line when the difference is small; as the actual heights of tides on the same dates of different years vary and also the observation is affected by the state of the sea. From the observations taken it would appear that the actual difference between the shore line, south of the harbour on the 30th September 1891 and 30th September 1892 is little or nothing; a more accurate method of observing this has been ordered for the future.

9. *Sea bottom within the Harbour.*—Referring to the contours plotted from soundings taken by the Assistant Engineer (shown in red on the accompanying plan) and comparing them with the contours of the survey of 1889, the following remarks are made on the alteration of the bottom of the harbour.

10. The shore appears to have advanced seawards between the iron pier and the north pier. There is not much alteration in the bottom up to the six fathom contour, a bend in the two-and-a-half fathom contour being probably due to the stranding of the S.S. *Waverly* in November last. The six-and-a-half fathom contour shows a certain amount of advance, and the seventh and seven-and-a-half fathom contours show a reduction in depth at the sides of the harbour but little or no alteration opposite the entrance.

11. *Miscellaneous.*—The Harbour Master's office was completed and handed over to the Deputy Conservator of the Port during the quarter.

12. The attempt to pick up the chains attached to the inner line of moorings was unsuccessful, and had to be abandoned on account of the cost that would have been incurred in keeping divers employed on this work any longer.

13. The expenditure on the harbour works to the end of the quarter including establishment and contingencies is Rs. 1,18,37,679 out of a total estimated cost of Rs. 1,23,83,386 leaving a balance of Rs. 5,45,707.

MADRAS,
19th October 1892.

(Signed) F. J. WILSON,
Ag. Engineer, Harbour Trust Board.

Progress Statement No. 30.

MADRAS HARBOUR WORKS.

STATEMENT showing progress during quarter ending 30th September 1892 as shown on accompanying Plan No. 29.

No. of Item.	Particulars and Quantity of Work, &c.	Sub-heads of work.	North Pier. Rubble base.	North Pier. Pier head.	North Pier. Wave breaker.	South Pier. Rubble base.	South Pier. Pier head.	South Pier. Wave-breaker.	Concrete block-making.	Protective works.	Total expenditure during the quarter.
	NOTE.—The Figures in red denote for comparison, progress and quantity of work done in quarter ending 30th September 1891.										
		Columns.	A	B	C	F	G	H	P	Q	R
1	Concrete blocks—Set by divers	..	..	75	..	..	45	..	..	..	..
		..	..	97	..	..	24	..	..	..	..
2	Do. made for superstructure	..	..	..	..	..	..	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
3	Do. do. Pier head	..	..	9	..	..	5	..	..	..	..
		..	..	138¾	..	..	75¾	..	14	..	..
4	Total out-turn of concrete	..	..	25	..	..	12½	..	..	..	..
		..	..	22½	..	..	6¼	..	214½	..	..
5	Advance or progress of completed superstructure.	..	..	*	..	..	*	..	..	..	..
		..	..	..	..	..	..	..	..	..	..
6	Approximate expenditure under sub-heads of work.		163	32,246	381	271	9,726	349	12,176	42	55,354
	* Includes Rs. 20,728 cost of N.P. Caisson.										

	Tons.	Cwts.	Quars.	lbs.	
Nil Casks of Cement received on works during quarter ending 30th September 1892		*Nil*			Quantity due on indents.—*Nil.*
267⅝ Casks of Cement issued for on works during quarter ending 30th September 1892	47	16	0	8	
8,959½ Casks of Cement balance in store at end of quarter	1,604	9	0	23	

Estimated sum required to complete the works at the commencement of the quarter except establishment tools and plant and contingent charges	6,86,034
2. Cost of work done during the quarter	55,354
	6,30,680
3. Estimated cost of additional works found necessary during the quarter	,,
4. Estimated cost of completing the works from and after the end of quarter	6,30,680

MADRAS H. W. OFFICE,
19th October 1892.

(Signed) F. J. WILSON,
Ag. Engineer, Harbour Trust Board.

COMPARISON of expenditure to date with sanctioned estimate for the quarter ending 30th September 1892.

Sub-head of work.	AS PER ESTIMATE SANCTIONED IN SECRETARY OF STATE DESPATCH No. 1, DATED 7TH JANUARY 1892.					AS EXECUTED.					Arrears not paid.	Value of work done up to date, columns 11 and 12.
	Quantity.	Rate.	Per.	Cost.	Total.	Quantity.	Rate.	Expenditure. Total up to end of last quarter.	During the quarter.	Up to date.		
1	2	3	4	5	6	7	8	9	10	11	12	13
Expenditure up to 31st December 1891.		RS. A. P.		RS.	RS.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
1. Works	..	..	..	55,09,324	..	..	..	55,09,324 8 10	..	55,09,324 8 10	..	55,09,324 8 10
2. Establishment	..	..	..	5,29,904	..	..	..	5,29,904 0 0	..	5,29,904 0 0	..	5,29,904 0 0
3. Tools and plant	..	..	..	5,15,262	..	..	..	5,15,262 6 0	..	5,15,262 6 0	..	5,15,262 6 0
Total	..	..	..	..	65,54,490	..	..	65,54,490 14 10	..	65,54,490 14 10	..	65,54,490 14 10
Revised Estimate.												
4. Alteration and extension of block ground .. Prely.	..	..	..	5,892	5,892	..	..	5,882 3 5	..	5,882 3 5	9 13 6	5,892 0 11
North Pier.												
5. Ordinary rubble deposited from breakwater .. Tons.	13,930	1 12 0	Ton.	24,378	..	13,929$\frac{3}{4}$	1 12 0	24,377 9 0	..	24,377 9 0	..	24,377 9 0
6. Ordinary rubble deposited from boats .. .. ,,	206,896	2 0 5	,,	4,19,218	..	208,362$\frac{1}{4}$	2 1 5	4,30,570 10 2	395 14 1	4,30,966 8 3	4,404 12 2	4,35,371 4 5
7. Concrete blocks for building .. .. .. C. yds.	51,330	11 8 0	C. yds.	5,90,119	..	46,250$\frac{169}{216}$	11 12 3	5,23,363 15 4	20,728 12 9	5,44,092 2 1	..	5,44,092 12 1
8. Setting blocks at commencement of new work .. ,,	2,615	2 1 4	,,	5,415	..	2,615$\frac{5}{9}$	2 1 1	5,414 11 2	..	5,414 11 2	..	5,414 11 2
9. Setting blocks from 2,200 to 3,600 feet .. .. ,,	36,520	2 14 3	,,	1,05,569	..	36,446$\frac{7}{9}$	2 15 9	1,08,813 14 8	..	1,08,813 14 8	..	1,08,813 14 8
10. Setting blocks at pier head. ,,	12,185	9 8 11	,,	1,16,424	..	7,218$\frac{81}{110}$	9 8 2	55,087 13 2	10,970 2 11	66,058 0 1	2,596 15 7	68,654 15 8
11. Concrete in mass for filling. ,,	263	4 8 3	,,	1,188	..	263	4 8 3	1,188 0 7	..	1,188 0 7	..	1,188 0 7
12. Wave-breaker blocks .. ,,	288	9 5 7	,,	2,692	..	288	9 5 7	2,692 0 0	..	2,692 0 0	..	2,692 0 0
13. Wave-breaker concrete blocks .. .. .. ,,	77,355	10 14 11	,,	8,45,591	..	65,870$\frac{3}{4}$	11 5 7	7,47,669 15 2	..	7,47,669 15 2	..	7,47,669 15 2
14. Depositing concrete blocks. ,,	77,932	1 0 0	,,	77,928	..	66,465$\frac{4}{5}$	1 0 6	67,768 10 7	788 0 11	68,556 11 6	9 7 8	68,566 3 2
15. Concrete in protection to rubble base .. .. ,,	1,986	10 4 1	,,	20,358	..	1,069$\frac{3}{4}$	7 11 6	8,262 3 3	..	8,262 3 3	..	8,262 3 3
16. Cramps, iron .. .. No.	331	9 10 1	Each.	3,188	..	291	8 4 5	2,408 12 4	..	2,408 12 4	..	2,408 12 4
17. Concrete capping .. C. yds.	16,352	11 8 10	C. yds.	1,83,798	..	573$\frac{1}{4}$	19 13 10	11,393 14 7	..	11,393 14 7	..	11,393 14 7
18. Cost of north pier caisson and setting in position and filling same as items 26, 27, 33 and 34 .. ,,	..	..	,,	84,750	..	..	..	..	660 13 7	660 13 7	20,087 6 2	20,748 3 9
Total for North Pier ..	..	..	..	..	24,80,607	..	..	19,89,012 2 0	33,543 12 3	20,22,555 14 3	27,998 9 7	20,49,654 7 10
South Pier.												
19. Ordinary rubble deposited from boats .. .. Tons.	175,078	2 9 0	Ton.	4,49,052	..	1,70,774	2 9 10	4,41,301 12 9	334 8 9	4,41,636 5 6	4,925 14 8	4,46,572 4 2
20. Large rubble deposited from breakwater .. ,,	8,615	1 12 0	,,	15,076	..	8,614$\frac{3}{4}$	1 12 0	15,075 13 0	..	15,075 13 0	..	15,075 13 0
21. Concrete blocks for building .. .. .. C. yds.	45,066	11 3 1	C. yd.	5,04,510	..	39,415$\frac{13}{14}$	11 3 3	4,36,155 4 2	5,504 7 0	4,41,659 11 2	..	4,41,659 11 2
22. Setting blocks at commencement .. .. ,,	2,556	3 1 6	,,	7,912	..	2,556	3 1 6	7,911 13 3	..	7,911 13 3	..	7,911 13 3
23. Setting blocks from 2,550 to 3,700 feet .. .. ,,	30,160	3 7 11	,,	1,05,461	..	30,160$\frac{1}{2}$	3 7 11	1,05,461 9 4	..	1,05,461 9 4	..	1,05,461 9 4
24. Setting blocks at pier head .. .. ,,	12,350	11 1 3	,,	1,36,845	..	6,693$\frac{142}{216}$	14 12 3	87,836 2 3	8,479 8 11	96,315 11 2	2,812 13 9	99,128 8 11
25. Concrete in mass for filling .. .. ,,	602	7 9 1	,,	4,555	..	602	7 9 1	4,554 14 4	..	4,554 14 4	..	4,554 14 4
26. Concrete in cylindrical pier head .. .. ,,	2,355	15 0 0	,,	35,325	..	..	..	..	..	..	..	..
27. Concrete in filling in between coursed block work and caisson .. ,,	184	15 0 0	,,	2,760	..	..	..	..	..	..	..	..
28. Wave-breaker concrete blocks .. .. ,,	47,231	11 1 6	,,	5,24,070	..	38,754$\frac{1}{16}$	11 3 8	4,35,252 11 7	..	4,35,252 11 7	..	4,35,252 11 7
29. Depositing concrete blocks. ,,	47,714	1 5 8	,,	64,708	..	39,236$\frac{143}{144}$	1 6 5	54,467 12 4	317 9 5	54,785 5 9	134 12 0	54,920 1 9
30. Concrete in protection to rubble base .. .. ,,	1,700	9 10 6	,,	16,420	..	1,197$\frac{5}{8}$	18 6 11	13,676 11 10	1,201 0 0	14,880 11 10	..	14,880 11 10
31. Cramps, Iron .. .. No.	259	11 7 7	Each.	2,972	..	210	10 14 9	2,293 8 5	..	2,293 8 5	..	2,293 8 5
32. Concrete capping .. C. yds.	16,247	11 5 8	C. yd.	1,84,495	..	663$\frac{11}{14}$	21 2 4	14,146 0 4	..	14,146 0 4	..	14,146 0 4
33. Iron caisson .. .. No.	1	..	,,	18,000	..	..	..	21,451 11 8	276 6 5	21,728 2 1	4 4 0	21,732 6 1
34. Preparing base for and setting cylindrical pier head .. .. ,,	..	..	,,	28,665	..	..	..	..	..	..	..	..
Total for South Pier ..	..	..	..	..	21,00,826	..	..	16,33,585 15 3	16,126 8 6	16,55,712 5 9	7,877 12 5	16,63,590 2 2
Extending the Rubble Revetment protecting the foreshore north of harbour.												
35. Rubble Stone Revetment. Tons.	70,600	2 1 0	Ton.	1,45,613		74,953$\frac{1}{4}$	1 8 10	1,15,936 8 6	437 8 9	1,16,374 1 3	..	1,16,374 1 3
36. Railway Lines	..	..	..	9,849		..	..	10,914 10 10	..	10,914 10 10	..	10,914 10 10
	..	..	..	..	1,55,462	..	..	1,26,851 3 4	437 8 9	1,27,288 12 1	..	1,27,288 12 1
37. Tools and plant	..	..	..	..	6,11,656	..	..	6,33,379 8 4	2,550 9 1	6,35,930 1 5	1,030 7 3	6,36,960 8 8
38. Contingencies	..	..	..	..	2,17,415	..	..	1,71,218 4 1	1,005 7 3	1,72,223 11 4	7,354 8 7	1,79,578 3 11
39. Establishment	..	..	..	..	5,34,369	..	..	4,92,579 6 4	13,817 15 4	5,06,397 5 8	55 0 0	5,06,452 5 8
40. Materials at side (concrete blocks in yards) .. .. C. yds.	..	..	..	..	..	15,638$\frac{17}{24}$	14 0 8	2,25,257 13 3	—12,403 4 10	2,12,854 8 5	6,706 15 8	2,19,561 8 1

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Comparison of expenditure to date with sanctioned estimate for the quarter ending 30th September 1892—contd.

Sub-head of work.	As per estimate sanctioned in Secretary of State Despatch No. 1, dated 7th January 1892: Quantity.	Rate.	Per.	Cost.	Total.	As executed: Quantity.	Rate.	Expenditure: Total up to end of last quarter.	During the quarter.	Up to date.	Amount paid.
1	2	3	4	5	6	7	8	9	10	11	12
		RS. A. P.		RS.	RS.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Extending the Rubble Breakwater protecting the foreshore North of harbour.											
41. Advances to work-people								6,064 15 3	— 48 0 9	6,016 15 [illegible]	
Total of Estimate and value of work done					61,66,257			52,89,821 5 5	55,030 8 4	53,44,851 14 [illegible]	50,133 3 4
Deduct probable recoveries due to sales of Tools and Plant					1,77,311			— 60,560 13 4	—1,165 0 4	— 61,673 14 [illegible]	
Total					58,28,889			52,29,262 8 1	53,935 7 11	52,83,198 0 0	50,133 3 0
Total of revised estimate sanctioned in Secretary of State Despatch, plus expenditure before 31st December 1884					1,23,83,386			1,17,83,753 6 11	53,925 7 11	1,18,37,678 14 10	52,132 3 [illegible]
Estimated cost of additional works found necessary up to end of last quarter											
Estimated cost of additional works found necessary during quarter ending											
Total estimated cost for completion of works					1,23,83,386						
Deduct, total expenditure as per column 11					1,18,37,679						
Total estimated cost of completing work after quarter ending 30th September 1892					5,45,707						

Expenditure up to 31st March 1892 from commencement of works ..	RS. A. P. 1,16,47,374 1 1	
Do. during current official year from 1st April 1892 to 30th September 1892 ..	1,90,304 13 9	Grant for 1892-93, Rs. 57,760.
Total outlay to 30th September 1892 ..	1,18,37,678 14 10	

MADRAS,
19th October 1892.

(Signed) F. J. WILSON,
Ag. Engineer, Harbour Trust Board.

From the Chairman, Harbour Trust Board, dated Madras, 22nd November 1892, No. 3019.

No. 1864, Marine.

Transferred to the Public Works Department.

(Signed) J. F. PRICE,
Chief Secretary.

28th November 1892.

ORDER—dated 13th December 1892, No. 3414 W., Public Works.

Ordered to be forwarded for the information of the Secretary of State and the Government of India.

2. The question raised in paras. 10 and 11 of the Chairman's letter should be brought forward separately and in a more complete form for the orders of Government. Paras. 8—14 of the report deal with matters outside the scope of the Secretary of State's instructions in para. 4 of his despatch communicated with G.O., No. 430 W., dated 12th February 1892.

These should be strictly followed in future.

[Here enter No. 3415 W., Public Works, dated 13th December 1892.]

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chairman, Harbour Trust Board.
" Marine Department.

ENDORSEMENT—dated 13th December 1892, No. 3415 W., Public Works.

Copy of the above, with a plan showing the progress of the work, forwarded to the Government of India.

(By Order.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

Exd. S. J. Pereira.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1892} Madras.

PUBLIC WORKS.

Dated December, 13th.

Read.

Encl.

G.O., 13th Dec. 1892, Nos. 3414, 3415 W.

DECEMBER.

Madras Harbour Works

Forwarding the progress report of the — for the quarter ending 30th September 1892, with plan.

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13TH DECEMBER 1892, No. $\frac{13}{3414}$ W., PUBLIC WORKS.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our despatch No $\frac{12}{3011}$ W., dated 2nd November 1892, we have the honour to forward, herewith, the progress report of the Madras Harbour Works for the quarter ending 30th September 1892, and beg to invite attention to the request of the Board that Sir Alexander Rendle's opinion should be taken as to the suitability or otherwise of the laterite used to form the base of the piers.

2. The report is accompained by a plan of the Harbour showing the position of the work done during the quarter, contours of the bottom of the harbour and the position of high-water marks.

We have the honour to be,

My Lord,

Your Lordship's most obedient, humble servants,

(Signed) WENLOCK.

(„) H. E. STOKES.

(„) J. H. GARSTIN.

FORT ST. GEORGE,
15th December 1892.

Exd. S. J. Pereira.

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GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. 13 / 3414 W., dated 13th Dec. 1892.

Forwarding the progress report of the Madras Harbour Works for the quarter ending 30th September 1892, with plan.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

From W. P. AUSTIN, Esq., I.C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated 15th March 1893, No. 4495.

I have the honour to submit, for the information of Government, a report upon the Madras Harbour for the quarter ending 31st December 1892.

