

(1) பக்கங்களின் எண்ணிக்கை

(2) புதுக்கித் திருப்பிய நாள்

(3) ஆதாரத் குறிப்பவர் சுருக்கொப்பம்

54 + 1866 mat = 56
10/12/1992

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

பெருங்குடி துறை

அரசாணை எண்.

மு. கோப்புத் தாள் எண்

3014-3012

அச்சகம்

பலவகை

நாள் :

2-11-1892

199

கண்படி கையாளவோ கூடாது.

2ND NOVEMBER 1892, No. 3011 W., PUBLIC WORKS.

3011/12

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, to the Chief Secretary to the Government of Madras, dated Madras, 16th September 1892, No. 2299.

As directed in G.O., No. 480 W., dated 12th February 1892, and in reference to paras. 4 and 5 of the Right Honorable the Secretary of State's despatch No. 1, Public Works, dated India Office, 7th January 1892, I have now the honour to submit a printed report upon the progress made upon the Madras Harbour for the quarter ending 30th June last, and also to forward the tracings referred to in the report of the Board's Engineer.

2. The total number of vessels which have entered the harbour during the quarter under review was 172, representing a tonnage of 285,909 net register. Of these, however, only 144, with a tonnage of 215,271, paid port dues, amounting to Rs. 27,536, as against 142 vessels of a total net-tonnage of 208,819 in the corresponding quarter of 1891, when the port dues amounted to Rs. 28,369.

3. Those vessels which entered the harbour without paying port dues are accounted for by the steamers trading to Singapore, which under G.O., Nos. 243-244, dated 10th June 1889, pay port dues once only in every sixty days. All other vessels, coasting and foreign, pay under the same Government Order port dues upon every entry.

4. The rates of port dues are as follows :—

	Sailing.	Steamers.	
	AS.	AS.	
Foreign ...	2	2½	} per ton net register.
Coasting ...	1½	1½	
Straits and Ceylon ...	2	3	

5. I submit, herewith, statements of goods imported and exported in the form adopted for the annual Administration Report, which gives the imports and exports for the years 1888-89 to 1891-92, to which is added the imports and exports of the first quarter of 1892-93.

6. It may appear to be going somewhat beyond the directions of the Right Honorable the Secretary of State for India to include these lists with the quarterly addition; but I have taken advantage of the form and figures being in type, to make use of the information; as by closing and printing these returns quarterly valuable statistical information will be made available for future reference, and the preparation of the annual Administration Report will be facilitated and expedited.

7. The first item which calls for remark is the large quantity of foreign coal imported by private firms 17,283 tons during the quarter as against 33,686 tons for the year 1891-92, being more than half the imports of last year during the first quarter of this.

8. Kerosine oil shows a very heavy falling off, only 28,400 cases during the quarter against a total of 397,862 cases last year. This may perhaps be accounted

for by the preparation, now being actively pushed forward, for importation of kerosine oil in bulk by tank steamers, and by the large balance of previous consignments remaining in stock.

9. Piece-goods and twist show a reduction—only 17,281 bales for the quarter against 85,070 last year. This is due to the distress in the districts and to falling and uncertain exchange.

10. Iron would appear to be in demand more than half the total of last year having been imported during the first quarter of this, viz., 6,946 tons against 13,787 tons.

11. Railway stores show a continued decline.

12. Coasting imports call for little comment except in the quantities of rice landed. It is satisfactory to note in the general interests of the Presidency, that only 101,168 bags have arrived as against a total last year of 1,147,048. This reduction is due to the brighter outlook all over the country.

13. It should be noted that as against the increase of coal from foreign ports—chiefly English coal for the gold mines in the province of Mysore—only 600 tons of country coal have been imported as against a total of 13,249 in the year 1891-92.

14. Turning to foreign exports coffee has been shipped to the extent of 12,152 bags while the total for last year was 23,764. This information will however only be of utility when the quarterly returns have been kept up for some years, the season for exports of coffee being limited.

15. The small exports of cotton, 8,512 bales against 48,202 in 1891-92—the lowest figure for many years past—would appear to be due to failure of crops.

16. Ground-nuts again show a large reduction; this is due not only to the badness of the season, but also to the diversion of this trade of Pondicherry and other ports served by the South Indian Railway.

17. Tanned hides and skins, it is satisfactory to note, maintain a proportionate average.

18. The exports of jaggery, as given in the returns for the past four years, show so great a fluctuation that it is difficult to assign any local reason.

19. Progress upon harbour construction has, as usual at the season, been slow throughout the quarter, owing to the necessity of taking precautions to avoid disaster to the titan cranes during the period of uncertain weather caused by the advent of the south-west monsoon. Every endeavour was made to take advantage of the locomotive powers of the new all-round titan crane with, however, not very satisfactory results, as will be seen from a reference to para. 2 of the Engineer's report.