2. Annexed are returns of imports and exports for that quarter and for the two previous ones, to which is appended the total for the nine months, 1st April to 31st December 1892. These details will be useful for reference and comparison with future returns though not at present of much service, as no quarterly returns have been hitherto recorded with which to compare them.

3. These returns would appear to indicate a steady decline in all the chief items of imports from foreign ports with the following exceptions :—(*a*) Coal up to the end of the year already shows an increase of 5,000 tons upon the imports of the year 1891–92. It is satisfactory to note that this increased tonnage has been despatched by railway without delay or difficulty ; (*b*) Beer in cases, barrels and hogsheads is about equal to the imports of the previous financial year, and the import of foreign wines and spirits is also fully maintained ; (*c*) Iron has up to the end of the nine months reached a total of 13,730 tons as against 13,737, the total of the year 1891–92.

4. Imports of piece-goods and twist show a very serious falling off, and railway materials and stores a continued decline for both lines.

5. Kerosine oil in cases shows a large reduction upon previous years, consequent, probably, upon the anticipated importation of oil in bulk by tank steamers.

6. *Imports from coast.*—Gram and peas show a large increase, and the imports of rice and paddy have still continued considerably in excess of normal years, though very much less than during those portions of the year 1891 and 1892, when scarcity prevailed in the districts.

7. Exports to foreign ports decreased in nearly all the chief items, especially in cotton, ground-nuts and jaggery, while indigo, though showing an improvement upon 1891–92, is far behind previous years. The trade in tanned hides and skins is well maintained.

8. *Exports to coast ports.*—It is to be observed that nearly 13,900 bags of rice have been re-exported ; most of this has been sent south.

9. The tonnage which entered the Harbour during the quarter was as follows :—165 vessels, 284,630 tons net register, and 2 vessels of 2,837 tons, were anchored outside the Harbour. This is a small increase in all respects over the previous quarter.

10. I annex statements of receipts and charges of the Revenue account for the nine months ending 31st December 1892. The receipts have been fairly well maintained under disadvantageous circumstances, due to bad trade attributable to low and fluctuating exchange and to scarcity of produce for export.

The year opened with a credit balance of Rs. 11,45,648, of which Rs. 4,67,098 were invested in Government 4 per cent. paper of the par value of Rs. 5 lakhs. On the 31st December the Trust had to credit in the Bank of Madras Rs. 68,174, cash in Office Rs. 2,067 and invested in 4 per cent. Government paper Rs. 9,50,468 of the par value of 9½ lakhs of rupees.

11. With regard to the progress made upon the construction of the Harbour, I submit, herewith, the plan which accompanied the engineer's report for the quarter, and it will be observed, on reference to his remarks, that during the three months work was only possible below water on 15 days out of the 92 and that the titan cranes were, as usual, brought to the shore by the 15th October for security during the north-east monsoon, advantage being taken of the slack season to repair all wear and tear of machinery.

12. The actual advance at the pier heads was small, being only 5′ 4½″ at the north pier, bringing the total length of bonded wall up to 3,726¼ feet, while at the south pier no advance was made, the ten working days at this pier being devoted to dredging the rubble base.

13. The wave-breaker screen was continued at the north arm by the deposit of 63 blocks, equal to 1,134 cubic yards of concrete. It is to be noted from para. 13 of the engineer's report that the estimate of 1½ wave-breaker blocks per foot of pier has been considerably exceeded, and he reports that the excess blocks have fallen forward and will go to protect the work to be built after the close of the quarter.

14. The foreshore north of the Harbour shows the accretion which is usual during the north-east monsoon, and at the south there is an apparent advance of the sand to the extent of 140 feet at high-water mark as compared with 31st December 1891, the sea having been exceptionally calm in December 1892.

15. The Board's Engineer, Mr. Lee Pogson, relieved the Acting Engineer, Mr. F. J. Wilson, at the end of November, and at their meeting of the 9th December the Trustees passed a resolution placing on record their appreciation of Mr. Wilson's services during the time he had been in charge of the Harbour Works.

16. Considerable reductions have been made in the establishment consequent upon the completion of block-making.

17. At the end of December 1892 the estimated cost of completing the Harbour with an eastern entrance was Rs. 6,07,640, a balance being available under advances sanctioned by the Secretary of State of Rs. 4,87,988, the difference being accounted for by anticipated recoveries on account of sale of tools and plant, which cannot, however, be realized till after the works are completed.

—

ENCLOSURES.

Statement of Receipts and Charges from 1st April to 31st December 1892.

	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Opening balance—									
Government securities (par value 5,00,000)	.....			4,67,097	8	10			
1. Cash in the Bank of Madras ...	6,77,942	3	2						
2. General cash in office	108	6	6						
3. Advance for contingencies ...	500	0	0						
				6,78,550	9	8			
							11,15,648	2	6

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Statement of Receipts and Charges from 1st April to 31st December 1892—cont.

Receipts.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
I. Harbour Dues collections—									
Beach import	1,00,018	10	2						
Pier do.	44,177	8	5						
Beach export	15,729	11	2						
Pier do.	31,987	3	11						
Storage	1,532	10	11						
Wharfage	5,376	5	4						
Cranage	21,546	15	9						
Penalties (section 84)	.....								
Demurrage	.....								
							2,20,369	1	8
Porterage—									
Beach	37,823	5	8						
Pier	23,279	4	1						
Haulage	6,745	10	2						
Miscellaneous	2,551	5	9						
							70,399	9	8
Miscellaneous—									
Harbour Trust properties ...	1,029	12	11						
Provisions	455	2	0						
Water collection	2,740	12	0						
Sundries	1,016	10	2						
							5,242	5	1
II. Contribution from Port Funds ...	.....			.....			65,000	0	0
III. Interest realized on Government of India 4 per cent. promissory notes	.....			.....			16,235	9	10
						Total ...	15,22,894	12	9

Charges.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
I. Interest (under section 30) ...	.....			1,87,039	7	10			
II. Repayment of loan for construction of Harbour	.....			1,00,000	0	0			
							2,87,039	7	10
III. Establishment, &c.—									
1. Chairman's salary	4,000	0	0						
2. Secretary's do.	7,750	0	0						
3. Correspondence department.	2,909	11	10						
4. Accounts department	5,035	3	9						
5. Cash department	3,367	12	2						
6. Traffic department (Shore staff)	21,042	8	5						
7. Preventive service	10,353	1	4						
8. Do. boatmen.	969	11	8						
9. Contribution to Government for pensions	536	0	5						
10. Fees to Trustees	4,650	0	0						
11. Contribution to Provident fund	86	8	11						
							60,700	10	6
IV. Contingencies—									
(*a*) Subject to regular audit—									
Postage	47	13	6						
Receipt stamps	138	9	0						
Telegrams	.....								
Furniture	457	0	0						
Fees for audit	.....								
Law charges	87	8	0						
Stationery and printing ...	2,051	13	8						
Advertisement charges ...	2	6	0						
Uniform for preventive service	1,392	0	0						
							4,177	2	2

Statement of Receipts and Charges from 1st April to 31st December 1892—cont.

Charges—cont.

IV. Contingencies—*cont.*								
(*b*) Admissible without detail audit—								
Overtime fees to establishment	3,032	1	3					
Overtime fees to preventive service and boatmen	2,054	14	10					
Miscellaneous	3,026	12	7					
V. Refund						8,113	12	8
VI. Petty construction and repairs—						2,323	8	1
New works								
Repairs	10,853	12	5					
Tools and plant	14,175	9	2					
						25,029	5	7
VII. Porterage—								
1. Coolies, pier	9,517	7	11					
2. Do. Beach and Custom-house	31,083	9	10					
3. Madras Railway Company	587	8	6					
4. South Indian Railway Company	177	9	10					
5. Coasting cargo	679	15	3					
6. Boat-hire	1,420	3	9					
7. Claims for losses and damage.	574	12	8					
8. Engine charges	1,259	12	11					
9. Refunds	442	3	8					
10. Steam crane charges	2,074	12	3					
11. Contribution to Cooly Provident fund	741	0	3					
						48,559	0	10
Contingencies—								
(*a*) Subject to regular audit—								
Postage								
Receipt stamps	8	14	0					
Telegrams								
Furniture								
Tarpaulins	36	0	0					
Law charges	152	0	0					
Stationery and printing	26	8	0					
Advertisement charges	411	13	0					
Lighting pier and yards	1,179	10	0					
						1,814	13	0
(*b*) Admissible without detailed audit—								
Miscellaneous						1,428	3	5
Advances to construction account						63,000	0	0
				Total, Expenditure		5,02,186	0	1
Balance on the 31st December 1892—								
Government securities (par value 9,50,000)				9,50,467	8 10			
Cash in the Bank of Madras	68,174	7	4					
General cash in office	1,566	12	6					
Advance for contingencies	500	0	0					
				70,241	3 10			
						10,20,708	12	8
				Total		15,22,894	12	9

10th January 1893.

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

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I.—Statement of goods imported from Foreign Ports.

—	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Apparel and effects	Packages	1,579	1,368	1,217	851	1,347	212	154	429	795
Alum	Barrels	424	496	504	1,233	326	156	50	378	584
Asphalte, tar and pitch	Casks	2,296	2,797	3,133	3,623	4,439	913	392	596	1,901
Acids	Cases	791	1,484	775	1,362	1,854	799	304	129	1,232
Arms and guns	Do.	188	516	235	126	442	122	28	49	199
Arrack	Casks	665	832	773	346	884	146	312	247	705
Blankets	Bales	68	25	36	58	119	4	16	143	163
Beef and pork	Cases	1	2	..	..	36	..	..	..	..
Bricks	100	580	420	1,497	222	1,021	170	..	230	400
Beer	Cases	7,668	6,697	5,664	6,606	6,123	2,242	2,312	1,841	6,395
	Barrels	..	2,160	935	110	1,140	639	138	433	1,210
	Hogsheads	7,170	4,424	3,649	8,217	6,808	2,617	1,679	2,159	6,225
Boiler	No.	45	33	19	32	51	7	6	10	23
Corks	Bundles	181	191	133	88	88	14	13	18	45
Canvas	Bales	334	140	77	244	121	59	38	34	131
Candles	Cases	11,911	14,278	20,539	18,515	16,637	8,329	9,047	7,366	24,742
Colours	Do.	898	1,980	1,056	2,698	3,888	465	1,147	1,177	2,789
Confectionery provisions and oilman stores	Do.	17,425	17,042	14,214	17,896	23,395	5,047	4,253	8,321	17,621
Crockery and glass-ware	Crates and casks.	2,990	2,942	3,018	4,099	4,538	1,104	733	802	2,645
Chalk	Barrels	292	377	35	178	379	15	50	25	90
Cement	Casks	6,742	17,203	8,868	7,049	14,622	4,315	1,430	968	6,713
Cast iron pipes and tubes	Tons	451	683	1,669	950	335	436	370	376	1,181
Camphor	Tubs	2,515	2,676	1,560	1,556	4,739	1,091	1,132	1,067	3,290
Coal, coke and fuel	Tons	6,054	13,773	11,992	16,688	..	..	..	..	..
Coke	Do.	..	..	..	..	33,686	17,283	10,494	11,265	39,042
Crackers	Cases	1,200	879	975	1,134	470	578	101	510	180	741
Copper plates and tiles	No.	3,883	498	5,012	1,594	4,802	90	109	145	344
Corrugated iron	Packages	258	51	449	2,913	805	506	486	845	1,837
Dynamite	Cases	2,000	4,998	6,450	9,230	13,040	3,220	310	405	3,935
Earthenware	Crates	3,837	2,104	794	1,913	2,318	220	376	920	1,516
Fire clay	Casks	43	224	147	23	2,768	56	..	148	204
Flour	Bags and barrels.	785	483	675	367	1,317	296	275	171	742
Flannel	Bales	56	74	23	58	54	3	9	9	21
Gunpowder	Packages	700	476	962	1,746	6,667	1,100	2,608	387	4,095
Harmoniums	Cases	8	4	11	9	30	..	3	14	17
Hardware	Cases and casks.	7,670	4,247	2,924	3,954	8,234	1,906	1,331	1,068	4,305
Hops	Packages	315	269	115	129	129	19	17	8	44
Iron	Tons	19,902	17,771	12,762	18,138	13,737	6,946	4,923	1,831	13,730
Iron safes	No.	411	577	343	241	296	90	86	10	136
Kerosine-oil	Cases	86,485	248,024	248,505	345,000	397,862	28,400	25,835	82,664	136,899
Lime water	Do.	126	108	31	45	..	..	..	..	..
Malt	Bags	61	565	609	854	445	88	300	7	395
Milinery and haberdashery.	Cases	2,043	1,640	1,393	1,356	1,609	233	551	452	1,236
Matches	Do.	6,087	11,739	4,928	7,914	10,665	2,639	2,277	1,579	6,495
Machinery	Tons	640	1,752	1,799	1,500	3,099	886	707	678	2,271
Nails	Kegs	9,971	19,266	4,409	13,287	13,744	4,471	664	2,237	7,372
Oil and turpentine	Drums	3,963	6,984	8,863	6,942	7,225	2,365	1,963	1,680	5,948
Piece-goods.	Casks and bales.	76,522	1,05,495	97,383	82,649	85,079	12,281	11,945	13,477	36,803
Piece-twist.							5,000	4,282	5,706	14,988
Paper	Bales	5,526	3,236	3,988	4,646	6,546	1,857	1,021	1,128	4,006
Piano	No.	102	102	135	123	153	28	28	25	81
Printing types	Cases	419	330	348	263	492	409	133	112	659
Pig lead	No.	1,013	1,895	2,647	1,420	2,198	266	342	309	917
Paint	Kegs	5,784	7,837	7,945	7,457	7,758	3,833	3,652	1,140	8,625
Rattan	Bundles	4,945	949	6,527	883	3,823	2,117	662	573	3,352
Soaps	Cases	1,544	2,975	2,191	1,995	1,650	172	140	210	522
Salt	Do.	938	488	620	225	383	104	30	115	249
Steel	Cases and casks.	..	921	3,577	874	864	281	188	1,278	1,747
Steel bundles and bars	No.	..	..	..	5,746	11,261	3,836	421	2,508	6,765
Steel hoop	Bundles	..	..	..	12,566	5,567	1,189	..	..	1,189
Shovels	Do.	34	173	13	747	275	197	209	35	441
Sodawater bottles.	Crates	708	846	997	840	1,395	462	489	473	1,424
Sulphur	Casks	425	825	831	633	752	335	56	84	435
Shot	Kegs	306	220	348	240	177	..	1	20	21
Sundries	Packages	34,366	32,262	39,934	48,364	48,408	6,143	5,947	11,490	23,580
Specie	No.	1,877	1,330	1,541	1,115	1,229	253	203	208	664
Sugar	Bags	..	..	..	2,250	2,152	248	20	774	1,042

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

—	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Slates and pencils	Cases ..	303	1,389	645	1,101	1,242	161	248	160	569
Spelter ..	Cakes ..	7,465	13,343	3,255	11,342	836	2,144	..	3,266	5,410
Saw	Cases ..	49	34	7	68	70	30	4	6	40
Twine and rope..	Bales and coils.	362	71	221	188	438	65	26	339	430
Tin plates ..	Boxes ..	3,611	4,194	3,771	4,394	5,608	845	600	866	2,311
Wine and spirits.	Cases ..	38,227	45,173	46,479	40,857	37,877	10,793	11,896	10,057	32,746
	Casks ..	..	2,094	3,240	2,739	863	111	327	32	470
	Puncheons ..	2,195	256	392	149	369	109	54	332	495
Window glasses.	Cases ..	4,498	1,987	5,158	8,297	5,972	2,779	2,705	1,579	7,063
White and red lead ..	Kegs ..	1,040	859	969	495	681	144	213	319	676
Yellow metal ..	Cases ..	3,141	907	2,722	4,309	3,076	451	447	1,139	2,037
Zinc sheets ..	Packages ..	1,096	1,221	1,174	595	2,749	476	371	361	1,208
Horses ..	No.	619	837	696	611	816	3	297	336	636
Ponies ..	No.	3	3	6	17	70	3	53	32	88
Cows ..	No.	2	5	5	..	59	..	5	6	11
Dogs ..	No.	21	14	13	10	13	..	..	3	3
Elephants ..	No.	..	..	1	25	10	..	..	..	..
Two wheeled carriage ..	....	..	..	..	..	..	..	4	4	4

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

—	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec 1892.	Total for nine months ending 31st Dec. 1892.
Stores ..	Packages ..	186,911	34,697	81,723	51,879	62,105	13,429	2,111	7,293	22,833
	Tons ..	..	..	171	167	3,605	389	..	110	499
Fuel	Do. ..	4,884	5,587	9,753	4,678	..	..	..	..	..
Coke	Do. ..	608	997	645	839	1,437	141	..	..	141
Coal	Do. ..	718	52	2,702	4,361	27	..	..	..	..
Timber ..	Do. ..	831	1,822	1,483	3,800	2,477	569	42	73	684
Firebrick ..	100 ..	..	141	140	165	115	..	..	98	98

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

—	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Stores	Packages ..	140,376	109,131	694,812	618,937	68,252	5,718	4,961	4,683	14,702
Fuel	Tons ..	..	856	..	..	..	..	..	..	..
Coke	Do. ..	..	..	..	..	14	..	..	..	..
Coal	Do. ..	3,091	5,276	3,562	5,980	..	..	..	..	..
Timber ..	Do. ..	..	10	..	..	..	..	..	..	..
Boiler	No. ..	..	..	10	55	4	..	5	..	5

950
20

IV.—Statement of goods imported from Coast Ports.

—	Packages.	1887–88.	1888–89.	1889–90.	1890–91.	1891–92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Apparel & effects.	Packages ..	149	378	414	634	451	105	55	78	238
Alum ..	Barrels ..	50	149	11	99	89	11	5	17	33
Acids ..	Cases ..	..	..	..	210	..	10	..	..	10
Animals ..	No. ..	21	15	49	10	45	4	1	5	10
Arms and guns ..	Cases ..	2	3	1	7	2	..	..	..	..
Boilers ..	No. ..	1,577	120	1,239	1,630	1,396	..	10	47	57
Bricks & tiles ..	100 ..	757	715	461	849	379	366	95	14	475
Coffee ..	Bags ..	996	1,871	682	..	..	..	..	..	..
Candles ..	Cases ..	635	1,667	1,067	1,541	1,225	378	861	167	1,406
Colours ..	,, ..	216	782	413	305	322	96	87	108	291
Crockery & glassware ..	,, ..	1	2,451	186	14,884	13,249	600	3,692	1,985	6,277
Coal ..	Tons ..	137	112	178	187	77	20	25	22	67
Carpets ..	Bales ..	1,647	1,483	1,585	4,640	682	248	419	433	1,100
Camphor & benjamin ..	Tubs ..	2,844	191	124	..	32	..	..	..	..
Copra ..	Bags ..	..	10	..	..	..	..	..	..	..
Crackers ..	Cases ..	772	1,350	1,061	..	1,667	356	384	168	908
Copper ..	,, ..	..	..	11,053	1,071	96	..	..	421	421
Do. ..	Tiles & ingots ..	..	..	..	5,703	4,415	369	725	1,540	2,634
Cutch & lac ..	Packages ..	10,399	900	600	..	3	..	..	..	..
Cocoanuts ..	No. ..	97	169	30	23	392	1,424	..	1,496	2,920
Earthenware ..	Crates ..	699	2,080	..	..	2,626	886	2,339	300	3,525
Do. ..	Pipes ..	396	1,212	892	..	..	..	..	..	..
Firewood ..	Tons ..	1,689	2,819	4,352	4,177	7,248	2,334	2,889	3,501	8,724
Flour ..	Bags & Barrels.	7,197	7,993	11,863	10,786	7,930	381	1,024	2,097	3,502
Gunnies ..	Bales ..	168,359	125,942	191,357	225,739	271,682	73,695	109,441	112,513	295,649
Gram and peas, &c. ..	Bags ..	3,807	1,899	7,077	8,528	2,945	20	970	225	1,215
Garlic ..	,, ..	737	542	469	605	641	120	88	315	523
Hardware ..	Cases ..	1,068	702	1,043	681	880	239	311	244	794
Horns ..	Bundles ..	7,138	4,449	7,400	6,936	6,127	3,351	2,311	2,133	7,795
Hides ..	Bales ..	639	277	457	400	231	48	49	96	193
Iron ..	Tons ..	6	65	47	19	31	10	11	2	23
Iron safes ..	No. ..	6,945	5,116	5,796	5,574	6,508	773	1,522	1,030	3,325
Leaves ..	Bundles ..	6	171	109	251	158	15	6	37	58
Machinery ..	Tons ..	155	254	268	189	208	41	68	80	149
Millinary and Haberdashery.	Cases ..	2,244	2,794	2,540	2,846	8,340	1,686	1,357	1,197	4,240
Oil and turpentine ..	Drums ..	..	..	..	..	..	34,781	14,429	3,610	52,820
Paddy ..	Bags ..	5,080	7,306	6,237	3,028	3,582	514	963	1,592	3,069
Piece-goods ..	Cases and bales.	3,223	3,826	5,003	3,985	3,128	662	1,138	1,522	3,322
Paper ..	Bales ..	49	212	1,098	99	224	14	210	155	379
Paint ..	Kegs ..	7	6	7	5	15	4	4	1	9
Piano ..	No. ..	42,400	26,768	69,446	223,781	1,147,048	76,303	45,699	26,031	148,033
Rice ..	Bags ..	877	1,409	1,867	715	1,434	762	557	231	1,550
Rose water ..	Cases ..	14,286	13,066	13,212	12,044	30,106	7,998	6,745	4,798	19,541
Seeds ..	Bags ..	8,314	5,729	5,727	5,387	6,199	1,130	948	1,006	3,084
Skins ..	Bales ..	1,045	837	883	825	1,051	170	280	177	627
Silk ..	,, ..	227	145	297	63	143	3	26	9	38
Sandalwood ..	Bundles ..	4,163	6,000	2,816	2,134	1,381	158	190	227	575
Sugar ..	Bags ..	107	201	184	37	202	14	40	27	81
Specie ..	No. ..	44,567	43,462	38,472	40,653	47,533	13,376	10,059	13,379	35,814
Sundries ..	Packages ..	12	105	179	363	445	6	..	17	23
Soap ..	Cases ..	..	48	173	..	471	334	..	137	471
Sulphur ..	Casks ..	..	..	..	3,674	359	182	68	313	563
Spice ..	Packages ..	1,515	1,164	541	942	839	101	240	202	543
Twine and rope.	Bales and coils.	630	1,118	1,322	708	1,807	93	289	303	685
Tin plates ..	Boxes ..	3,782	4,064	3,434	1,338	1,126	209	600	168	977
Twist ..	Bales ..	4,635	5,790	8,421	10,751	7,224	1,686	1,515	1,107	3,708
Turmeric ..	Bags ..	14,273	17,277	17,889	16,850	15,137	2,590	2,586	2,044	7,220
Timber ..	Tons ..	1,421	3,813	4,785	1,321	2,273	864	261	3,397	
Tea ..	Cases ..	3,830	636	155	842	809	6	191	107	197	497
Yellow-metal ..	,, ..	2	..	..	..	1	8	..	..	8
Horses ..	No. ..	..	..	..	..	..	..	2	2	
Two wheeled carriages ..	,, ..									

V.—Statement of goods exported to Foreign Ports.

—	Packages.	1887-88.	1888-89.	1889-90	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Beer and ale ..	Cases ..	22	13	30	..	18	2	..	..	2
	Casks ..	21	..	2	..	60	..	7	..	7
	Hogsheads ..	..	1	1	..	3	..	..	..	..
Cinchona bark ..	Bales ..	2,791	2,185	1,299	1,346	471	110	327	32	469
Chillies ..	Bags & bundles.	6,333	2,225	3,262	1,362	2,760	..	..	9	9
Cigars ..	Cases ..	1,120	1,239	1,423	942	1,249	146	139	92	377
Coffee ..	Bags ..	14,879	23,456	15,515	22,708	23,764	12,152	3,406	41	15,599
Cotton ..	Bales ..	82,394	55,173	101,837	77,922	48,202	8,512	8,387	6,422	23,321
Cotton twist ..	,, ..	2,893	3,960	5,956	8,271	4,229	2,294	2,907	5	5,206
Coriander and omum seeds ..	Bags ..	3,891	9,281	11,616	1,335	8,218	361	260	899	1,520
Carpets ..	Bales ..	526	645	725	524	418	50	90	56	196
Coal ..	Tons ..	50	182	115	..	905	213	..	100	313
Deer horns ..	Packages ..	886	874	1,366	1,311	1,574	364	743	263	701
Explosive ..	Cases ..	9	14	25	..	21	..	1	..	1
Firewood ..	Tons ..	8	23	..	..	..	..	..	..	..
Four-wheel carriage ..	No. ..	3	30	3	2	8	1	1	..	2
Ground nuts ..	Bags ..	105,629	95,642	206,026	190,320	93,132	11,610	11,110	82	22,802
Gram, peas, &c. ..	,, ..	2,379	937	1,454	..	519	..	..	136	136
Horns, cow and buffalo ..	Tons ..	242	199	66	84	62	15	4	3	22
Hides, tanned ..	Bales & bundles	20,376	17,858	17,532	16,460	21,848	5,444	7,352	3,898	16,694
Indigo ..	Cases & chests.	21,482	22,762	27,618	24,453	14,622	2,762	2,781	10,802	16,345
Iron ..	Tons ..	20	29	23	..	2	..	..	11	11
Jaggery ..	Bags ..	79,358	23,520	111,032	34,135	28,985	13,786	..	6,413	20,179
Myrabolams ..	Bags ..	1,744	195	452	2,576	235	60	..	31	91
Miscellaneous ..	Packages ..	19,381	23,607	17,990	16,335	37,808	8,290	8,889	4,641	21,820
Onions ..	Bags & baskets.	6,989	7,979	9,078	12,022	21,964	4,458	935	24	5,417
Oil ..	Casks ..	933	331	587	50	434	18	4	25	47
Piece-goods ..	Bales and cases.	4,033	3,372	3,419	5,843	6,205	1,075	1,281	1,540	3,896
Potatoes ..	Bags & baskets.	2,892	3,837	2,703	2,284	2,437	157	..	115	272
Poonac ..	Bags ..	14,847	13,116	15,187	26,134	33,880	5,962	4,165	3,764	13,791
Piano ..	No. ..	3	10	8	3	41	5	2	3	10
Paddy ..	,, ..	..	..	..	..	..	..	..	5	5
Rice ..	Bags ..	5,250	17,589	65,475	2,050	1,138	1	..	2,639	2,640
Redwood ..	Tons ..	1,145	1,382	2,052	1,899	699	342	384	273	999
Seeds, gingelly and castor ..	Bags ..	132,295	20,127	80,411	19,021	1,313	652	65	7,633	8,350
Skins, sheep and goat, tanned ..	Bales ..	31,249	32,498	30,899	31,209	32,194	7,435	10,035	7,207	24,677
Sandalwood ..	Bundles ..	849	672	637	1,723	1,534	43	..	1	44
Spirits and wines	Cases ..	714	135	331	..	332	..	18	1	19
	Casks ..	49	5	37	..	977	1	39	25	65
	Puncheons ..	..	..	18	..	..	..	..	..	..
Sugar ..	Bags ..	912	1,112	7,296	..	599	21	1	62	84
Species ..	Boxes ..	134	153	33	55	94	21	..	9	30
Tamarind ..	Bundles ..	3,573	8,277	2,549	1,155	6,445	1,969	1,467	61	3,497
Turmeric ..	Bags ..	24,230	1,898	1,526	..	2,159	217	20	374	611
Tea ..	Cases ..	4,300	4,275	3,822	2,384	2,266	424	785	370	1,579
Two-wheel carriage ..	No. ..	..	..	..	..	..	..	..	..	..
Wool ..	Bales ..	991	970	1,043	1,196	1,021	436	443	207	1,086
Yellow metal ..	Tons ..	98	3	5	..	107	..	..	..	..

VI.—Statement of goods exported to Coast Ports.

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Beer and ale ..	Cases ..	262	249	456	289	352	81	86	58	225
	Casks ..	28	16	110	159	159	15	10	45	70
	Hogsheads ..	..	161	10	47	7	1	5	9	15
Cinchona bark ..	Bales ..	80	178	186	..	395	..	84	..	84
Chillies ..	Bags and bundles	2,341	2,908	5,535	4,592	2,064	1,264	1,126	280	2,670
Cigars ..	Cases ..	857	1,488	1,298	1,345	1,418	311	277	288	876
Coffee ..	Bags ..	567	506	574	605	507	806	324	198	1,328
Cotton ..	Bales ..	2,977	1,572	4,761	8,521	5,721	832	1,312	573	2,717
Cotton twist ..	,, ..	2,923	3,816	3,675	5,103	4,698	784	950	3,123	4,857

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VI.—Statement of goods exported to Coast Ports—*cont.*

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Coriander and omum seeds ..	Bags ..	2,435	2,728	7,071	4,783	2,970	1,531	1,012	582	3,125
Cement ..	Casks ..	..	..	..	..	..	..	..	8,611	8,611
Carpets ..	Bales ..	19	34	26	45	68	14	11	14	39
Coal ..	Tons ..	249	..	94	976	275	25	..	75	100
Deer horns ..	Packages ..	4	85	7	84	108	1	..	100	101
Explosive ..	Cases ..	152	201	303	55	2,668	315	32	26	373
Eggs ..	Pots ..	2,631	2,717	3,882	2,801	1,165	157	193	379	729
Firewood ..	Tons ..	67	28	8	..	2	..	..	..	..
Four-wheel carriage ..	No. ..	21	26	9	34	21	9	5	5	19
Groundnuts ..	Bags ..	22,711	30,757	20,996	61,463	27,790	7,797	731	2,352	10,880
Gram, peas, &c. ..	,, ..	701	15,204	8,987	3,568	521	66	587	33	686
Horns, cow and buffalo ..	Tons ..	79	198	336	30	310	28	68	112	208
Hides ..	Bales and bundles	246	407	496	506	379	111	109	142	362
Indigo ..	Cases and chests.	227	405	829	412	165	..	16	600	616
Iron ..	Tons ..	324	989	743	850	2,244	885	1,517	20	2,428
Jaggery ..	Bags ..	433	376	296	..	258	86	4	35	125
Kerosine-oil ..	Cases ..	250	1,516	4,680	3,463	10,327	212	216	11	439
Myrabolams ..	Bags ..	714	322	139	535	1,054	1	6	12	19
Miscellaneous ..	Packages ..	26,540	12,419	20,868	36,308	50,510	12,262	11,366	12,071	35,699
Onions ..	Bags and baskets	15,838	9,705	11,516	21,141	22,442	2,036	4,512	26,480	33,028
Oil ..	Casks ..	1,771	790	1,844	1,281	807	285	43	238	566
Piece-goods ..	Bales and cases.	3,273	3,429	3,613	6,259	5,615	1,566	2,336	1,779	5,681
Potatoes ..	Bags and baskets	14,485	24,229	21,992	26,470	23,637	918	7,881	14,823	23,622
Poonac ..	Bags ..	3,121	2,210	1,469	4,752	4,770	6,023	3,355	3,951	13,329
Paddy ..	Bags ..	..	5	42	24	23	2	4	8	14
Piano ..	No. ..	18,655	27,149	4,019	11,426	..	..	250	1,300	1,550
Paddy ..	Bags ..	3,370	6,790	8,198	8,098	5,448	3,076	1,924	12,678	17,678
Rice ..	,, ..	223	62	194	..	119	48	639	6	693
Redwood ..	Tons ..	56,137	19,374	28,756	57,157	16,803	401	252	633	1,286
Seeds, gingelly and castor ..	Bags ..	635	510	758	1,271	721	90	166	253	509
Skins, sheep and goat, tanned ..	Bales ..	998	224	342	1,856	153	54	9	152	225
Sandalwood ..	Bundles ..	2,629	2,143	2,698	3,049	2,982	1,255	772	1,023	3,050
Spirits	Cases ..	44	150	162	250	727	86	210	196	492
	Casks ..	..	2	16	54	13	1	2	95	98
	Puncheons ..	265	460	2,307	2,093	773	564	338	268	1,170
Sugar ..	Bags ..	401	278	164	154	236	169	132	169	470
Species ..	Boxes ..	5,423	2,010	3,598	17,197	3,624	4,340	1,254	725	6,319
Tamarind ..	Bundles ..	11,491	8,972	463	4,719	19,258	5,218	2,762	3,751	11,731
Turmeric ..	Bags ..	51	55	544	298	341	17	15	15	47
Tea ..	Cases ..	4	14	3	27	13	4	2	4	10
Two-wheel carriage ..	No. ..	9	37	567	475	769	147	190	118	455
Wool ..	Bales ..	23	88	25	47	53	12	4	51	67
Yellow metal ..	Tons ..									

VII.—Statement of stores, &c., imported by Government.

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Accountant-General.	Specie, silver ..	Boxes	2,423	1,789	1,109	1,176	403	100	..	370	470
	,, copper ..	,,	352	335	1,320	3,475	5,100	..	..	..	..
	Silver and copper ..	,,	..	..	174	..	..	..	..	..	..
	Notes ..	,,	4	19	21	8	32	..	..	10	10
	Packages ..	No.	7	..	1	..	27	..	1	..	1

VII.—Statement of stores, &c., imported by Government—*cont.*

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
State Railway	Packages and pieces ..	No.	11,940	593	..	3	..	..	..	..	..
	Rails ..	,,	26,602	..	..	..	..	..	..	..	..
	Sleepers ..	,,	78,513	..	..	..	..	..	..	..	..
	Bridge works ..	Tons.	267	..	..	..	..	..	..	..	..
Public Works Department.	Boilers ..	No.	2	2	..	..	2	..	..	..	..
	Coal ..	Tons	..	106	44	60	50	..	20	..	20
	Iron ..	,,	63	220	442	250	271	..	..	..	..
	Stores ..	Pkgs.	3,084	1,691	1,127	2,049	15,148	2,023	1,130	601	3,754
Ordnance	Coal ..	Tons.	136	86	1,968	939	..	..	..	..	..
	Ammunition ..	Boxes	2,160	1,303	51	..	2,148	..	..	..	..
	Stores ..	Pkgs.	11,336	15,838	22,268	22,898	13,017	4,067	1,152	2,422	7,641
Madras Harbour Works.	Cement ..	Casks	11,168	35,764	40,241	30,375	1,869	..	..	..	..
	Stores ..	Pkgs.	790	321	1,009	895	3,869	..	..	..	..
	Coal ..	Tons	..	..	496	586	..	..	..	..	..
Clothing ..	Packages ..	No.	2,525	1,773	2,831	1,627	1,983	589	635	302	1,526
Police ..	,, ..	,,	211	248	135	335	122	98	51	7	156
Salt Revenue ..	,, ..	,,	69	75	115	190	272	220	56	..	276
Post office ..	,, ..	,,	1,733	980	1,858	1,739	1,119	198	249	40	487
Medical ..	,, ..	,,	2,879	1,384	1,016	1,260	1,779	415	50	24	489
Telegraphs ..	,, ..	,,	34,696	6,899	16,414	19,211	34,768	1,752	1,949	3,349	7,050
Stationery ..	,, ..	,,	1,503	1,088	743	611	732	19	107	292	418
Stamps ..	,, ..	,,	1,263	1,435	1,499	1,647	1,961	186	656	59	901
Commissariat ..	,, ..	,,	3,841	1,811	1,779	4,384	8,588	2,013	1,904	1,866	5,830
Gazette Press ..	,, ..	No.	91	52	32	2,414	161	7	126	1	135
Marine ..	,, ..	,,	147	32	182	511	729	117	107	51	275
Superintendent, Railway Mail Service. ..											
Revenue Survey.	,, ..	,,	279	52	31	..	..	..	..	..	..
Government Central Museum ..	,, ..	,,	28	1	6	292	380	209	101	..	310
Under-Secretary to Government.	,, ..	,,	13	6	4	10	15	3	2	..	5
Superintendent of Prisons ..	,, ..	,,	81	87	84	94	235	439	28	6	473
Revenue Board ..	,, ..	,,	6	3	9	..	1	2	3	8	13
Forests ..	,, ..	,,	36	65	36	139	424	..	15	5	20
Bank of Madras	Specie, silver ..	Boxes	66	31,811	175	1,318	1,196	2	1	..	3
	,, copper ..	,,	..	..	3	..	..	..	..	..	..
Presidency College	Packages ..	No.	..	..	56	..	..	..	..	..	..
School of Arts ..	,, ..	,,	..	..	13	40	28	7	..	1	8
Sanitary Commissioner ..	,, ..	,,	..	2	2	..	3	..	..	..	..
Inspector of Cattle Diseases ..	,, ..	,,	..	1	..	..	..	..	..	..	..
Chemical Examiner ..	,, ..	,,	..	116	10	..	9	..	..	..	..
Medical College.	,, ..	,,	42	25	15	32	31	2	6	3	11
Deputy Collectors ..	,, ..	,,	11	50	2	64	73	..	2	..	2
Camp equipage ..	,, ..	,,	12	..	..	14	9	1	10	..	11
Astronomer ..	,, ..	,,	5	..	1	..	..	..	..	..	..
Presidency Pay Master ..	,, ..	,,	4	11	6	6	23	2	7	2	8
Registration ..	,, ..	,,	1	8	6	13	2	5	3	..	4
Director of Public Instruction ..	,, ..	,,	15	24	2	3	7	1	3	..	137
Superintendent, Remount Depôt, Hosur ..	,, ..	,,	43	..	9	5	9	..	137	..	250
Resident, Mysore in Bangalore ..	,, ..	,,	..	..	..	..	..	..	..	250	3
Secretary for Berar, Hyderabad ..	,, ..	,,	..	..	..	..	..	..	..	1	6

VIII.—Statement of stores, &c., exported by Government.