20. The rough sea usual at the season interfered with block setting, but in addition to this the tyres of the travelling wheels of the new titan crane failed owing to a defect in construction, the two separate tyres upon each wheel parting from each other under the heavy strain of steaming the titan out and home daily. The necessary repairs have been made at the Madras Railway Company's Perambur Works.

21. A curious fact to be noted in para. 3 of the Engineer's report is the deposit of mud at the south pier, this was a thick black slime, while the sea-bed along the whole coast is clean sand.

22. Before reaching the cylindrical pier heads there remained to be built at the end of the quarter 89 feet at the north arm and 83 feet at the south, representing 18 and 17 courses of blocks respectively.

23. As remarked in the Administration Report for 1891-92, block-making was at the end of that period practically completed. During the quarter 138 blocks were made, leaving only 14 more required for the whole work.

24. The Board's Engineer has, however, taken the precaution since to make duplicates of special blocks required for the curved approaches to the pier heads, for the failure of one block would necessitate the entire stoppage of the work till another

could be made, and mature fit for use. These duplicate blocks, if not required, will be utilised in the wavebreaker screen.

25. Para. 6 of the Engineer's report deals with the erosion, north of the harbour, and the cross sections submitted herewith give valuable information.

26. The erosion of sand was generally normal, but the accumulation of sand from 6,000 feet to the extreme end of the protective revetment, and at 7,025 feet is unusual, and that no bay should have commenced to form at the north end of the revetment is also abnormal, experience having shown that this action commenced at the end of the old revetment, where it terminated at Cassimode, immediately the current changed to the south.

27. Observations carried on for a series of years as to the strength of the current, the height of the surf, and general direction of the wind, may hereafter be of service in determining the cause of the apparent capricious fluctuations of erosion and accretion of the shore line.

28. The accretion to the south of the harbour has apparently been normal. The next Marine survey will show what has been the changes in the sea bottom outside the harbour.

29. No observations have been made of the sea bottom within the harbour; this will be done in connection with the survey outside, but I may remark that a record of soundings, which has been maintained by the Traffic Department along the iron screw pile pier, and along its eastern face, show that very little loss in depth of water has occurred since the trust was formed.

30. The supply of water to shipping has been unsatisfactory for some time past. Private owners have built water boats with capacities of 10 to 15 tons each, and it was found that the supply at the pier head was insufficient to serve the requirements of the shipping. The trustees have from time to time considered various proposals for increasing the supply, none of which were entirely satisfactory. The method of conveying water to the pier head has been by a water tower erected many years ago at the inner end of the pier; but the force in the Municipal main was insufficient to fill this, and the supply has always been defective. The Board, therefore, sanctioned a larger connecting pipe from the Municipal main direct to the pier head; and it is satisfactory to record that the increased supply has so far met the demand, although the improvement was made only as a tentative measure.

31. An attempt to recover the chains attached to the inner line of screw moorings, to which it was intended to attach buoys for the accommodation of small native craft, has approved abortive, the chains having apparently become completely buried in the sand, and could not be found.

32. With reference to para. 10 of the Engineer's report, I may mention that the Board has under consideration the desirability of disposing of the unserviceable screw mooring plant, retaining only the chains and buoys, which will be required for anchor or mushroom moorings; the value of the plant available for sale is in round figures Rs. 39,000.

33. I annex a statement of receipts and charges—revenue account. The opening balance was Rs. 11,45,648 and the quarter closed with the balance to credit of Rs. 9,18,141. The reduction is due to the payment upon the 1st April of Rs. 1,00,000 refund of advances for harbour construction and of interest thereon Rs. 1,87,039.

34. Apart from this special payment therefore the receipts during the quarter had been Rs. 59,500 in excess of expenditure, due to exceptionally heavy imports of food-grains, chiefly rice.

35. The Right Honorable the Secretary of State directs that he may be kept informed of any commercial works in connection with the harbour.

36. The trustees have for several years past contemplated the landing, shipping and warehousing of goods; and with this object concluded an agreement with Government for the purchase of the old High Court buildings—originally the East India Company's Warehouse—at a cost of Rupees three lakhs; and estimates were obtained for the construction of 50 and 100 ton iron lighters.

37. The Chamber of Commerce did not support the Board's proposals. The proposed purchase of the old High Court buildings has been abandoned, and a private company has since been formed to carry out these objects.

38. In their Administration Report for the year 1891-92, the trustees referred prominently to the necessity for better railway communication in connection with docks; but although the Trades Association is strongly in favour of docks, the Chamber of Commerce is not unanimous, and considers that the time has not yet arrived to discuss the question.

39. The Chamber of Commerce has strongly urged upon Government the necessity for direct communication to Madras with the East Coast Railway, now under course of construction, but it is understood that this is not at present to be granted, and that the working of a section of this railway is to be handed over to the Nizam's State Railway.

40. The question of railway communication is of paramount importance to the trade of this port and Presidency, but it cannot be expected that trade will increase when railways lately built, under construction and proposed, tend to divert trade from Madras.

41. If the trade of this Presidency is to be diverted by the railways to the West Coast, the proposal to construct docks must be seriously reconsidered for a steady decrease in trade must be expected to follow facilities given in direct antagonism to the interests of this port, favoring diversion over long leads, at reduced rates, assisted by lower rates of freight at Bombay.

42. The Board strongly supports the representations of the Chamber of Commerce regarding the vital importance of improved railway communication with this Presidency city and harbour; and would submit that railway construction should be carried out with a view to increase the volume of trade from hence, rather than to diminish it.

43. If this were done, freights would naturally fall; but if the construction of railways tends in the future to divert trade from Madras, the usefulness of the harbour will be seriously impaired: indeed it is a question whether the trade of the port, if reduced in any way, can stand the extra tax imposed upon it for the present, and near future, by the harbour; for it must be remembered that so far no reduction in charges has been feasible.

44. With the refund to Government of one lakh of rupees a year and payment of interest at 4½ per cent. upon a maximum outlay larger than was contemplated, a severe strain is put upon the resources of this port; and improved facilities of railway communication tending to increase the volume of trade is, it appears to the Board, absolutely necessary to enable the harbour to serve the purpose of its construction.

45. The Board would therefore commend to the serious consideration of the Right Honorable the Secretary of State for India the absolute and vital necessity in the interests of the trade of this Presidency of placing this harbour in such communication with the districts by rail as would enable the trustees to co-operate, by the construction of docks, and retain within the Presidency its natural trade. If it be diverted to the west coast or elsewhere and becomes dependent upon long lines of railway, and upon freights from distant ports, it cannot be expected to remain for long in a healthy condition.

ENCLOSURES

Statement of Receipts and Charges, Revenue Account, from 1st April to 30th June 1892.

Opening balance—	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
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	8						
3. Advance for contingencies ...	500	0	0						
				6,78,550	9	8			
							11,45,648	2	6

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Receipts.			RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
I. Harbour dues collections—											
Beach import ...	...	...	40,501	0	11						
Pier do. ...	...	...	16,401	5	11						
Beach export ...	...	...	5,377	6	4						
Pier do. ...	...	...	13,384	10	1						
Storage ...	...	...	500	15	2						
Wharriage ...	...	...	1,141	13	4						
Craneage ...	...	...	5,034	5	4						
Penalties (section 84) ...	...	...	...								
Demurrage ...	...	...	...						82,341	9	1
Porterage—											
Beach ...	...	...	14,894	1	7						
Pier ...	...	...	3,748	13	7						
Haulage ...	...	...	2,617	1	3						
Miscellaneous ...	...	...	1,664	5	7				27,924	6	0
Miscellaneous—											
Harbour Trust properties ...	...	...	334	4	5						
Provisions ...	...	...	180	6	6						
Water collection ...	...	...	1,053	8	0						
Sundries ...	...	...	...						1,568	2	11
II. Interest realized on Government of India 4 per cent. promissory notes.											
	...	...	...						2,536	5	6
Total ...	...	...	...						12,60,018	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 ...	1,200	0	0								
2. Secretary's do. ...	2,250	0	0								
3. Correspondence department ...	842	9	9								
4. Accounts department ...	1,517	3	1								
5. Cash department ...	879	3	8								
6. Traffic department (Shore staff) ...	6,588	0	10								
7. Preventive service ...	3,149	2	8								
8. Do. boatmen ...	295	1	6								
9. Contribution to Government for pensions ...	212	7	9								
10. Fees to trustees ...	1,740	0	0								
11. Contribution to Provident Fund ...	1	4	0						18,675	1	2
IV. Contingencies—											
(a) Subject to regular audit—											
Postage ...	6	5	6								
Receipt stamps ...	55	7	0								
Telegrams ...	...										
Furniture ...	272	0	0								
Fees for audit ...	...										
Law charges ...	...										
Stationery and Printing ...	577	2	6								
Advertisement charges ...	2	6	0								
Uniform to Preventive service ...	25	0	0						938	3	0
(b) Admissible without detail audit—											
Overtime fees to establishment. Do. to Preventive service and boatmen ...	1,185	7	1								
Miscellaneous ...	753	13	3								
	965	15	10						2,910	4	2
V. Refunds ...	...								142	5	6

VI. Petty construction and repairs—	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
New works	8,175	9	2						
Repairs	2,872	12	9						
Tools and plant									

11,048 5 11

VII. Portage—

1. Pier coolies	3,570	9	11
2. Do. beach and custom house	13,007	10	4
3. Madras Railway Company	435	5	6
4. South Indian Railway Company	66	9	0
5. Coasting cargo	195	12	2
6. Boat hire	945	8	7
7. Claims for losses and damage	174	12	2
8. Engine charges	443	4	10
9. Refunds	402	10	10
10. Steam crane charges	254	3	6
11. Contribution to Cooly Provident Fund	323	10	9