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1992.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Accountant-General.	Specie, silver ..	Boxes.	342	118	174	20	411	27	9	..	36
	,, copper ..	,,	176	136	216	330	965	173	25	..	198
	,, notes ..	,,	4	5	4	10	6	4	3	..	7
	,, packages.	No.	1	1	1	6	4	..	1	..	1
Bank of Madras ..	silver ..	Boxes.	..	..	10	..	34	..	..	..	..
Do. ..	,, copper ..	,,	..	..	37	..	..	33	29	..	62
Ordnance ..	Packages & pieces	No.	7,476	5,766	25,038	6,564	8,595	1,083	1,123	349	2,555
Public Works Department ..	,, ..	,,	1,100	4,420	18,368	429	1,784	141	23	56	220
Clothing ..	,, ..	,,	1,401	916	1,018	1,254	1,327	225	483	32	740
Police ..	,, ..	,,	690	749	849	727	889	95	495	98	688
Salt Revenue ..	,, ..	,,	152	330	493	306	591	84	293	96	473
Medical ..	,, ..	,,	1,794	1,049	1,868	1,552	1,367	518	278	21	812
Telegraph ..	,, ..	,,	4,078	355	1,125	9,462	8,845	35	120	21	176
Stationery ..	,, ..	,,	915	777	398	799	693	153	132	39	324
Stamps ..	,, ..	,,	177	165	171	195	220	58	45	24	122
Commissariat ..	,, ..	,,	5,881	5,128	5,179	7,761	7,971	749	788	1,763	3,291
Gazette Press ..	,, ..	,,	328	445	567	476	526	114	128	86	328
Marine ..	,, ..	,,	926	419	307	268	390	92	122	7	221
Revenue Board ..	,, ..	,,	29	26	52	79	77	18	5	..	23
Revenue Settlement. ..	,, ..	,,	154	157	55	87	51	29	33	8	70
Revenue Survey.	,, ..	,,	80	31	77	74	76	56	233	23	312
Superintendent of Prisons ..	,, ..	,,	63	151	91	71	69	36	90	11	136
Registration ..	,, ..	,,	29	80	61	61	66	..	..	..	..
Conservator of Forests ..	,, ..	,,	35	28	49	31	34	3	4	1	8
Quarter Master-General ..	,, ..	,,	28	..	..	..	..	..	4	..	4
Government Central Museum ..	,, ..	,,	9	7	6	9	10	4	15	..	19
Deputy Collectors ..	,, ..	,,	12	20	..	..	2	9	..	..	9
Camp Equipage ..	,, ..	,,	244	..	..	..	..	..	..	..	..
Government Astronomer ..	,, ..	,,	6	5	2	..	..	..	11	2	14
Agriculture ..	,, ..	,,	7	..	..	..	6	15	2	1	3
General Hospital.	,, ..	,,	3	..	..	..	..	..	..	..	..
State Railways ..	,, ..	,,	98	295	..	..	100	..	..	..	..
Inspector of Cattle Diseases ..	,, ..	,,	9	11	11	3	3	1	..	..	1
Chemical Examiner ..	,, ..	,,	1	..	1	3	..	..	1	..	1
Director of Public Instruction.	,, ..	,,	2	9	2	16	10	3	1	..	4
Registrar of University ..	,, ..	,,	12	14	16	16	13	..	..	3	3
Collectors ..	,, ..	,,	1	..	..	..	10	..	..	..	..
Curator of Government Garden, Ooty ..	,, ..	,,	2	..	2	12	11	..	..	..	..
Engineer, Harbour Trust Board	,, ..	,,	..	..	1	..	..	..	..	..	..
Crown Officer, High Court ..	,, ..	,,	..	..	1	8	13	14	6	3	..	9
School of Arts ..	,, ..	,,	..	..	1	..	..	..	..	..	..
Secretary to Government, Public Department.	,, ..	,,	..	..	4	1	..	2	..	..	..
Registrar-General of Births, Deaths and Marriages.	,, ..	,,	..	..	..	..	..	..	..	..	..
Inam Commissioner ..	,, ..	,,	..	..	..	1	..	1	..	..	..
Consulting Engineer to Government Railways.	,, ..	,,	..	..	..	4	36	20	..	..	..	..

No. 1517 P.

(Signed) G. R. P. LLOYD,
Acting Traffic Manager, Harbour Trust Board.

To the Secretary, Harbour Trust Board.

REPORT of progress on the Madras Harbour Works for the quarter ending 31st December 1892.

Accompanying this report are the following plans and statements :—

(*a*) A plan of the harbour to a scale of 200 feet to an inch, showing in red the position and quantity of work done during the quarter. The contours in half fathoms, shown on this plan are those of the last complete Marine Survey of 1889.

2. The positions of the high water marks of the 31st December 1892 and that of the previous twelve months, both to the north of the revetment and the south of the harbour, are shown for comparison.

(*b*) A statement comparing the expenditure on different sub-heads of work up to the end of the quarter with the provisions of the sanctioned estimate.

(*c*) A statement showing work done under different sub-heads and particulars of cement received and issued.

3. The various heads of work, &c., throughout the Harbour Works, are reported on as follows :—

4. *General.*—The quarter under review—October, November and December—is the one in which the least work at sea is possible, owing to the setting in of the north-east monsoon from the 15th October, by which date all the titan cranes should be withdrawn to shore for security, thus only 15 working days are available for work below water during the quarter.

5. From the 15th October, advantage is taken of this slack season to put into repair all wear and tear of machinery to be in readiness for the usual heavy work, general in the following quarter :—

6. *North pier superstructure.*—At the north pier the crane was at work for 9 days out of the possible 15 working days in October, and then the crane was run to shore for the monsoon by the 13th October, where it remained.

7. Of the 15 days, 2 were holidays, 2 Sundays, 4 days devoted to dredging, 3 days to depositing wavebreaker blocks, and 2 days to setting blocks; and on these 2 days 23 superstructure blocks were set in position, which completed course No. 247 and advanced the curved portion of the north pier head by 5′ 4½″, which brought the total length of bonded wall up to 3,726⅓ feet from the first block set on shore.

8. Ten wrought iron rail cramps were fixed in the upper blocks of the superstructure, and the permanent way was repaired, and the necessary renewals made.

9. At the close of the quarter there remained 13 courses or 69′ 4″ of superstructure to be built before the end of the block work of the pier head is reached, are the point where the caisson is to terminate the pier head.

10. Owing to the more rapid progress the north pier has made over the south arm since the suggestion was made in Sir A. M. Rendel's minute of 25th February 1890 to finish the south pier off with a caisson, and the north pier in blockwork temporarily, in case the entrance should eventually be altered, it is now quite evident the north pier will be completed first, and as the crane for setting the caissons is at the north pier, and apparently no doubt now exists as to which is to be the final entrance to the harbour, it would be more economical to complete both piers with caissons without delay and look to docks for any further improvement necessary in the state of the sea, inside the harbour in rough weather.

11. The cost of finishing off both piers with concrete in caissons has been included in the estimate and sanctioned, and as the ironwork is already on the works, it is only necessary to record sanction to finish off both piers with the caissons already supplied, as soon as opportunity occurs.

12. *Wavebreaker.*—Sixty-three wavebreaker blocks, equivalent to 1,134 cubic yards of concrete, were dropped in to form the wavebreaker protection between 3,697 feet and 3,726⅓ feet on this pier.

13. The estimated quantity is 1½ wavebreaker blocks per lineal foot of pier which would mean 44 blocks over this length of pier protected in the quarter, so that the excess of 19 blocks deposited have fallen forward and go to protect in advance the work to be built next season. In the absence of this information the quantities would show an excess upon the estimate against the actual feet of pier head built, but further progress will correct this.

14. Adjustments will have to be made during the next quarter in the quantities of work done, as compared with the sanctioned estimate, as the quantities and rates of the 24 feet wall, and those of the wider pier head, have all been jumbled up together, and a true comparison with the estimate cannot be shown at present, and therefore the statement (*b*) submitted herewith is only approximate in quantities and rates, but correct in total expenditure.

15. *Apron or protection to rubble base.*—The north pier rubble base was paved or consolidated with Portland cement concrete for a length of 46 feet of completed work, and 263 feet of base was prepared for the work, and the outer line of blocks built under water over this length.

950/23

16. The space between the pier and the outer line of blocks over the length of 263 feet has yet to be paved with concrete, which accounts for so small a quantity of concrete used as compared with the finished work elsewhere.

17. *South pier superstructure.*—Very little work was done at the south pier; of the 12 working days the titan crane was in position, before being withdrawn to shore for the monsoon, two days were lost owing to the sea being too rough for work and the remaining 10 days were devoted to dredging up the excess rubble base and setting one superstructure block, which the undersigned has since had to raise again to lower it nearly one foot; therefore there is no progress to record during the quarter.

18. Four rail cramps were fixed in the upper blocks set last quarter and 452 lineal feet of temporary line and sidings were removed.

19. At the end of the quarter there remained 16 courses or 85 feet 4 inches of superstructure to be built up to the end of the blockwork, or point at which the cylindrical caisson, which terminates the pier head, is to commence.

20. *Blockmaking.*—There was no blockmaking during the quarter as all the required superstructure blocks have been made, but this work will have to be resumed again shortly, as a few special blocks will be necessary to enable the caisson to be reached with the titan cranes, and as soon as the caisson is in position a very rapid outturn of concrete will be required to fill it with the least possible delay.

21. *Foreshore north of harbour.*—From the high water mark of the 31st December 1892, it will be seen that accretion is going on and this action will probably continue till about the end of March when the usual bay will begin to form, which will increase until the sea attacks the revetment and gradually flattens the front slope of the work. In many places the revetment is very weak and during the ensuing quarter will require feeding to enable it to withstand the heavy seas of May.

22. It is therefore proposed to feed this revetment during February and March, where the section is weak, to the extent of the balance or saving upon the already sanctioned estimate, which is Rs. 27,886.

23. *Foreshore south of and depth within harbour.*—A new and exhaustive survey to be repeated on exactly the same lines as the marine survey of 1889 will be made in 1893 and will be submitted with other data collected by the undersigned, which is being plotted and will show correctly the true rate of accretion of sand for years past on the south of the south pier in cubic feet from year to year. From this information a probable date can be fixed when the high water mark will reach the end of the inner straight of the southern arm if the accretion proves to have been regular below water level. The rate of advance of this accretion above sea level has appeared rapid for some years past, but the time has now come when it will materially diminish, as the depth of water to be silted up becomes greater and the only true means of proving the rate of advance in future is being worked out and plotted. The high water mark is a very rough guide as to what is taking place at sea level, as a rough sea will move the high water level east or west in a few hours, and from this it will be seen that the high water mark, however accurately recorded, is of little value.

24. The high water mark has as usual been recorded and is shown on the plan in comparison with the high water mark of the same date last year and there would appear to be an advance of sand of 140 feet above water level, but there is nothing on record to show the state of the sea last December, while in December 1892 the sea was exceptionally calm. No new method for recording the high water mark has been recorded as reported in para. 8 of the last report.

25. *Establishment.*—On the 26th November 1892 the Acting Engineer Mr. F. J. Wilson was relieved by the undersigned on his return from 12 months' sick leave on medical certificate, granted by the Trustees from the 26th November 1891.

26. The new foreman diver, Mr. J. MacDonald, who was appointed by the India Office, arrived by the S.S. *Bengal* and took over charge of the diving staff on the 12th December 1892 in the place of Mr. C. Underdown, whose resignation was accepted by the Trustees and left the works on the 1st April 1892; during this interval Mr. W. S. Boteler held charge of the diving operations in addition to his own duties as general foreman.

27. Considerable reductions in the works establishment were made by the undersigned throughout the works on account of the completion of blockmaking and general slow progress on the works during the monsoon months.

28. *Miscellaneous.*—During the quarter a good deal of work was in hand for the Traffic Department of the Harbour Trust Board—three latrines were built at a cost of Rs. 336 and the Deputy Traffic Manager's bungalow at Cassimode was repaired at a cost of Rs. 567, while all cranes and trucks, &c., were maintained in good working order by this department as usual. Of the work in hand for the Traffic Department is the building of 15 new pier trucks at a cost of Rs. 2,669 and general repairs to the Carlton House occupied by the Secretary and the Biden Home by the Harbour Masters at a cost of Rs. 456.

29. The expenditure to the end of the quarter, including establishment, tools and plant and contingencies, is Rs. 1,18,95,398 out of a total estimated cost of Rs. 1,23,83,386, leaving a balance of Rs. 4,87,988 to be spent for completion.

MEMORANDUM to accompany statement of progress for the quarter ending 31st December 1892.

	Rs.
1. Estimated sum required to complete the works at the commencement of the quarter except establishment, tools and plant and contingent charges	6,30,680
2. Cost of work done during the quarter	23,040
Total ...	6,07,640
3. Estimated cost of additional works found necessary during the quarter	...
4. Estimated cost of completing the works from and after the end of quarter	6,07,640

MADRAS,
26th January 1893.

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

PROGRESS STATEMENT No. 31.

MADRAS HARBOUR WORKS.

STATEMENT showing progress during quarter ending 31st December 1892 to accompany Report No. 30.

No. of item.	Particulars and quantity of work, &c.	Sub-heads of work.	North Pier. Rubble base.	North Pier. Pier head.	North Pier. Wave-breaker.	North Pier. Concrete capping.	North Pier. Base protection.	South Pier. Rubble base.	South Pier. Pier head.	South Pier. Wave-breaker.	South Pier. Concrete capping.	South Pier. Base protection.	Railway Lines. At works.	Railway Lines. At quarries.	Railway Lines. Sand line.	Railway Lines. Beach improvements.	Pallávaram quarries outturn.	Concrete block-making	Protective works.	Total expenditure during the quarter ending 31st December 1892.
	NOTE.—The figures in *block type* denote for comparison progress and quantity of work done in the quarter ending 31st December 1891.																			
		Column.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Rubble stone deposited from boats	Tons.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
																	..	..	19,616¾	..
																			Nil.	
2	Do. do. from wagons	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19,616¾	..	..	..
																	Nil.			
3	Total quantity rubble stone received on works	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,826½	..	..	..
																	Nil.			
4	Do. blasted chips do.	,,	..	2	..	..	..	..	12	..	..	..	..	..	..	..	..	..	..	..
				23					*Nil.*											
5	Concrete blocks, set by divers	No.	..		29	..	..	..	..	28	..	..	..	..	..	..	..	..	..	..
					63					*Nil.*										
6	Do. deposited in wave-breaker	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
7	Do. made for superstructure	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	Do. do. pier head	,,	..	8	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..
				10					4											
9	Wrought iron cramp fixed in position	,,	..	..	..	..	239	..	..	..	..	..	..	..	..	..	..	..	..	..
							124½		6¼											
10	Total outturn of concrete	C. yds.	..	Nil.	..	..	..	..	*Nil.*	..	..	..	..	..	..	..	..	..	..	..
11	Advance or progress of completed superstructure	Ry. feet.	..	5—4½	..	..	215	..	..	..	..	..	..	..	..	..	..	..	..	..
							46													
12	Rubble base protected with concrete	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	Metre gauge, 40 lb. per yard laid new	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	Do. do. relaid or renewed	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	Do. do. taken up	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	Broad gauge, 50 lb. per yard laid	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	Do. do. relaid or renewed	,,	..	127	..	..	..	..	452	..	..	..	..	..	..	..	..	..	..	..
18	Do. do. taken up	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	Titan gauge, 75 lb. per yard laid new	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	Do. do. relaid or renewed	,,	..	144	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
21	Do. do. taken up	,,	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22	.....		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,944	289	23,040
23	.....																			
24	Approximate expenditure under sub-heads of work	Rs.	..	2,575	70	..	10,553	22	2,453	134	..	..	..	..	..	..	..			

	TONS.	CWTS.	QRS.	LB.
Casks of cement received on works during quarter ending 31st Dec. 1892, containing ..	21	18	3	20
123 do. issued for do. do. do. do. ..				
8,866¼ do. balance in store at end of do. do. do. ..	1,582	10	1	3

Quantity due on indents .. TONS. CWTS. QRS. LB. *Nil.*

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

MADRAS,
26th January 1893.