19,819 1 7

Contingencies—

(a) Subject to regular audit—

Postage	3	4	0
Receipt stamps			
Telegrams			
Furniture			
Tarpaulins	152	0	0
Law charges	25	0	0
Stationery and Printing	308	8	0
Advertisement charges			
Lighting pier and yards	366	8	0

855 4 0

(b) Admissible without detail audit—

Miscellaneous

449 11 6

Total Expenditure

3,41,877 14 7

Balance on 30th June 1892—

Government securities (par value

7,00,000)

6,83,220 8 10

Bank of Madras

2,34,166 4 3

General cash

253 14 4

Advance for contingencies

500 0 0

2,34,920 2 7

9,18,140 11 5

Total

12,60,018 10 0

14th July 1892.

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

I.—STATEMENT of goods imported from foreign ports.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st March 1893.
Apparel and effects ...	Packages	1,388	1,217	851	1,347	212			
Alum	Barrels	490	504	1,233	326	156			
Asphalt, tar, and pitch ...	Casks	2,707	3,133	3,623	4,439	913			
Acids	Cases	1,484	775	1,362	1,854	798			
Arms and guns		516	235	126	442	129			
Arrack	Casks	832	773	346	884	146			
Blankets	Bales	25	38	58	119	4			
Beef and pork	Cases	2			36				
Bricks		100	1,497	222	1,021	170			
	Cases	6,697	5,664	6,606	6,123	2,242			
Beer	Barrels	2,160	935	110	1,140	629			
	Hogsheads	4,424	3,649	8,217	6,808	2,517			

I.—Statement of goods imported from foreign ports—cont.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Boiler	No.	33	19	32	51	7			
Corks	Barrels	191	133	83	83	14			
Canvas	Bales	140	77	244	121	59			
Candles	Cases	14,278	20,639	18,515	16,637	8,329			
Colours		1,990	1,056	2,698	4,838	466			
Confectionery provisions and oilman-stores.		17,012	14,214	17,896	23,395	5,047			
Crockery and glass-ware.	Crates and casks	3,942	3,018	4,099	4,538	1,104			
Chalk	Barrels	377	95	178	370	15			
Cement	Casks	17,293	8,868	7,049	14,522	4,315			
Cast iron pipes and tubes.	Tons	683	1,005	950	835	435			
Camphor	Tubs	2,676	1,560	1,553	4,739	1,091			
Coal, coke and fuel ...	Tons	13,773	11,992	16,688					
Coal					38,686	17,283			
Coke					578	101			
Crackers	Cases	879	975	1,184	470				
Copper plates and tiles.	No.	498	5,012	1,594	4,502	90			
Corrugated iron	Packages	51	449	2,913	805	506			
Dynamite	Cases	4,939	8,180	9,230	13,040	3,220			
Earthenware	Crates	2,104	794	1,913	2,318	220			
Fire clay	Casks	214	147	23	2,768	58			
Flour	Bags and barrels	483	675	367	1,817	296			
Flannel	Bales	74	23	53	54	3			
Gunpowder	Packages	476	962	1,746	6,667	1,100			
Harmonium	Cases	4	11	9	30				
Hardware	Cases and casks	4,247	2,324	3,954	8,234	1,906			
Hops	Packages	269	116	129	129	19			
Iron	Tons	17,771	12,762	18,138	13,787	6,946			
Iron safes	No.	577	343	241	206	90			
Kerosine oil	Cases	248,024	248,505	345,000	397,862	28,400			
Lime water		108	31	45					
Malt	Bags	665	609	854	445	88			
Millinery and haberdashery.	Cases	1,640	1,893	1,856	1,609	233			
Matches		11,739	4,928	7,915	10,665	2,639			
Machinery	Tons	1,752	1,799	1,600	8,099	886			
Nails	Kegs	19,253	4,409	13,287	13,744	4,471			
Oil and turpentine ...	Drums	8,984	8,863	6,942	7,225	2,365			
Piece-goods and twist.	Cases and bales	105,495	97,383	82,649	85,079	17,281			
Paper	Bales	3,235	3,988	4,046	6,546	1,857			
Piano	No.	102	135	123	153	28			
Printing types	Cases	330	348	263	452	409			
Pig lead	No.	1,895	2,047	1,420	2,168	266			
Paint	Kegs	7,637	7,945	7,457	7,758	3,833			
Rattan	Bundles	949	6,527	883	3,823	2,117			
Scaps	Cases	2,075	2,191	1,996	1,650	172			
Salt		488	820	225	383	104			
Steel	Cases and casks	921	3,577	874	664	231			
Steel bundles and bars.	No.			5,746	11,261	3,836			
Steel hoop	Bundles			12,566	5,567	1,189			
Shovels		173	13	747	275	197			
Sodawater bottles ...	Crates	846	997	840	1,395	462			
Sulphur	Casks	825	831	638	752	335			
Shot	Kegs	220	348	240	177				
Sundries	Packages	32,362	39,954	48,364	48,408	6,143			
Specie	No.	1,330	1,541	1,115	1,229	253			
Sugar	Bags			2,250	2,152	248			
Slates and pencils ...	Cases	1,389	645	1,101	1,242	161			
Spelter	Cases	13,343	3,256	11,342	836	2,144			
Saw	Cases	34	7	83	70	30			
Twine and rope	Bales and coils	71	221	183	438	65			
Tin plates	Boxes	4,194	3,771	4,994	5,608	846			
	Cases	45,173	46,479	40,857	37,877	10,793			
	Casks	2,094	3,240	2,739	863	111			
Wine and spirits	Punches	256	392	149	369	109			
Window glasses	Cases	1,987	5,158	8,297	5,972	2,779			
White and red lead ...	Kegs	859	969	496	681	144			
Yellow metal	Cases	907	2,722	4,309	2,076	451			
Zinc sheets	Packages	1,221	1,174	595	2,749	476			
Horses	No.	837	996	611	816	3			
Ponies		3	6	17	70	3			
Cows		5	6		59				
Dogs		14	13	10	13				
Elephants			1	25	10				

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

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Stores ..	Packages ..	34,697	81,723	51,879	82,165	12,429	..	..	..
Fuel ..	Tons ..	..	171	467	3,665	389	..	..	..
Coke ..	..	5,587	9,753	4,673	..	..	..	..	..
Coal ..	..	997	645	839	1,437	141	..	..	..
Timber ..	..	52	2,702	4,801	27	..	..	..	..
Fire brick ..	100 ..	1,622	1,483	3,800	2,477	569	..	..	..
	..	141	140	165	115	..	..	..	..

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

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Stores ..	Packages ..	109,131	694,812	618,937	63,282	5,718	..	..	..
Fuel ..	Tons ..	856	..	..	..	..	..	..	..
Coke ..	..	..	..	..	14	..	..	..	..
Coal ..	..	5,276	6,582	5,980	..	..	..	..	..
Timber ..	..	10	..	..	..	..	..	..	..
Boiler ..	No. ..	..	10	55	4	..	..	..	..

IV.—Statement of goods imported from coast ports.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Apparel and effects ..	Packages ..	376	414	634	461	105	..	..	..
Alum ..	Barrels ..	51	56	..	10	5	..	..	..
Acids ..	Cases ..	149	11	99	69	11	..	..	..
Animals ..	No. ..	..	..	210	..	10	..	..	..
Arms and guns ..	Cases ..	16	49	10	45	4	..	..	..
Boilers ..	No. ..	3	1	7	2	..	..	..	..
Bricks and tiles ..	100 ..	126	1,289	1,030	1,366	..	..	..	..
Coffee ..	Bags ..	715	461	349	379	366	..	..	..
Candles ..	Cases ..	1,471	682	..	..	..	..	..	..
Colours ..	..	1,667	1,667	1,541	1,325	378	..	..	..
Crockery and glass-ware ..	..	782	413	305	322	90	..	..	..
Coal ..	Tons ..	2,251	186	14,884	12,249	600	..	..	..
Carpets ..	Bales ..	112	178	187	79	20	..	..	..
Camphor and benjamin ..	Tubs ..	1,483	1,586	4,640	682	246	..	..	..
Copra ..	Bags ..	191	124	..	32	..	..	..	..
Crackers ..	Cases ..	10	..	..	..	..	..	..	..
Copra ..	..	1,350	1,661	..	1,667	856	..	..	..
Cu. sh and lac ..	Tiles and Ingots ..	..	11,053	1,071	96	..	..	..	..
Cocoanuts ..	Packages ..	..	..	2,703	4,415	369	..	..	..
Earthenware ..	No. ..	900	666	..	3	..	..	..	..
Do. ..	Crates ..	169	39	23	392	1,424	..	..	..
Firewood ..	Pipes ..	2,080	..	..	2,626	888	..	..	..
Flour ..	Tons ..	1,212	892	..	..	..	..	..	..
Gummes ..	Bags and barrels ..	2,819	4,352	4,177	1,545	2,334	..	..	..
Gram and peas, &c. ..	Bales ..	7,993	11,835	10,790	7,930	581	..	..	..
Garlic ..	Bags ..	1,25,942	191,357	2,25,739	271,682	75,695	..	..	..
Hardware ..	..	1,899	7,077	8,523	2,945	20	..	..	..
Horns ..	Cases ..	542	489	805	641	120	..	..	..
Hides ..	Bundles ..	702	1,043	681	880	239	..	..	..
Iron ..	Bales ..	4,449	7,400	6,936	6,127	3,351	..	..	..
Iron safes ..	Tons ..	277	457	400	231	48	..	..	..
Leaves ..	No. ..	65	47	19	31	10	..	..	..
	Bundles ..	5,116	5,796	5,574	6,508	773	..	..	..