COMPARISON of expenditure to date with sanctioned estimate for the quarter ending 31st December 1892.

Sub-head of work.	AS PER ESTIMATE SANCTIONED BY SECRETARY OF STATE'S DESPATCH No. 1, DATED 7TH JANUARY 1892.					AS EXECUTED.					Arrears not paid.	Value of work done up to date (columns 11 and 12).
	Quantity.	Rate.	Per.	Cost.	Total.	Quantity.	Rate.	Expenditure. Total up to end of last quarter.	Expenditure. During the quarter.	Expenditure. Up to date.		
1	2	3	4	5	6	7	8	9	10	11	12	13
Expenditure up to 31st December 1884.		RS. A. P.		RS.	RS.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
1. Works	..	..	..	55,09,324		..	..	55,09,324 8 10	..	55,09,324 8 10	..	55,09,324 8 10
2. Establishment	..	..	..	5,29,904		..	..	5,29,904 0 0	..	5,29,904 0 0	..	5,29,904 0 0
3. Tools and plant	..	..	..	5,15,262		..	..	5,15,262 6 0	..	5,15,262 6 0	..	5,15,262 6 0
Total ..	..	..	..	..	65,54,490	..	..	65,54,490 14 10	..	65,54,490 14 10	..	65,54,490 14 10
Revised Estimate.												
4. Alteration and extension of block ground .. Prely.	..	..	..	5,892	5,892	..	..	5,882 3 5	..	5,882 3 5	9 13 6	5,892 0 11
North Pier.												
5. Ordinary rubble deposited from breakwater .. Tons.	13,930	1 12 0	Ton..	24,378		13,930	1 12 0	24,377 9 0	..	24,377 9 0	..	24,377 9 0
6. Ordinary rubble deposited from boats .. .. ,,	206,896	2 0 5	,,	4,19,218		208,362	2 1 5	4,30,966 8 3	..	4,30,966 8 3	4,404 12 2	4,35,371 4 5
7. Concrete blocks for building .. .. C. yds.	51,320	11 8 0	C. yd.	5,90,110		46,587	11 12 6	5,44,092 12 1	4,725 0 4	5,48,817 12 5	..	5,48,817 12 5
8. Setting blocks at commencement of new work .. ,,	2,615	2 1 1	,,	5,415		2,615	2 1 1	5,414 11 2	..	5,414 11 2	..	5,414 11 2
9. Setting blocks from 2,200 to 3,600 feet .. .. ,,	36,520	2 14 3	,,	1,05,569		36,447	2 15 9	1,08,813 14 8	..	1,08,813 14 8	..	1,08,813 14 8
10. Setting blocks at pierhead. ,,	12,185	9 8 11	,,	1,16,424		7,566	9 6 10	66,058 0 1	4,471 14 11	70,529 15 0	674 7 5	71,204 6 5
11. Concrete in mass for filling .. .. .. ,,	263	4 8 3	,,	1,188		262	4 8 3	1,188 0 7	..	1,188 0 7	..	1,188 0 7
12. Wave-breaker blocks .. ,,	288	9 5 7	,,	2,692		288	9 5 7	2,692 0 0	..	2,692 0 0	..	2,692 0 0
13. Wave-breaker concrete blocks .. .. ,,	77,355	10 14 11	,,	8,45,591		67,905	11 6 4	7,47,669 15 2	15,923 4 0	7,63,593 3 2	..	7,63,593 3 2
14. Depositing concrete blocks. ,,	77,932	1 0 0	,,	77,928		67,599	1 0 3	68,556 11 6	69 14 6	68,626 10 0	9 7 8	68,636 1 8
15. Concrete in protection to rubble base .. .. .. ,,	1,986	10 4 1	,,	20,358		1,194	15 12 2	8,262 3 2	7,242 9 3	15,504 12 5	3,310 11 1	18,815 7 7
16. Cramps, iron .. .. No.	331	9 10 1	Each.	3,188		361	8 9 7	2,408 12 4	10 9 4	2,419 5 8	..	2,419 5 8
17. Concrete capping .. C. yds.	16,352	11 3 10	C. yd.	1,83,798		573	19 13 10	11,393 14 7	..	11,393 14 7	..	11,393 14 7
18. Cost of north pier caisson and setting in position and filling same as items 26, 27, 33 and 34 .. ,,	..	..	,,	84,750		..	..	660 13 7	20,087 10 2	20,748 7 9	..	20,748 7 9
Total for North Pier ..	..	..	..	..	24,80,667	..	..	20,22,555 14 3	52,530 14 6	20,75,086 12 9	8,399 6 4	20,83,486 3 1

South Pier.												
19. Ordinary rubble deposited from boats .. .. Tons.	175,078	2 9 0	Ton.	4,49,052		170,774	2 9 10	4,41,646 5 6	22 3 6	4,41,668 9 0	4,925 14 8	4,46,594 7 8
20. Large rubble deposited from breakwater .. .. ,,	8,615	1 12 0	,,.	15,076		8,615	1 12 0	15,075 13 0	..	15,075 13 0	..	15,075 13 0
21. Concrete blocks for building .. .. C. yds.	46,666	11 3 1	C. yd.	5,04,510		39,415	11 3 3	4,41,659 11 2	..	4,41,659 11 2	..	4,41,659 11 2
22. Setting blocks at commencement .. .. .. ,,	2,556	3 1 6	,,	7,912		2,556	3 1 6	7,911 13 3	..	7,911 13 3	..	7,911 13 3
23. Setting blocks from 2,600 to 3,700 feet .. .. ,,	30,169	3 7 11	,,	1,05,461		30,169	3 7 11	1,05,461 9 4	..	1,05,461 9 4	..	1,05,461 9 4
24. Setting blocks at pier head .. .. .. ,,	12,350	11 1 3	,,	1,36,845		6,899	15 2 6	96,315 11 2	5,037 8 10	1,01,353 4 0	185 3 3	1,01,538 7 3
25. Concrete in mass for filling .. .. .. ,,	592	7 9 1	,,	4,555		592	7 9 1	4,554 14 4	..	4,554 14 4	..	4,554 14 4
26. Concrete in cylindrical pier head .. .. .. ,,	2,355	15 0 0	,,	35,326		..	..	..	..	..	..	..
27. Concrete filling in between wood block work and caisson .. ,,	184	15 0 0	,,	2,760		..	..	..	..	..	..	..
28. Wave-breaker concrete blocks .. .. .. ,,	47,281	11 1 6	,,	5,24,070		38,754	11 3 8	4,35,252 11 7	..	4,35,252 11 7	..	4,35,252 11 7
29. Depositing concrete blocks .. .. .. ,,	47,714	1 5 8	,,	64,708		39,237	1 6 5	54,785 5 9	268 9 7	55,053 15 4	..	55,053 15 4
30. Concrete in protection to rubble base .. .. ,,	1,700	9 10 6	,,	16,420		1,107	13 6 11	14,880 11 10	..	14,880 11 10	..	14,880 11 10
31. Cramps, iron .. .. No.	259	11 7 7	Each.	2,972		214	10 12 1	2,293 8 5	8 9 11	2,302 2 4	..	2,302 2 4
32. Concrete capping .. C. yds.	16,247	11 5 8	C. yd.	1,84,495		669	21 2 4	14,146 0 4	..	14,146 0 4	..	14,146 0 4
33. Iron caisson .. .. No.	1	..	,,	18,000		..	..	21,728 2 1	22 4 0	21,750 6 1	..	21,750 6 1
34. Preparing base for and setting cylindrical pier head .. .. ,,	..	..	,,	28,665		..	..	..	..	..	..	..
Total for South Pier ..	..	..	..	..	21,00,826	..	..	16,55,712 5 9	5,359 3 10	16,31,071 9 7	5,111 1 11	16,66,182 11 6
Extending the Rubble Revetment protecting the Foreshore north of Harbour.												
35. Rubble stone revetment .. Tons.	70,500	2 1 0	Ton.	1,45,613		74,953	1 8 11	1,16,374 1 3	194 3 0	1,16,568 4 3	..	1,16,568 4 3
36. Railway lines	..	..	..	9,849		..	..	10,914 10 10	..	10,914 10 10	..	10,914 10 10
Total ..	..	..	..	..	1,55,462	..	..	1,27,288 12 1	194 3 0	1,27,482 15 1	..	1,27,482 15 1
	..	..	..	..	6,11,636	..	..	6,35,930 1 5	3,604 3 1	6,39,534 7 6	480 3 2	6,39,994 10 8
37. Tools and plant	..	..	..	..	2,17,415	..	..	1,72,223 11 4	2,461 13 0	1,74,685 8 4	7,311 2 7	1,81,996 10 11
38. Contingencies	..	..	..	..	5,34,369	..	..	5,66,397 6 8	12,879 13 11	5,19,277 3 7	..	5,19,277 3 7
39. Establishment	..	..	..	..		..	..					
40. Materials at site (concrete blocks in yards) .. C. yds.	..	..	..	..	..	14,168	14 8 2	2,12,854 8 5	—13,589 2 9	1,99,265 5 8	6,282 6 3	2,05,547 11 11

Comparison of expenditure to date with sanctioned estimate for the quarter ending 31st December 1892—*cont.*

Sub-head of work.	As per estimate sanctioned in Secretary of State's despatch No. 1, dated 7th January 1892.				As executed.			Arrears not paid.	Value of work done up to date (columns 11 and 12).
	Quantity.	Rate.	Per.	Cost.	Expenditure. Total up to end of last quarter.	Expenditure. During the quarter.	Expenditure. Up to date.		
1	2	3	4	5	9	10	11	12	13
		Rs. A. P.		Rs.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Extending the Public Breakwater protecting the Foreshore north of Harbour—Cash							6,016 15 9		6,016 15 9
41, Advances to work people									
Total of estimate and value of work done	..	..	..	..	53,44,861 14 1	6,341 3 7	54,08,303 1 8	27,574 1 9	54,35,877 3 5
Reduct probable recoveries due to sales of tools and plant	..	..	..	..	—61,673 14 1	—5,722 3 8	—67,396 1 9	..	—67,396 1 9
Total	..	..	..	..	52,83,188 0 0	57,718 15 11	53,40,906 15 11	27,574 1 9	53,68,481 1 8
Total of revised estimate sanctioned in Secretary of State's despatch *plus* expenditure before 31st December 1884	..	..	..	..	1,18,37,378 14 10	57,718 15 11	1,18,95,097 14 9	27,574 1 9	1,19,22,972 0 6
Estimated cost of additional works found necessary up to end of last quarter	..	..	..	..	..	..	..	..	..
Estimated cost of additional works found necessary during quarter ending	..	..	..	..	..	..	..	..	..
Total estimated cost for completion of works	..	..	..	..	..	..	..	..	..
Deduct total expenditure as per column 11	..	..	..	..	..	..	..	..	..
Total estimated cost of completing work after quarter ending 31st December 1892	..	..	..	..	..	..	..	..	..

Rs. A. P.
Expenditure up to 31st March 1892 from commencement of works .. 1,16,47,374 1 1
Do. during current official year from 1st April 1892 to 31st December 1892 .. 2,48,023 13 8
Total outlay to 31st December 1892 .. 1,18,95,397 14 9

Grant for 1892-93, Rs. 5,77,000.

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

MADRAS,
26th January 1893.

950/26

No. 578, Marine.

Transferred to the Public Works Department.

(Signed) C. A. GALTON,
Ag. Chief Secretary.

24th March 1893.

ORDER—dated 13th April 1893, No. 1018 W., Public Works.

Ordered to be forwarded for the information of the Secretary of State and the Government of India.

[Here enter No. 1019 W., Public Works, dated 13th April 1893.]

(True Extract.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

To the Chairman, Harbour Trust Board.
" Marine Department.

ENDORSEMENT—dated 13th April 1893, No. 1019 W., Public Works.

Copy of the above, with a plan showing the progress of the work, forwarded to the Government of India.

(By Order.)

(Signed) G. T. WALCH,
Ag. Secretary to Govt., P.W.D.

Exd. A. D. Xavier.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated April, 13th.

Recd. *Encl.*

G.O., 13th Apr. 1893, Nos. 1018, 1019 W.

APRIL.

Quarterly Report on the Madras Harbour

Forwarding, with plan, copy of — for period ending 31st December 1892 to the Government of India.

250
27

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONORABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

In continuation of our despatch No. $\frac{18}{3414}$ W., dated 13th December 1892, we have the honour to forward, herewith, the progress report of the Madras Harbour Works for the quarter ending 31st December 1892.

2. The report is accompanied by a plan showing the position and quantity of work done during the quarter.

We have the honour to be,
My Lord,
Your Lordship's most obedient, humble servants,

(Signed) WENLOCK.
(„) H. E. STOKES.
(„) J. H. GARSTIN.

FORT ST. GEORGE,
13th April 1893.

Exd. A. D. Xavier.
Spare Copies

F 52
83

GOVT. OF MADRAS.

PUBLIC WORKS DEPARTMENT.

(Copy.)

LETTER to the Right Honorable the Secretary of State for India.

No. $\frac{3}{1018\ W.}$ dated 13th April 1893.

FORWARDING the quarterly report on the Madras Harbour for period ending 31st December 1892 with plan.

82/256

950/30

HARBOUR TRUST BOARD OFFICE,
MADRAS, 15th March 1893.

No. 4495

From

WARE AUSTIN, ESQUIRE, I.C.S.,
CHAIRMAN, HARBOUR TRUST BOARD,
Madras.

To

THE HON'BLE MR. C. A. GALTON, M.A., I.C.S.,
CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

SIR,

I have the honour to submit, for the information of Government, a report upon the Madras Harbour, for the quarter ending 31st December 1892.

2. Annexed are returns of imports and exports for that quarter, and for the two previous ones; to which is appended the total for the nine months, 1st April to 31st December 1892. These details will be useful for reference and comparison with future returns, though not at present of much service, as no quarterly returns have been hitherto recorded, with which to compare them.

3. These returns would appear to indicate a steady decline in all the chief items of Imports, from foreign ports: with the following exceptions:—(*a*) Coal: up to the end of the year, already shows an increase of 5,000 tons upon the imports of the year 1891-92. It is satisfactory to note that this increased tonnage has been despatched by rail without delay or difficulty. (*b*) Beer in cases, barrels, and hogsheads is about equal to the imports of the previous financial year; and the import of foreign wines and spirits, is also fully maintained; (*c*) Iron has up to the end of the nine months reached a total of 13,730 tons as against 13,737 the total of the year 1891-92.

4. Imports of Piece-goods and twist show a very serious falling off: and Railway material and stores, a continued decline for both lines.

5. Kerosine oil in cases shows a large reduction upon previous years; consequent, probably, upon the anticipated importation of oil in bulk, by tank steamers.

6. Imports from Coast:—gram and peas show a large increase; and the imports of rice and paddy have still continued considerably in excess of normal years: though very much less than during those portions of the year 1891 and 1892, when scarcity prevailed in the Districts.

7. Exports to Foreign Ports decreased in nearly all the chief items, especially in cotton, ground-nuts and jaggery; while indigo, though showing an improvement upon 1891-92, is far behind previous years. The trade in tanned hides and skins is well maintained.

8. Exports to coast-ports:—It is to be observed that nearly 13,900 bags of rice have been re-exported; most of this has been sent south.

9. The tonnage which entered the Harbour during the quarter was as follows:—165 vessels, 284,630 tons net register; and 2 vessels of 2,837 tons were anchored outside the Harbour. This is a small increase in all respects over the previous quarter.

10. I annex statements of receipts and charges, of the Revenue account, for the nine months ending 31st December 1892. The receipts have been fairly

well maintained, under disadvantageous circumstances, due to bad trade attributable to low and fluctuating exchange, and to scarcity of produce for export.

The year opened with a credit balance of Rs. 11,45,648 of which Rs. 4,67,098 were invested in Government 4 % paper, of the par value of rupees five lakhs. On the 31st December the Trust had to credit, in the Bank of Madras Rs. 68,174 ; cash in Office Rs. 2,067 ; and invested in 4 % Government paper, Rs. 9,50,468, of the par value of nine-and-a half lakhs of rupees.

11. With regard to the progress made upon the construction of the Harbour : I submit herewith the plan which accompanied the Engineer's report for the quarter ; and it will be observed, on reference to his remarks, that during the three months, work was only possible below water on fifteen days, out of the ninety-two ; and that the titan cranes were, as usual, brought to the shore by the 15th October, for security during the North-East monsoon ; advantage being taken of the slack season to repair all wear and tear of machinery.

12. The actual advance at the pier heads was small ; being only 5′ 4½″ at the north pier : bringing the total length of bonded wall up to 3,726½ feet ; while at the south pier no advance was made : the ten working days at this pier being devoted to dredging the rubble base.

13. The wave-breaker screen, was continued at the north arm by the deposit of 63 blocks, equal to 1,134 cubic yards of concrete. It is to be noted from para. 13 of the Engineer's report that the estimate of 1½ wave-breaker blocks per foot of pier has been considerably exceeded : and he reports that the excess blocks have fallen forward, and will go to protect the work to be built after the close of the quarter.

14. The foreshore north of the Harbour shows the accretion which is usual during the North-East monsoon ; and at the south there is an apparent advance of the sand to the extent of 140 feet at High-water mark, as compared with 31st December 1891 ; the sea having been exceptionally calm in December 1892.

15. The Board's Engineer, Mr. Lee Pogson, relieved the Acting Engineer Mr. F. J. Wilson, at the end of November : and at their meeting of the 9th December the Trustees passed a resolution placing on record their appreciation of Mr. Wilson's services, during the time he had been in charge of the Harbour Works.

16. Considerable reductions have been made in the Establishment, consequent upon the completion of Blockmaking.

17. At the end of December 1892 the estimated cost of completing the Harbour, with an eastern entrance, was Rs. 6,07,640 ; a balance being available under advances sanctioned by the Secretary of State of Rs. 4,87,988 : the difference being accounted for by anticipated recoveries, on account of sale of tools and plant, which cannot however be realized till after the works are completed.