IV.—Statement of goods imported from coast ports—cont.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Machinery ..	Tons ..	171	109	251	158	15	..	..	..
Millinery and haberdashery ..	Cases ..	254	268	189	208	41	..	..	..
Oil and turpentine ..	Drums ..	2,784	2,540	2,840	3,340	1,636	..	..	..
Piece-goods ..	Cases and bales ..	7,306	5,237	3,023	3,802	514	..	..	..
Paper ..	Bales ..	3,820	5,003	3,955	3,128	662	..	..	..
Paint ..	Kegs ..	212	1,068	99	224	14	..	..	..
Piano ..	No. ..	6	7	5	15	4	..	..	..
Rice ..	Bags ..	26,769	69,446	223,751	1,147,048	101,168	..	..	..
Rose water ..	Cases ..	1,409	1,867	710	1,434	763	..	..	..
Seeds ..	Bags ..	18,066	13,313	12,044	30,405	7,998	..	..	..
Skins ..	Bales ..	5,729	6,727	5,387	6,199	1,130	..	..	..
Silk ..	..	837	884	925	1,051	170	..	..	..
Sandalwood ..	Bundles ..	145	297	63	143	3	..	..	..
Sugar ..	Bags ..	6,990	2,816	2,134	1,381	158	..	..	..
Spice ..	No. ..	201	184	87	202	14	..	..	..
Sundries ..	Packages ..	43,462	38,474	40,653	47,533	13,476	..	..	..
Soup ..	Cases ..	105	179	363	446	6	..	..	..
Sulphur ..	Casks ..	48	173	..	471	334	..	..	..
Twine and rope ..	Packages ..	..	..	3,474	359	182	..	..	..
Tin plates ..	Bales and coils ..	1,104	941	942	836	101	..	..	..
Twist ..	Boxes ..	1,118	1,322	708	1,367	93	..	..	..
Turneric ..	Bales ..	4,064	3,434	1,333	1,126	209	..	..	..
Timber ..	Bags ..	5,790	3,471	10,751	7,224	1,086	..	..	..
Tea ..	Tons ..	17,277	17,889	16,859	15,137	2,590	..	..	..
Yellow metal ..	Cases ..	1,421	3,813	4,735	1,321	2,272	..	..	..
Horses ..	No. ..	155	342	899	6	193	..	..	..
	..	..	..	..	1	8	..	..	..

V.—Statement of goods exported to foreign ports.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Bear and ale ..	Cases ..	13	30	..	18	2	..	..	..
	Casks ..	..	2	..	60	..	..	..	..
	Hogsheds ..	1	1	..	2	..	..	..	..
Cinchona bark ..	Bales ..	2,185	1,299	1,346	471	110	..	..	..
Chilies ..	Bags and bundles ..	2,225	3,262	1,362	2,760	..	..	..	..
Cigars ..	Cases ..	1,239	1,423	942	1,249	146	..	..	..
Coffee ..	Bags ..	23,456	15,516	22,708	33,764	12,152	..	..	..
Cotton ..	Bales ..	53,173	161,937	77,022	48,202	8,512	..	..	..
Do. twist ..	..	3,960	5,356	8,271	4,223	2,294	..	..	..
Coriander and Onum seeds ..	Bags ..	9,281	11,416	1,385	8,218	361	..	..	..
Carpets ..	Bales ..	645	725	524	418	50	..	..	..
Coal ..	Tons ..	182	115	..	905	213	..	..	..
Deer horns ..	Packages ..	874	1,365	1,311	1,574	364	..	..	..
Explosive ..	Cases ..	14	25	..	21	..	..	..	..
Firewood ..	Tons ..	23	..	..	..	..	..	..	..
Four-wheel carriage ..	No. ..	30	2	..	8	1	..	..	..
Ground-nuts ..	Bags ..	95,614	208,096	194,320	93,132	11,610	..	..	..
Gram, peas, &c. ..	..	937	1,434	..	519	..	..	..	..
Horns, cow and buffalo ..	Tons ..	199	65	54	62	15	..	..	..
Hides, tanned ..	Bales and bundles ..	17,558	17,532	16,400	21,843	5,444	..	..	..
Indigo ..	Cases and chests ..	22,762	27,618	24,453	14,622	2,762	..	..	..
Iron ..	Tons ..	29	23	..	2	..	..	..	..
Jaggery ..	Bags ..	23,520	111,032	84,135	28,935	13,736	..	..	..
Myrabolams ..	..	135	462	2,575	235	60	..	..	..
Miscellaneous ..	Packages ..	23,607	17,399	16,335	37,808	8,290	..	..	..
Onions ..	Bags and baskets ..	7,979	9,073	5,843	21,964	4,458	..	..	..
Oil ..	Casks ..	331	587	50	484	18	..	..	..
Piece-goods ..	Bales and cases ..	3,372	3,419	5,843	9,205	1,075	..	..	..
Potatoes ..	Bags and baskets ..	3,837	2,703	2,284	2,437	157	..	..	..
Poonas ..	Bags ..	13,116	15,187	26,134	33,880	5,962	..	..	..
Piano ..	No. ..	10	8	3	41	5	..	..	..
Rice ..	Bags ..	17,589	65,475	2,059	1,128	1	..	..	..
Redwood ..	Tons ..	1,382	2,032	1,609	699	343	..	..	..
Seeds, gingelly and castor ..	Bags ..	20,137	89,411	19,021	1,313	652	..	..	..

V.—Statement of goods exported to foreign ports—*cont.*

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Skins, sheep and goat, tanned.	Bales	32,498	30,399	37,209	37,194	7,486			
Sandalwood	Bundles	672	687	1,798	1,534	43			
	Cases	185	331		332				
Spirits and wine	Casks	5	87		977	1			
	Punchons		19						
Sugar	Bags	1,112	7,296		599	21			
Species	Boxes	153	33	55	91	21			
Tamarind	Bundles	8,277	2,542	1,156	6,445	1,969			
Turneric	Bags	1,598	1,623		2,159	217			
Tea	Cases	4,273	3,823	2,384	2,265	424			
Two-wheel carriage.	No.		3	1					
Wool	Bales	976	1,043	1,136	1,021	436			
Yellow metal	Tons	3	5		107				

VI.—Statement of goods exported to coast ports.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Beer and ale	Cases	249	456	289	352	61			
	Casks	16	110	159	159	15			
Cinchona bark	Hogsheds	161	10	47	7	1			
Chillies	Bales	178	186		395				
Cigars	Bags and bundles	2,998	5,535	4,592	2,064	1,264			
Coffee	Cases	1,485	1,298	1,345	1,418	315			
	Bags	505	574	605	567	800			
Cotton	Bales	1,972	4,761	8,521	5,784	832			
Do. twist		3,816	3,075	5,103	4,698	754			
Coriander and Onum seeds.	Bags	2,728	7,071	4,783	2,970	1,531			
Carpets	Bales	34	26	45	68	15			
Coal	Tons		94	976	275	25			
Deer horns	Packages	85	7	34	108	1			
Explosive	Cases	201	303	55	2,668	315			
Eggs	Pots	2,717	3,882	2,801	1,165	157			
Firewood	Tons	28	8		2				
Four-wheel carriage.	No.	26	9	34	21	9			
Ground-nuts	Bags	30,757	20,996	61,463	27,790	7,797			
Gram, peas, &c.		15,204	3,987	3,668	521	66			
Horns, cow and buffalo.	Tons	198	336	30	310	28			
Hides	Bales and bundles	407	495	506	379	111			
Indigo	Cases and chests	465	829	412	165				
Iron	Tons	989	743	850	2,244	855			
Jaggery	Bags	376	296		259	86			
Kerosene oil	Cases	1,516	4,680	3,463	10,327	212			
Myrabolams	Bags	322	139	535	1,054				
Miscellaneous	Packages	12,410	20,868	35,308	50,510	12,262			
Onions	Bags and baskets	9,795	11,516	21,141	22,442	2,036			
Oil	Casks	790	1,344	1,581	807	285			
Piece-goods	Bales and cases	3,429	3,613	6,259	5,615	1,566			
Potatoes	Bags and baskets	24,229	21,092	26,470	23,637	918			
Poonac	Bags	2,210	1,469	4,752	4,770	6,023			
Piano	No.	5	43	24	23	2			
Paddy	Bags	27,149	4,019	11,426					
Rice		6,790	8,198	8,098	5,448	3,075			
Redwood	Tons	52	194		119	48			
Seeds, gingelly and castor.	Bags	19,374	28,756	57,157	16,803	401			
Skins, sheep and goat, tanned.	Bales	610	758	1,271	721	90			
Sandalwood	Bundles	224	342	1,856	153	54			
	Cases	2,143	2,098	2,949	2,982	1,255			
	Casks	150	162	259	727	85			
Spirits	Punchons	2	16	54	14	1			
Sugar	Bags	460	2,307	2,093	778	564			
Species	Boxes	978	164	154	236	169			
Tamarind	Bundles	2,010	3,598	17,197	3,624	4,340			
Turneric	Bags	3,572	463	4,719	19,258	5,218			
Tea	Cases	55	544	298	341	13			
Two-wheel carriage.	No.	14	8	27	15	4			
Wool	Bales	37	557	476	769	147			
Yellow metal	Tons	88	26	47	53	12			