I have the honour to be,
Sir,
Your obedient Servant,

Secretary.

Chairman, Harbour Trust Board.

950/31

MADRAS HARBOUR TRUST BOARD.

Statement of Receipts and Charges, from 1st April to 31st December 1892.

Opening balance—	Rs. A. P.	Rs. A. P.	Rs. A. P.		
Government Securities (Par value 500,000)		4,67,097 8 10			
1. Cash in the Bank of Madras ...	6,77,942 3 2				
2. General Cash in Office	108 6 6				
3. Advance for Contingencies... ...	500 0 0				
		6,78,550 9 8			
			11,15,648 2 6		
Receipts.					
I. Harbour Dues Collections—					
Beach Import	1,00,018 10 2				
Pier do.	44,177 8 5				
Beach Export	15,729 11 2				
Pier do.	31,987 3 11				
Storage	1,532 10 11				
Wharfage	5,376 5 4				
Cranage	21,546 15 9				
Penalties (Section 84)	... ...				
Demurrage	... ...				
			2,20,369 1 8		
Porterage—					
Beach	37,823 5 8				
Pier	23,279 4 1				
Haulage	6,745 10 2				
Miscellaneous	2,551 5 9				
			70,399 9 8		
Miscellaneous—					
Harbour Trust Properties	1,029 12 11				
Provisions...	455 2 0				
Water Collection	2,740 12 0				
Sundries	1,016 10 2				
			5,242 5 1		
II. Contribution from Port Funds ...			65,000 0 0		
III. Interest realized on Government of India 4 per cent. Promissory Notes.			16,235 9 10		
Total Rupees ...			15,22,894 12 9		
Charges.					
I. Interest (under Section 30)		1,87,039 7 10			
II. Repayment of Loan for Construction of Harbour		1,00,000 0 0			
			2,87,039 7 10		
III. Establishment, &c.—					
1. Chairman's salary	4,000 0 0				
2. Secretary's do.	7,750 0 0				
3. Correspondence Department ...	2,909 11 10				
4. Accounts Department	5,035 3 9				
5. Cash Department...	3,367 12 2				
6. Traffic Department (Shore Staff) ...	21,042 8 5				
7. Preventive Service	19,353 1 4				
8. Do Boatmen ...	969 11 8				
9. Contribution to Government for Pensions	536 0 5				
10. Fees to Trustees	4,650 0 0				
11. Contribution to Provident Fund...	86 8 11				
			69,700 10 6		

IV. Contingencies.—

(a) Subject to Regular Audit.—

	Rs.	A.	P.	Rs.	A.	P.
Postage	47	13	6			
Receipt Stamps	138	9	0			
Telegrams	...	...	...			
Furniture	457	0	0			
Fees for Audit	...	...	...			
Law Charges	87	8	0			
Stationery and Printing	2,051	13	8			
Advertisement charges	2	6	0			
Uniform for Preventive Service ...	1,392	0	0			
				4,177	2	2
(b) Admissible without Detail Audit—						
Overtime Fees to Establishment ...	3,032	1	3			
Do. to Preventive Service and Boatmen	2,054	14	10			
Miscellaneous	3,026	12	7			
				8,113	12	8
				2,323	8	1
V. Refunds	...					
VI. Petty Construction and Repairs.—						
New works...	10,853	12	5			
Repairs	14,175	9	2			
Tools and plant	...	...	...	25,029	5	7
VII. Porterage.—						
1. Coolies, Pier	9,517	7	11			
2. Do. Beach and Custom House ...	31,083	9	10			
3. Madras Railway Company... ...	587	8	6			
4. South Indian Railway Company ...	177	9	10			
5. Coasting Cargo	679	15	3			
6. Boat hire	1,420	3	9			
7. Claims for losses and damage ...	374	12	8			
8. Engine Charges	1,259	12	11			
9. Refunds	442	3	8			
10. Steam Crane Charges	2,074	12	3			
11. Contribution to Cooly Provident Fund	741	0	3			
				48,559	0	10

CONTINGENCIES.—

(a) Subject to Regular Audit.—

Postage	...	...	...			
Receipt Stamps	8	14	0			
Telegrams	...	...	...			
Furniture	36	0	0			
Tarpaulins	152	0	0			
Law Charges	26	8	0			
Stationery and Printing	411	13	0			
Advertisement Charges	...	...	...			
Lighting Pier and yards	1,179	10	0			
				1,814	13	0
(b) Admissible without Detailed Audit—						
Miscellaneous	...			1,428	3	5
Advances to Construction account ...	...			63,000	0	0
Total Expenditure ...	...		...	502,186	0	1
Balance on the 31st December 1892.—						
Government securities (Par value 9,50,000)	...		9,50,467	8	10	
Cash in the Bank of Madras	68,174	7	4			
General Cash in Office	1,566	12	6			
Advance for Contingencies	500	0	0	70,241	3	10
				10,20,708	12	8
Total Rupees ...	...		...	10,22,894	12	9

ACCOUNTS DEPARTMENT,
HARBOUR TRUST BOARD,
10th January 1893

H. E. HOTE ROSS.
Chief Accountant.

I. STATEMENT OF GOODS IMPORTED FROM FOREIGN PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Apparel and Effects ...	Packages...	1,579	1,368	1,217	851	1,347	212	154	429	795
Alum	Barrels ...	424	496	504	1,233	326	156	50	378	584
Asphalte, Tar, & Pitch.	Casks ...	2,296	2,797	3,133	3,623	4,439	913	392	596	1,901
Acids	Cases ...	791	1,484	775	1,362	1,854	799	304	129	1,232
Arms and Guns ...	,, ...	188	516	235	126	442	122	28	49	199
Arrack	Casks ...	665	832	773	346	884	146	312	247	705
Blankets... ...	Bales ...	68	25	36	58	119	4	16	143	163
Beef and Pork ...	Cases ...	1	2	...	...	36	...	...	...	...
Bricks	100 ...	580	420	1,497	222	1,021	170	...	230	400
Beer	Cases ...	7,658	6,697	5,664	6,606	6,123	2,242	2,312	1,841	6,395
	Barrels ...	...	2,160	935	110	1,140	639	138	433	1,210
	Hogsheads ...	7,170	4,424	3,049	8,217	6,808	2,517	1,579	2,159	6,225
Boiler	No. ...	45	33	19	22	51	7	6	10	23
Corks	Bundles ...	181	191	133	38	88	14	13	18	45
Canvas	Bales ...	334	140	77	244	121	59	38	34	131
Candles	Cases ...	11,911	14,273	20,539	18,515	16,637	8,329	9,047	7,366	24,742
Colours	,, ...	898	1,980	1,056	2,698	3,838	465	1,147	1,177	2,789
Confectionery Provisions and Oilmanstores	,, ...	17,425	17,042	14,214	17,896	23,395	5,047	4,253	8,321	17,621
Crockery & Glassware	Crates & Casks	2,990	2,942	3,018	4,099	4,538	1,104	739	802	2,645
Chalk ...	Barrels ...	292	377	95	178	370	15	50	25	90
Cement ...	Casks ...	6,742	17,203	8,868	7,049	14,522	4,815	1,480	968	6,713
Cast Iron Pipes and Tubes ...	Tons ...	451	683	1,009	950	335	435	370	376	1,181
Camphor ...	Tubs ...	2,615	2,675	1,560	1,556	4,730	1,091	1,132	1,067	3,290
Coal, Coke and fuel ...	Tons ...	6,054	18,775	11,992	16,688	...	...	...	...	...
Coal	,, ...	...	...	...	...	33,686	17,283	10,494	11,265	39,042
Coke	,, ...	...	...	...	...	578	101	510	130	741
Crackers... ...	Cases ...	1,200	879	975	1,134	470	...	724	115	839
Copper Plates and Tiles	No. ...	3,883	498	5,012	1,594	4,802	90	109	145	344
Corrugated Iron ...	Packages...	258	51	449	2,913	805	506	486	845	1,837
Dynamite ...	Cases ...	2,000	4,998	6,450	9,230	13,040	3,220	310	405	3,935
Earthenware ...	Crates ...	3,837	2,164	794	1,013	2,318	220	376	920	1,516
Fire Clay ...	Casks ...	43	234	147	23	2,768	56	...	148	204
Flour	Bags and Barrels.	785	483	675	867	1,317	296	275	171	742
Flannel ...	Bales ...	56	74	23	58	54	3	9	9	21
Gunpowder ...	Packages...	700	476	962	1,746	6,667	1,100	2,608	387	4,095
Harmonium ...	Cases ...	8	4	11	9	30	...	3	14	17
Hardware ...	Cases & Casks.	7,670	4,247	2,924	3,954	8,234	1,906	1,331	1,968	4,205
Hops	Packages	615	269	115	129	129	19	17	8	44
Iron	Tons ...	19,902	17,771	12,762	18,138	18,737	6,946	4,923	1,861	13,730
Iron Safes ...	No. ...	411	577	344	241	296	96	36	10	136
Kerosine Oil ...	Cases ...	86,489	248,024	248,563	343,000	397,862	28,400	25,835	82,664	136,899
Lime Water ...	,, ...	126	108	31	45	...	...	...	...	...
Salt	Bags ...	61	363	609	354	445	88	300	7	395
Machinery and Haberdashery ...	Cases ...	3,043	1,040	1,320	1,856	1,609	225	531	262	1,018
Machines	,, ...	6,987	11,728	4,028	7,216	10,665	2,339	2,272	1,468	6,079
Machinery	Tons ...	640	1,753	1,702	1,400	3,000	258	1,000	278	2,271
Nails	Kegs ...	8,971	10,286	1,409	14,287	13,745	4,171	581	2,897	7,649
Oil and Turpentine ...	Drums ...	3,063	6,984	8,893	8,592	7,825	1,936	1,908	1,577	5,421
Piece Goods ...	Piece Goods	76,522	100,495	97,887	83,642	85,079	14,248	11,043	15,477	40,768
	Twist. Cases & Bales						6,000	4,258	4,776	15,034
Paper	Bales ...	5,526	3,286	5,088	4,648	6,546	1,870	1,921	1,743	5,534

STATEMENT OF GOODS IMPORTED FROM FOREIGN PORTS—concluded.

—	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Piano ...	No. ...	102	102	135	123	153	28	28	25	81
Printing Types ...	Cases ...	419	330	348	263	492	409	138	112	659
Pig Lead ...	No. ...	1,013	1,895	2,647	1,420	2,198	266	342	309	917
Paint ...	Kegs ...	5,784	7,837	7,945	7,457	7,758	3,833	3,652	1,140	8,625
Rattan ...	Bundles ...	4,945	949	6,527	883	3,823	2,117	662	573	3,352
Soaps ...	Cases ...	1,544	2,075	2,191	1,996	1,650	172	140	210	522
Salt ...	,, ...	938	488	620	225	383	104	30	115	249
Steel ...	Cases & Casks	...	921	3,577	874	864	281	188	1,278	1,747
Steel Bundles and Bars ...	No.	...	...	...	5,746	11,261	3,836	421	2,508	6,765
Steel Hoop ...	Bundles	...	...	...	12,566	5,567	1,189	...	...	1,189
Shovels ...	,, ...	34	173	13	747	275	197	209	35	441
Sodawater Bottles ...	Crates ...	708	846	997	840	1,395	462	489	473	1,424
Sulphur ...	Casks ...	425	825	831	633	752	335	66	34	435
Shot ...	Kegs ...	306	220	848	240	177	...	1	20	21
Sundries ...	Packages ...	34,366	32,262	39,982	48,364	48,408	6,143	5,047	11,490	23,580
Specie ...	No. ...	1,877	1,330	1,541	1,115	1,229	228	203	208	664
Sugar ...	Bags ...	...	...	...	2,250	2,152	248	20	774	1,042
Slates and Pencils ...	Cases ...	303	1,389	645	4,101	1,242	161	248	186	595
Spelter ...	Cakes ...	7,465	13,343	3,265	11,342	833	2,144	...	3,266	5,410
Saw ...	Cases ...	49	34	7	68	70	30	4	6	40
Twine and Rope ...	Bales & Coils	362	71	221	183	438	65	26	339	430
Tin Plates ...	Boxes ...	3,611	4,194	3,771	4,994	5,608	845	600	866	2,311
Wine and Spirits ...	Cases ...	38,227	45,178	40,479	40,857	37,377	10,793	11,896	10,057	32,746
	Casks ...	...	2,094	3,240	2,739	863	111	327	32	470
	Puncheons ...	2,195	256	892	149	369	109	51	332	492
Window Glasses ...	Cases ...	4,498	1,987	5,158	8,297	5,972	2,779	2,705	1,579	7,063
White and Red Lead ...	Kegs ...	1,040	859	969	495	681	144	213	319	676
Yellow Metal ...	Cases ...	3,141	907	2,722	4,309	3,076	451	447	1,139	2,037
Zinc Sheets ...	Packages ...	1,096	1,221	1,174	595	2,749	476	371	361	1,208
Horses ...	No. ...	619	837	696	611	816	3	297	336	636
Ponies ...	,, ...	3	3	6	17	70	3	53	32	88
Cows ...	,, ...	2	5	5	...	59	...	...	...	11
Dogs ...	,, ...	21	14	13	10	13	...	...	3	3
Elephants ...	,, ...	...	...	1	25	10	...	...	...	...
Two-wheeled carriage ...	,, ...	...	...	...	...	...	...	4	4	4

II.

STATEMENT OF STORES IMPORTED BY THE MADRAS RAILWAY COMPANY.

—	Packages.	1887-88	1888-89.	1889-90	1890-91.	1891-92.	Quarter ending 30th June 92.	Quarter ending 30th Sept. 92.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Stores ...	Packages ...	186,911	34,697	81,723	51,879	82,105	13,429	2,111	7,293	22,833
	Tons ...	...	...	...	...	...	389	...	110	499
Fuel ...	,, ...	...	...	171	467	3,605	...	...	...	...
Coke ...	,, ...	4,884	5,387	3,753	4,073	...	...	...	...	141
Coal ...	,, ...	603	997	645	839	1,437	141	...	...	...
Timber ...	,, ...	718	52	2,702	4,301	27	...	...	73	684
Fire Brick ...	100 ...	831	1,622	1,483	3,800	2,477	569	42	98	98
		...	...	141	140	165	115	...	...	...

III.

STATEMENT OF STORES IMPORTED BY THE SOUTH INDIAN RAILWAY COMPANY.

—	Packages.	1887-88	1888-89	1889-90.	1890-91.	1891-92	Quarter ending 30th June 92.	Quarter ending 30th Sept. 92.	Quarter ending 31st Dec. 1892	Total for nine months ending 31st Dec. 1892.
Stores ...	Packages ...	140,270	109,131	694,812	618,937	68,282	5,718	4,901	4,083	14,702
Fuel ...	Tons ...	...	856	...	...	...	...	...	...	...
Coke ...	,, ...	...	...	...	...	...	...	...	...	...
Coal ...	,, ...	3,091	5,276	6,582	5,980	14	...	...	...	...
Timber ...	,, ...	...	10	...	...	...	...	...	...	...
Boiler ...	No. ...	...	...	10	55	4	...	5	...	5

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IV. STATEMENT OF GOODS IMPORTED FROM COAST PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Apparel and Effects	Packages ...	149	378	414	631	451	105	55	78	238
Alum ...	Barrels ...	15	51	56	...	10	5	76	106	187
Acids ...	Cases ...	50	149	11	99	89	11	5	17	33
Animals ...	No. ...	...	...	...	210	...	10	...	...	10
Arms and Guns ...	Cases ...	21	15	49	10	45	4	1	5	10
Boilers ...	No. ...	2	3	1	7	2	...	...	...	...
Bricks and Tiles ...	100 ...	1,577	120	1,239	1,630	1,396	...	10	47	57
Coffee ...	Bags ...	757	715	401	349	379	366	95	14	475
Candles ...	Cases ...	995	1,871	682	...	...	...	...	...	...
Colours ...	,, ...	635	1,667	1,067	1,541	1,223	378	861	167	1,406
Crockery and Glassware ...	,, ...	216	782	413	305	322	96	87	109	291
Coal ...	Tons ...	1	2,351	186	14,884	13,249	600	3,692	1,985	6,277
Carpets ...	Bales ...	137	112	178	187	77	20	25	22	67
Camphor and Benjamin ...	Tubs ...	1,647	1,483	1,585	4,640	682	248	419	433	1,100
Copra ...	Bags ...	2,844	191	124	...	32	...	...	...	...
Crackers ...	Cases ...	...	10	...	...	...	...	...	...	...
Copper ...	,, ...	772	1,350	1,061	...	1,667	356	384	168	908
Do. ...	Tiles & Ingots ...	...	...	11,053	1,071	96	...	...	421	421
Catch & Lac ...	Packages ...	...	...	...	5,703	4,415	369	725	1,540	2,634
Cocoanuts ...	No. ...	10,389	900	600	...	3	...	...	...	...
Earthenware ...	Crates ...	97	109	30	23	852	1,424	...	1,496	2,920
Do. ...	Pipes ...	690	2,080	...	...	2,626	886	2,839	300	3,525
Firewood ...	Tons ...	396	1,212	892	...	...	...	...	...	...
Flour ...	Bags & Barrels	1,689	2,819	4,352	4,177	7,218	2,334	2,389	3,501	8,224
Gunnies ...	Bales	7,167	7,993	11,863	10,786	7,930	281	1,024	2,097	3,402
Gram and Peas, &c.	Bags ...	1,68,359	120,942	191,367	225,186	271,092	75,695	1,09,144	...	...
Garlic ...	,, ...	3,897	1,890	7,077	8,528	2,945	20	970	225	1,215
Hardware ...	Cases ...	737	542	469	605	641	120	58	315	493
Horns ...	Bundles ...	1,068	702	1,043	681	880	239	311	244	794
Hides ...	Bales ...	7,148	4,449	7,400	6,936	6,127	3,351	2,311	2,189	7,851
Iron ...	Tons ...	639	277	457	400	231	48	49	96	193
Iron Safes ...	No. ...	6	65	47	19	31	10	11	2	23
Leaves ...	Bundles ...	6,945	5,116	5,796	5,574	6,508	773	1,522	1,030	3,325
Machinery ...	Tons ...	6	171	109	251	158	15	6	37	58
Millinery and Haberdashery ...	Cases ...	155	254	268	189	208	41	58	50	149
Oil and Turpentine.	Drums ...	2,234	2,794	2,540	2,846	8,346	1,686	1,367	1,197	4,250
Paddy ...	Bags ...	...	...	...	...	...	...	34,781	14,429	49,210
Piece Goods ...	Cases and Bales	5,080	7,806	6,257	3,028	3,502	514	969	1,592	3,069
Paper ...	Bales ...	3,223	3,820	5,003	3,983	3,125	662	1,188	1,582	3,432
Paint ...	Kegs ...	49	242	1,098	99	224	14	210	155	379
Piano ...	No. ...	7	6	7	6	15	4	...	1	5
Rice ...	Bags ...	42,400	26,769	69,446	223,751	1,147,948	76,303	15,699	26,031	118,033
Rose Water ...	Cases ...	877	1,409	1,867	715	1,434	762	557	231	1,550
Seeds ...	Bags ...	14,285	13,066	13,212	12,044	30,406	7,998	6,745	4,798	19,541
Skins ...	Bales ...	8,314	5,729	5,727	5,387	6,199	1,130	948	1,006	3,084
Silk ...	,, ...	1,045	837	883	823	1,051	170	280	177	627
Sandalwood ...	Bundles ...	227	145	297	63	143	8	26	9	43
Sugar ...	Bags ...	4,163	6,900	2,816	2,134	1,381	158	190	227	575
Specie ...	No. ...	107	201	184	37	202	14	40	27	81
Sundries ...	Packages ...	44,567	43,462	38,472	40,653	47,533	13,376	10,059	12,379	35,814
Soap ...	Cases ...	12	105	179	363	445	6	...	17	23
Sulphur ...	Casks ...	...	48	173	...	471	334	...	137	471
Spice ...	Packages ...	...	...	...	3,674	359	182	68	813	568
Twine and Rope ...	Bales and Coils	1,515	1,164	541	942	839	107	246	292	645
Tin Plates ...	Boxes ...	630	1,118	1,322	703	1,807	93	289	303	685
Twist ...	Bales ...	3,782	4,064	3,431	1,388	1,126	209	600	168	977
Turmeric ...	Bags ...	4,635	5,709	8,421	10,751	7,224	1,036	1,515	1,107	3,758
Timber ...	Tons ...	14,273	17,277	17,889	16,650	15,137	2,500	2,583	2,284	7,220
Tea ...	Cases ...	3,850	1,421	3,812	4,780	1,821	2,272	864	261	3,397
Yellow Metal ...	,, ...	636	155	342	899	6	199	107	197	497
Horses ...	No. ...	2	...	...	...	1	...	...	...	...
Two-wheeled carriages	No. ...	...	...	...	...	...	...	2	...	2

V. STATEMENT OF GOODS EXPORTED TO FOREIGN PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Beer and Ale	Cases	22	13	30	...	18	2	...	...	2
	Casks	21	...	2	...	60	...	7	...	7
	Hogsheads	...	1	1	...	3	...	...	...	...
Cinchona Bark	Bales	2,791	2,185	1,299	1,346	471	110	327	32	469
Chillies	Bags & Bundles.	6 333	2,225	3,262	1,362	2,760	...	...	9	9
Cigars	Cases	1,120	1,232	1,423	942	1249	146	139	92	377
Coffee	Bags	14,879	23,456	15,515	22,708	23,764	12,152	3,405	41	15,598
Cotton	Bales	82,394	55,173	101,837	77,922	48,202	8,512	8,882	6,422	23,821
Cotton Twist	,,	2,893	3,960	5,956	8,271	4,229	2,294	2,907	5	5,206
Coriander and Omum Seeds	Bags	3,891	9,281	11,810	1,885	8,218	361	260	899	1,520
Carpets	Bales	826	645	725	524	418	50	90	56	196
Coal	Tons	50	182	115	...	905	213	...	100	313
Deer Horns	Packages	866	874	1,866	1,311	1,571	361	743	263	701
Explosive	Cases	9	14	25	...	21	...	1	...	1
Firewood	Tons	8	23	...	...	...	...	...	...	...
Four-wheel Carriage.	No.	3	30	3	2	8	1	1	...	2
Ground Nuts	Bags	1,05,529	95,642	206,096	190,320	93,132	11,610	11,110	82	22,802
Gram, Peas, &c.	,,	3,379	937	1,454	...	519	...	...	136	136
Horns, Cow and Buffalo	Tons	242	199	66	84	62	15	4	3	22
Hides, Tanned	Bales & Bundles	20,376	17,858	17,582	16,160	21,848	5,444	7,352	3,898	16,694
Indigo	Cases & Chests	27,482	23,760	22,[illegible]	[illegible]	14,622	2,702	2,781	10,802	16,[illegible]
Jaggery	Bags	28,258	23,520	111,032	54,495	28985	13,730	...	6,447	20,177
Myrabolams	Bags	1,744	198	452	2,576	235	60	...	31	91
Miscellaneous	Packages	10,581	23,307	17,990	16,325	37,808	8,290	8,889	4,041	21,220
Onions	Bags & Baskets	6,089	7,979	9,078	12,622	21,964	4,158	935	24	5,117
Oil	Casks	983	331	587	59	434	18	4	25	47
Piece Goods	Bales and Cases	4,038	3,372	3,419	5,843	6,205	1,075	1,251	1,540	3,866
Potatoes	Bags & Baskets	2,882	3,357	2,103	2,234	2,487	157	...	119	276
Peonac	Bags	14,847	13,116	16,787	25,133	35,880	5,962	4,165	3,764	13,891
Piano	No.	3	10	8	3	41	5	2	3	10
Paddy	No.	...	...	...	...	...	...	...	3	3
Rice	Bags	5,250	17,589	65,175	2,059	1,138	1	...	2,639	2,640
Redwood	Tons	1,145	1,382	2,652	1,809	699	342	331	273	946
Seeds, Gingelly and Castor	Bags	1,52,295	20,137	80,411	19,021	1,313	652	65	7,639	8,356
Skins, Sheep and Goat, Tanned	Bales	31,240	32,498	30,899	31,269	32,104	7,185	10,035	7,207	24,427
Sandalwood	Bundles	840	672	697	1,729	1,534	43	...	1	44
Spirits and Wine	Cases	715	135	231	...	392	...	18	1	19
	Casks	49	5	87	...	377	1	39	25	65
	Puncheons	...	...	18	...	...	...	...	...	...
Sugar	Bags	912	1,112	7,296	...	599	21	1	62	84
Species	Boxes	164	153	83	55	94	21	...	9	30
Tamarind	Bundles	3,572	8,277	2,549	1,156	6,445	1,969	1,467	61	3,497
Turmeric	Bags	24,230	1,698	1,526	...	2,159	217	20	374	611
Tea	Cases	4,300	4,275	3,822	2,384	2,265	424	785	370	1,579
Two-wheel Carriage.	No.	...	...	...	...	2	1	...	...	...
Wool	Bales	991	970	1,048	1,196	1,021	436	448	207	1,091
Yellow Metal	Tons	98	3	3	...	107	...	...	...	...

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VI. STATEMENT OF GOODS EXPORTED TO COAST PORTS.

	Packages.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Beer and Ale	Cases	262	240	456	280	352	81	86	58	225
	Casks	28	16	110	139	159	15	10	45	70
	Hogsheads	...	161	10	47	7	1	5	9	15
Cinchona Bark	Bales	80	178	186	...	395	...	84	...	84
Chillies	Bags & Bundles	2,341	2,908	5,585	4,792	2,064	1,264	1,126	280	2,670
Cigars	Cases	857	1,488	1,298	1,345	1,418	311	277	288	876
Coffee	Bags	567	506	574	605	507	806	334	198	1,338
Cotton	Bales	2,977	1,972	4,761	8,521	5,721	832	1,312	573	2,717
Cotton Twist	,,	2,923	3,816	3,075	5,103	4,698	784	950	3,123	4,857
Coriander and Omum Seeds	Bags	2,435	2,728	7,071	4,783	2,970	1,531	1,012	582	3,125
Cement	Casks	...	...	...	...	...	...	...	8,611	8,611
Carpets	Bales	10	31	26	45	68	14	11	14	39
Coal	Tons	249	...	94	976	275	25	...	75	100
Deer Horns	Packages	4	85	7	84	108	1	...	100	101
Explosive	Cases	152	201	303	55	2,668	315	32	26	373
Eggs	Pots	2,631	2,717	3,882	2,801	1,165	157	193	379	729
Firewood	Tons	67	28	8	...	2	...	...	...	...
Four-wheel Carriage.	No.	21	26	9	34	21	9	5	5	19
Groundnuts	Bags	22,711	30,757	20,996	61,463	27,790	7,797	731	2,352	10,880
Gram, Peas, &c.	,,	701	15,201	8,987	3,568	521	66	587	33	686
Horns, Cow and Buffalo	Tons	70	198	336	30	310	28	68	112	208
Hides	Bales & Bundles	246	407	495	506	379	111	109	142	362
Indigo	Cases & Chests	227	405	829	412	165	...	16	600	616
Iron	Tons	324	989	713	850	2,244	885	1,517	26	2,428
Jaggery	Bags	433	376	296	...	258	86	4	35	125
Kerosine Oil	Cases	250	1,516	4,680	3,465	19,327	212	216	11	439
Myrabolams	Bags	714	322	139	595	1,064	1	6	12	19
Miscellaneous	Packages	26,540	12,410	20,868	36,308	50,516	12,262	11,366	12,071	35,699
Onions	Bags & Baskets	15,838	9,705	11,516	21,141	22,442	2,036	4,512	26,480	33,028
Oil	Casks	1,771	790	1,844	1,231	807	285	43	238	566
Piece Goods	Bales & Cases	3,273	3,429	3,613	6,259	5,615	1,566	2,336	1,779	5,681
Potatoes	Bags & Baskets	14,485	24,229	21,992	26,470	28,087	918	7,881	14,823	23,622
Peonac	Bags	3,121	2,219	1,469	4,752	4,770	6,023	3,355	3,951	13,329
Piano	No.	...	5	42	24	23	2	4	8	14
Paddy	Bags	18,655	27,149	4,019	11,426	...	...	250	1,300	1,550
Rice	,,	3,370	6,790	8,198	8,098	5,448	3,076	1,024	12,678	17,678
Redwood	Tons	223	62	194	...	119	48	630	6	693
Seeds, Gingelly and Castor	Bags	56,137	19,874	28,756	57,157	16,803	401	252	633	1,286
Skins, Sheep & Goat, Tanned	Bales	635	510	758	1,271	721	90	166	253	509
Sandalwood	Bundles	998	224	342	1,856	153	54	9	162	225
Spirits	Cases	2,629	2,143	2,098	3,049	2,982	1,255	772	1,023	3,050
	Casks	44	150	162	250	727	86	210	196	492
	Puncheons	...	2	16	54	13	1	2	95	98
Sugar	Bags	265	460	2,807	2,093	773	564	338	268	1,170
Species	Boxes	401	278	164	154	236	169	132	169	470
Tamarind	Bundles	5,423	2,010	3,598	17,197	3,624	4,340	1,254	725	6,319
Turmeric	Bags	11,491	8,972	463	4,719	19,258	5,218	2,762	3,751	11,731
Tea	Cases	51	55	544	298	341	17	15	15	47
Two-wheel Carriage.	No.	4	14	8	27	15	4	2	4	10
Wool	Bales	9	37	567	475	769	147	190	118	455
Yellow Metal	Tons	23	88	25	47	53	12	4	51	67

VII. STATEMENT OF STORES, &c., IMPORTED BY GOVERNMENT.

Department.	Description.	Class.	1887-88	1888-89	1889-90	1890-91	189192.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Accountant-General.	Specie Silver.	Boxes	2,423	1,789	1,109	1,176	403	100	...	370	470
	„ Copper.	„	352	335	1,320	3,475	5,100	...	...	...	...
	Silver & Copper Notes ...	„	...	174	...	...	...	...	...	...	...
	Packages ...	No.	4	19	21	8	32	...	...	10	10
			7	...	1	...	27	...	1	...	1
State Railway ...	Packages & Pieces										
	Rails ...	„	11,940	593	...	3	...	...	...	...	...
	Sleepers ...	„	26,602	...	...	...	...	...	...	...	...
	Bridge Works ...	Tons	78,513	...	...	...	...	...	...	...	...
			267	...	...	...	...	...	...	...	...
Public Works' Department	Boilers ...	No.	2	2	...	...	2	...	...	...	...
	Coal ...	Tons	...	106	44	60	50	...	20	...	20
	Iron ...	„	63	220	442	250	271	...	...	...	...
	Stores ...	Pkgs.	3,084	1,691	1,127	2,049	15,148	2,023	1,130	601	3,754
Ordnance	Coal ...	Tons	135	86	1,968	939	...	...	...	...	...
	Ammunition ...	Boxes	2,169	1303	51	...	2,148	...	...	...	...
	Stores ...	Pkgs.	11,936	15,838	22,268	22,598	13,017	4,007	1,152	2,422	7,641
Madras Harbour Works	Cement ...	Casks	11,103	35,764	40,241	30,375	1,869	...	...	...	...
	Stores ...	Pkgs.	789	321	1,069	898	8,869	...	...	...	...
	Coal ...	Tons.	...	...	496	380	...	...	...	...	...
Clothing	Packages ...	No.	2,525	1,772	2,831	1,227	1,983	589	635	302	1,526
Police ...	„ ...	„	211	248	185	325	122	98	51	...	149
Salt Revenue ...	„ ...	„	63	75	115	190	272	220	56	...	276
Post Office ...	„ ...	„	1,783	950	1,858	1,739	1,119	198	249	41	488
Medical ...	„ ...	„	2,879	1,323	1,616	1,501	1,779	415	50	24	489
Telegraph ...	„ ...	„	51,690	8,832	16,414	19,211	34,768	1,752	1,340	3,819	6,911
Stationery ...	„ ...	„	1,263	1,435	1,439	1,647	1,661	186	699	1,866	2,751
Stamps ...	„ ...	„	3,841	1,811	1,779	1,944	2,014	388	2,013	21	2,422
Commissariat ...	„ ...	„	147	32	32	2,414	161	7	126	1	134
Gazette Press ...	„ ...	„	91	52	182	511	729	117	107	51	275
Marine ...	„ ...	„	270	52	31	...	...	...	...	...	...
Revenue Survey ...	„ ...	„	103	252	52	32	297	73	133	...	206
Agriculture ...	„ ...	„	28	1	6	23	380	209	101	...	310
Government Central Museum ...	„ ...	„	18	6	4	10	15	3	2	...	5
Under-Secy. to Government ...	„ ...	„	81	87	84	94	235	439	28	6	473
Supt. of Prisons ...	„ ...	„	6	3	9	...	1	2	16	2	18
Revenue Board ...	„ ...	„	36	65	36	139	424	...	2	1	3
Forests ...	„ ...	„	66	31,811	175	1,318	1,196	2	...	...	2
Bank of Madras ...	Specie Silver.	Boxes	...	...	3	...	...	...	...	...	...
	„ Copper	„	...	...	...	...	...	...	...	...	...
Presidency College	Packages ...	No.	...	...	52	...	...	...	...	...	...
School of Arts ...	„ ...	„	...	...	12	40	28	7	...	...	7
Sanitary Commissioner ...	„ ...	„	...	2	2	...	3	...	...	...	...
Inspector of Cattle Diseases ...	„ ...	„	...	1	...	...	...	...	...	...	...
Chemical Examiner ...	„ ...	„	...	...	...	...	...	...	...	...	...
Medical College ...	„ ...	„	49	116	19	...	9	...	...	3	3
Dy. Collector ...	„ ...	„	11	25	15	32	31	2	6	...	8
Camp Equipage ...	„ ...	„	12	58	2	64	73	...	2	...	2
Astronomer ...	„ ...	„	5	...	1	14	9	1	10	...	11
Presidency Pay ...	„ ...	„	4	11	6	...	...	...	...	...	...
Mint ...	„ ...	„	1	8	6	23	2	7	...	...	7
Registration ...	„ ...	„	19	24	6	13	3	5	3	...	8
Director of Public Instruction ...	„ ...	„	42	...	2	32	7	1	3	...	4
Superintendent Railway Depot ...	„ ...	„	...	...	9	5	9	...	128	...	128
Harbour ...	„ ...	„	...	...	...	...	...	...	...	270	270
Resident at Mysore in Bangalore ...	„ ...	„	...	...	...	...	...	...	...	...	...
Secretary for Berar Hyderabad ...	„ ...	„	...	...	...	...	...	...	...	...	...

VIII. STATEMENT OF STORES, &c., EXPORTED BY GOVERNMENT.

Department.	Description.	Class.	1887-88.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Total for nine months ending 31st Dec. 1892.
Accountant General	Specie Silver.	Boxes.	342	118	174	20	411	27	9	...	36
	„ Copper.	„	176	136	216	330	965	173	25	...	198
	„ Notes.	„	4	5	4	10	6	4	3	...	7
	„ Packages	No.	1	1	1	6	4	...	1	...	1
Bank of Madras	„ Silver	Boxes.	...	...	10	...	34	...	...	...	...
„ „	„ Copper.	„	...	...	37	...	...	33	29	...	62
Ordnance	Packages & Pieces.	No.	7,476	5,765	23,038	6,564	8,595	1,083	1,123	349	2,555
Public Works Department	„ ...	„	1,100	4,420	18,358	429	1,784	141	23	56	220
Clothing	„ ...	„	1,401	916	1,018	1,254	1,327	225	483	32	740
Police	„ ...	„	690	749	849	727	889	95	495	98	688
Salt Revenue	„ ...	„	152	330	493	306	591	84	293	96	473
Medical	„ ...	„	1,794	1,049	1,868	1,552	1,367	518	273	21	812
Telegraph	„ ...	„	4,078	355	1,125	9,462	8,845	35	120	21	176
Stationery	„ ...	„	915	777	398	799	693	153	132	39	324
Stamps	„ ...	„	177	165	171	195	220	53	45	24	122
Commissariat	„ ...	„	5,881	5,128	5,179	7,761	7,971	740	788	1,763	3,291
Gazette Press	„ ...	„	328	445	567	476	526	114	128	86	328
Marine	„ ...	„	926	419	307	268	390	92	122	7	221
Revenue Board	„ ...	„	29	26	52	79	77	18	5	...	23
Revenue Settlement	„ ...	„	154	157	55	87	51	29	33	8	70
Revenue Survey	„ ...	„	80	51	77	74	75	36	233	23	312
Superintendent of Prisons	„ ...	„	63	151	91	71	69	35	90	11	136
Registration	„ ...	„	29	80	61	61	66	...	...	...	...
Conservator of Forests	„ ...	„	35	28	49	31	34	3	4	1	8
Quarter-Master General	„ ...	„	28	...	...	...	...	...	3	...	3
Government Central Museum	„ ...	„	9	7	6	9	10	4	15	...	19
Deputy Collectors	„ ...	„	12	20	...	...	2	9	...	...	9
Camp Equipage	„ ...	„	244	...	...	...	...	...	...	...	...
Government Astronomer	„ ...	„	6	5	2	...	...	11	2	1	14
Agriculture	„ ...	„	7	...	...	5	15	2	1	...	3
General Hospital	„ ...	„	3	...	...	...	...	...	...	...	...
State Railways	„ ...	„	98	293	...	...	100	...	...	...	...
Inspector of Cattle Diseases	„ ...	„	9	11	11	3	3	1	...	...	1
Chemical Examiner	„ ...	„	1	...	1	3	...	...	1	...	1
Director of Public Instruction	„ ...	„	2	9	2	16	10	3	1	...	4
Registrar of University	„ ...	„	12	14	16	16	13	...	...	3	3
Collectors	„ ...	„	1	...	...	...	10	...	...	...	...
Curator of Government Garden, Ooty	„ ...	„	2	...	2	12	11	...	...	...	...
Engineer, H. T. Board	„ ...	„	...	...	1	...	...	...	...	...	...
Crown Officer, High Court	„ ...	„	...	1	8	13	14	6	3	...	9
School of Arts	„ ...	„	...	1	...	...	...	...	...	...	...
Secretary to Govenrment, Public Department	„ ...	„	...	4	1	...	2	...	...	...	...
Registrar-General of Births, Deaths and Marriages	„ ...	„	...	...	...	...	...	...	...	...	...
Inam Commissioner	„ ...	„	...	...	...	...	1	...	...	...	...
Consulting Engineer to Government Railways	„ ...	„	...	...	...	4	36	26	...	...	...

No 1517 P.

G. R. P. LLOYD,
Acting Traffic Manager,
Harbour Trust Board.

To

THE SECRETARY,
Harbour Trust Board.

950
36

Report of Progress on the Madras Harbour Works for the Quarter ending 31st December 1892.

Accompanying this report are the following plans and statements;—

(*a*) A plan of the Harbour to a scale of 200 feet to an inch, showing in red the position and quantity of work done during the quarter. The contours in half fathoms, shown on this plan are those of the last complete Marine Survey of 1889.

2. The positions of the high water marks of the 31st December 1892 and that of the previous twelve months, both to the North of the Revetment and the South of the Harbour, are shown for comparison.

(*b*) A statement comparing the expenditure on different sub-heads of work, up to the end of the quarter with the provisions of the sanctioned estimate.

(*c*) A statement showing work done under different sub-heads and particulars of cement received and issued.

3. The various heads of work, &c., throughout the Harbour Works, are reported on as follows:

4. **General.**—The quarter under review, October, November, and December, is the one in which the least work at sea is possible, owing to the setting in of the north east monsoon from the 15th October, by which date all the Titan Cranes, should be withdrawn to shore for security, thus only 15 working days are available for work below water during the quarter.

5. From the 15th October, advantage is taken of this slack season to put into repair all wear and tear of machinery, to be in readiness for the usual heavy work, general in the following quarter.

6. **North Pier Superstructure.**—At the North Pier the Crane was at work for 9 days, out of the possible 15 working days in October; and then the Crane was run to shore for the monsoon, by the 13th October, where it remained.

7. Of the 15 days, 2 were holidays, 2 Sundays, 4 days devoted to dredging 3 days to depositing wavebreaker blocks, and 2 days to setting blocks; and on these two days 23 superstructure blocks were set in position, which completed course No. 247 and advanced the curved portion of the North Pier Head by 5′ 4½″, which brought the total length of bonded wall up to 3726½ feet from the first block set on shore.

8. Ten wrought iron rail cramps were fixed in the upper blocks of the superstructure, and the permanent way was repaired, and the necessary renewals made.

9. At the close of the quarter there remained 13 courses or 69′ 4″ of superstructure to be built before the end of the blockwork of the Pier Head is reached, or the point where the Caisson is to terminate the Pier Head.

10. Owing to the more rapid progress the North Pier has made over South Arm since the suggestion was made in Sir A. M. Rendel's minute of 25th February 1890 to finish the South Pier off, with a Caisson, and the North Pier in blockwork temporarily; in case the entrance should eventually be altered; it is now quite evident the North Pier will be completed first, and as the Crane for setting the Caissons is at the North Pier, and apparently no doubt now exists, as to which is to be the final entrance to the Harbour; it would be more economical to complete both Piers with Caissons, without delay and look to Docks for any further improvement necessary in the state of the sea, inside the Harbour in rough weather.

11. The cost of finishing off both Piers with concrete in Caissons has been included in the estimate and sanctioned, and as the ironwork is already on the works, it is only necessary to record sanction to finish off both Piers with the Caissons already supplied, as soon as opportunity occurs.

12. **Wavebreaker.**—Sixty three wavebreaker blocks, equivalent to 1134 cubic yards of concrete were dropped in, to form the wavebreaker protection between 3697' and 3726½' feet on this Pier.

13. The estimated quantity is 1½ wavebreaker blocks per lineal foot of pier which would mean 44 blocks over this length of pier protected in the quarter, so that the excess of 19 blocks deposited, have fallen forward and go to protect in advance the work to be built next season. In the absence of this information the quantities would show an excess upon the estimate, against the actual feet of Pier Head built; but further progress will correct this.

14. Adjustments will have to be made during the next quarter, in the quantities of work done, as compared with the sanctioned estimate, as the quantities and rates of the 24 feet wall, and those of the wider Pier Head, have all been jumbled up together, and a true comparison with the estimate cannot be shown at present, and therefore the statement (*b*) submitted herewith is only approximate in quantities and rates, but correct in total expenditure.

15. **Apron or Protection to Rubble Base.**—The North Pier Rubble Base was paved or consolidated with Portland cement concrete for a length of 46 feet of completed work, and 263 feet of base was prepared for the work, and the outer line of blocks built under water, over this length.

16. The space between the Pier and the outer line of blocks over the length of 263 feet has yet to be paved with concrete, which accounts for so small a quantity of concrete used, as compared with the finished work elsewhere.

17. **South Pier Superstructure.**—Very little work was done at the South Pier; of the 12 working days, the Titan Crane was in position, before being withdrawn to shore for the monsoon, two days were lost owing to the sea being too rough for work, and the remaining 10 days were devoted to dredging up the excess rubble base and setting one superstructure block, which the undersigned has since had to raise again, to lower it nearly one foot, therefore there is no progress to record during the quarter.

18. Four rail cramps were fixed in the upper blocks set last quarter; and 452 lineal feet of temporary line and sidings were removed.

19. At the end of the quarter there remained 16 courses or 85' 4" of Superstructure to be built up to the end of the blockwork, or point at which the cylindrical Caisson, which terminates the Pier Head, is to commence.

20. **Blockmaking.**—There was no blockmaking during the Quarter as all the required superstructure blocks have been made, but this work will have to be resumed again shortly, as a few special blocks will be necessary to enable the Caisson to be reached with the Titan Cranes, and as soon as the Caisson is in position, a very rapid out-turn of concrete will be required to fill it, with the least possible delay.

21. **Foreshore North of Harbour.**—From the high water mark of the 31st December 1892 it will be seen that accretion is going on, and this action will probably continue till about the end of March when the usual bay will begin to form, which will increase until the sea attacks the revetment and gradually flattens the front slope of the work. In many places the revetment is very weak, and during the ensuing quarter will require feeding to enable it to withstand the heavy seas of May.

22. It is therefore proposed to feed this revetment during February and March, where the section is weak, to the extent of the balance or saving upon the already sanctioned estimate, which is Rs. 27,836.

23. **Foreshore South of, and depth within Harbour.**—A new and exhaustive survey to be repeated on exactly the same lines as the Marine Survey of 1889, will be made in 1893, and will be submitted with other data collected by the undersigned, which is being plotted and will show correctly the true rate of accretion of sand for years past, on the south of the South Pier, in cubic feet, from year to year. From this information, a probable date can be fixed when the high water mark will reach the end of the inner straight of the Southern Arm, if the accretion proves to have been regular below water level. The rate of advance of this accretion above sea level has appeared rapid for some years past, but the time has now come when it will materially diminish, as the depth of water to be silted up becomes greater, and the only true means of proving the rate of advance in future is being worked out and plotted. The high water mark is a very rough guide as to what is taking place at sea level, as a rough sea will move the high water level east or west in a few hours, and from this it will be seen that the high water mark however, accurately recorded, is of little value.

24. The high water mark has, as usual been recorded and is shown on the plan, in comparison with the high water mark of the same date last year, and there would appear to be an advance of sand of 140 feet above water level, but there is nothing on record to show the state of the sea last December, while in December 1892 the sea was exceptionally calm. No new method for recording the high water mark has been recorded, as reported in para. 8 of the last report.

25. **Establishment.**—On the 26th November 1892 the Acting Engineer Mr. F. J. Wilson, was relieved by the undersigned, on his return from 12 months sick leave on medical certificate, granted by the Trustees from the 26th November 1891.

26. The new Foreman Diver Mr. J MacDonald, who was appointed by the India Office; arrived by the S. S. "Bengal" and took over charge of the diving

staff on the 12th December 1892, in the place of Mr. C. Underdown, whose resignation was accepted by the Trustees, and left the works on the 1st April 1892, during this interval Mr. W. S. Boteler held charge of the diving operations, in addition to his own duties as General Foreman.

27. Considerable reductions, in the works establishment, were made by the undersigned throughout the works on account of the completion of block-making and general slow progress on the works, during the monsoon months.

28. **Miscellaneous.**—During the quarter a good deal of work was in hand for the Traffic Department of the Harbour Trust Board, three latrines were built at a cost of Rs 336 and the Deputy Traffic Manager's Bungalow at Cassimode, was repaired at a cost of Rs. 507 while all Cranes and Trucks, &c., were maintained in good working order by this department as usual. Of the work in hand for the Traffic Department, is the building of 15 new Pier Trucks at cost of Rs. 2,569, and general repairs to the Carlton House, occupied by the Secretary, and the Biden Home, by the Harbour Masters; at a cost of Rs. 456.

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29. The expenditure to the end of the quarter including establishment tools and plant and contingencies is Rs. 1,18,95,398 out of a total estimated cost of Rs. 1,23,83,386 leaving a balance of Rs. 4,87,988 to be spent for completion.

Memorandum to accompany statement of progress for the quarter ending 31st December 1892.

1. Estimated sum required to complete the works at the commencement of the quarter except establishment tools and plant and contingent charges	Rs.	6,30,680
2. Cost of work done during the quarter	,,	23,040
	Rs.	6,07,640
3. Estimated cost of additional works found necessary during the quarter	,,	,,
4. Estimated cost of completing the works from and after the end of quarter	,,	6,07,640

HARBOUR WORKS OFFICE,
MADRAS, 26th January 1893.

A. LEE POGSON
Engineer, Harbour Trust Board.

MADRAS HARBOUR WORKS.

Progress Statement No. 31.

Statement showing Progress during Quarter ending 31st December 1892 to accompany Report No. 30.

No. of Item.	Particulars and Quantity of Work, &c.	Column.	North Pier. A Rubble Base.	B Pier Head.	C Wavebreaker.	D Concrete Capping.	South Pier. E Base Protection.	F Rubble Base.	G Pier Head.	H Wavebreaker.	I Concrete Capping.	J Base Protection.	Railway Lines. K At Works.	L At Quarries.	M Sand Line.	N Beach Improvements.	O Palayaram Quarries Out-turn.	P Concrete Blockmaking.	Q Protective Works.	R Total Expenditure during the Quarter ending 31st December 1892.
	Sub-heads of Work.																			
	Note.—The Figures in **red** denote for comparison progress and quantity of work done in the Quarter ending 31st December 1891.																			
1	Rubble Stone deposited from boats	Tons ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Do. do. from wagons	,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Total quantity Rubble Stone received on Works	,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Do. Blasted Clips do.	,, ...	...	...	...	...	...	...	12 Nil.	...	28 Nil.	...	...	...	...	...	...	...	19,616½ Nil.	...
5	Concrete Blocks—Set by Divers	Number ...	...	...	9 23	...	...	...	...	6 4	...	...	...	...	...	...	19,616½ Nil.	...	...	...
6	Do. Deposited in Wavebreaker	,, ...	...	29 63	...	...	...	239 124	...	...	...	...	...	...	...	...	18761 Nil.	...	...	...
7	Do. made for Superstructure	,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Do. do. Pier Head	,, ...	...	8 10	...	...	...	...	6½ Nil.	...	...	...	...	...	...	...	...	...	...	...
9	Wrought Iron Cramp fixed in position	,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Total out-turn of Concrete	Cubic yards...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Advance or progress of completed superstructure	Sq. feet.	...	Nil 5—4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Rubble Base protected with Concrete	,, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Statement showing Progress during Quarter ending 31st December 1892 to accompany Report No. 30.—(Concluded).

No. of Item	Particulars and Quantity of Work, &c.	Column	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
		Sub-heads of Work.	NORTH PIER.					SOUTH PIER.					RAILWAY LINES.							
			Rubble Base.	Pier Head.	Wavebreaker.	Concrete Capping.	Base Protection.	Rubble Base.	Pier Head.	Wavebreaker.	Concrete Capping.	Base Protection.	At Works.	At Quarries.	Sand Line.	Beach Improvements.	Pulvaramm Quarries Outturn.	Concrete Blockmaking.	Protective Works.	Total Expenditure during the Quarter ending 31st December 1892.
13	Metre Gauge, 40 lbs. per yard laid new	By feet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Do. do. relaid or renewed	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Do. do. taken up	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Broad Gauge, 50 lbs. per yard laid	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Do. do. relaid or renewed	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Do. do. taken up	" "	...	127	...	...	...	...	452	...	...	...	...	...	...	...	...	...	...	...
19	Tram Gauge, 75 lbs. per yard laid new	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Do. do. relaid or renewed	" "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Do. do. taken up	" "	...	141	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22																				
23																				
24	Approximate Expenditure under Sub heads of Work	Rupees ...	...	2,575	70	...	10,253	22	2,423	181	...	...	...	...	...	...	...	...	6,944	239 23,010

Tons. Cwts. Qrs. lbs. Quantity due on Indents. Tons. Cwts. Qrs. lbs.

Casks of Cement received on Works during Quarter ending 31st Dec. '92 containing ... 21 18 3 20 ... Nil.

133 Do. do. do. issued for do. " " " "

8866½ Do. do. do. Balance in Store at end of " " 1862 10 1 3

MADRAS 26th January 1893.

A. LEE POGSON,
Engineer, Harbour Trust Board.

CURRENT No. 249

MARINE DEPARTMENT.

From

THE CHAIRMAN,
HARBOUR-TRUST BOARD,
MADRAS.

To

THE CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

DATED 15th March 1893.
DESPATCHED
RECEIVED 22nd "

ENCLOSURE:—One plan of the Harbour

No. 4495

SUBJECT.

Quarterly Report on the Madras Harbour.

Submitting the ——— from 1st October to 31st December 1892.

MADRAS ASYLUM PRESS.

150
42

CURRENT No. 249

MARINE DEPARTMENT.

From

THE CHAIRMAN,
HARBOUR TRUST BOARD,
MADRAS.

To

THE CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

DATED
DESPATCHED } 15th March 1893.
RECEIVED 22nd "

ENCLOSURE.—One plan of the Harbour

No. 4495

SUBJECT.

Quarterly Report on the Madras Harbour.

Submitting the ——— from 1st October to 31st December 1892.

CAMPBELL ASYLUM PRESS.

No 1018 dt 13 April 93

PUBLIC WORKS DEPARTMENT.

950
43

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

From the Chairman, Harbour Trust Board, Madras } (H.E. No 4495 d/15. 3. 93

Endorsement thereon in the Marine Dept. } (H.E. No 578 d/24. 3. 93)

20 14 P

Ordered to be forwarded for the information of the Secretary of State and the Government of India.

To The C. H. T. Board.
" Marine Dept.

18/4/93

H. E. No 1019 dt 13 April 93

Copy of the above, with a plan showing the progress of the work, forwarded to the Government of India.

H. E. No dt

To

The Rt Hon. the Secy of State for India.

My Lord.

In continuation of our

our Department No 13
2414 W
dated 13th December 1892 we
have the honor to forward
herewith the progress report
of the Madras Harbour
Works for the quarter ending
31st December 1892.
2. The report is accompanied
by a plan showing the
position and quantity
of work done during the
quarter.

2197

Govt. of India. Madras.

PUBLIC WORKS.

Recd. 13 April 1893 No. 1018

Quarterly Report on the Madras Harbours. Ordered that the — for period ending 31st December 1892 be forwarded for the information of the Secretary of State and the Government of India.

Quarterly Report on the Madras Harbour: Forwarded with plan. Ordered that the — for period ending 31st December 1892 be forwarded for the information of the Secretary of State and the Government of India.

Quarterly Report on the Madras Harbours. Forwarded with plan. Ordered that the — for period ending 31st December 1892, be forwarded for the information of the Secretary of State and the Government of India.

J.C. 22/4