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

Department.	Description.	Class.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Accountant-General.	Specie, silver	Boxes	1,789	1,109	1,176	403	100			
	“ copper	“	335	1,329	3,475	5,189				
	Silver and copper.	“	174							
	Notes	No.	19	21	8	22				
	Packages	No.	593	1	2	27				
State Railway	Rails	“								
	Sleepers	“								
	Bridge works	Tons.								
Public Works Department.	Boilers	No.	2	44	60	21				
	Coal	Tons.	106	44	250	10				
	Iron	Tons.	220	442	250	271				
	Stores	Pkgs.	1,691	1,127	2,049	15,148	2,023			
	Coal	Tons.	86	1,968	939					
Ordnance	Ammunition	Boxes	1,308	51		2,148				
	Stores	Pkgs.	15,838	22,268	22,898	13,017	4,067			
Madras Harbour Works.	Cement	Casks	35,764	40,244	34,375	1,563				
	Stores	Pkgs.	321	1,009	895	3,849				
	Coal	Tons.		496	583					
Clothing	Packages	No.	1,773	2,831	1,527	1,843	589			
Police	“	“	218	135	335	132	98			
Salt Revenue	“	“	75	115	190	272	220			
Post office	“	“	980	1,858	1,739	1,119	198			
Medical	“	“	1,584	1,616	1,250	1,779	435			
Telegraphs	“	“	6,899	18,414	19,211	34,758	1,752			
Stationery	“	“	1,088	743	611	732	10			
Stamps	“	“	1,435	1,499	1,547	1,961	256			
Commissariat	“	“	1,811	1,779	4,384	8,588	2,013			
Gazette Press	“	“	52	82	2,414	181	7			
Marine	“	“	32	182	311	729	117			
Superintendent, Railway Mail Service.	“	“	52	31						
Revenue Survey	“	“	252	52	22	597	73			
Agriculture	“	“	1	5	293	380	269			
Government Central Museum.	“	“	6	4	10	15	3			
Under-Secretary to Government.	“	“	87	84	94	285	439			
Superintendent of Prisons.	“	“	3	9		1	2			
Revenue Board	“	“	65	26	132	424				
Forests	“	“	31,811	175	1,313	1,196	2			
Bank of Madras.	Specie, silver	Boxes		2						
	“ copper	“		50						
Presidency College.	Packages	No.		13	40	28	7			
School of Arts	“	“	2	2		3				
Sanitary Commissioner.	“	“	1							
Inspector of Cattle Diseases.	“	“	116	10		9				
Chemical Examiner.	“	“	25	15	32	31	2			
Medical College	“	“	50	2	64	73				
Deputy Collectors	“	“		14	9	1				
Camp Equipage	“	“		1						
Astronomer	“	“	11	6	6	23	2			
Presidency Pay Master.	“	“	5	6	13	2	5			
Registration	“	“	24	2	2	7	1			
Director of Public Instruction.	“	“		9	5	9				

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

Department.	Description.	Class.	1888-89.	1889-90.	1890-91.	1891-92.	Week ending 30th June 1892.	Week ending 30th Sept. 1892.	Week ending 31st Dec. 1892.	Week ending 31st Mar. 1893.
Accountant-General.	Specie, silver	Boxes.	118	174	20	411	27			
	“ copper	“	136	216	330	965	173			
	“ notes	“	4	5	10	6				
	“ packages.	No.	1	1	6	4				

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

Department.	Description.	Class.	1888-89.	1889-90.	1890-91.	1891-92.	Week ending 30th June 1892.	Week ending 30th Sept. 1892.	Week ending 31st Dec. 1892.	Week ending 31st Mar. 1893.
Bank of Madras.	Specie silver .. copper ..	Boxes.	..	10	..	34	..	..	..	..
Ordnance..	Packages .. and ..	No.	5,765	25,038	6,564	8,556	1,083	..	..	..
Public Works Department.	..	..	4,420	18,358	429	1,784	141	..	..	..
Clothing ..	..	..	916	1,018	1,251	1,327	225	..	..	..
Police ..	..	..	748	849	797	889	95	..	..	..
Salt Revenue ..	..	..	330	493	305	391	84	..	..	..
Medical ..	..	..	1,049	1,868	1,552	1,367	518	..	..	..
Telegraph ..	..	..	355	1,125	6,442	8,815	35	..	..	..
Stationery ..	..	..	777	398	739	693	153	..	..	..
Stamps ..	..	..	165	171	195	223	53	..	..	..
Commissionariat ..	..	..	5,128	6,179	7,761	7,971	740	..	..	..
Gazette Press ..	..	..	445	567	476	526	114	..	..	..
Marine ..	..	..	419	807	268	330	92	..	..	..
Revenue Board ..	..	..	26	52	79	77	18	..	..	..
Revenue Settlement ..	..	..	157	55	87	51	29	..	..	..
Revenue Survey ..	..	..	31	77	74	75	56	..	..	..
Superintendent of Prisons.	..	..	151	91	71	69	35	..	..	..
Registration ..	..	..	80	54	51	66	..	..	..	..
Conservator of Forests.	..	..	28	49	31	34	3	..	..	..
Quarter Master General.	..	..	..	..	..	..	..	..	..	..
Government Central Museum.	..	..	..	6	9	10	4	..	..	..
Deputy Collectors.	..	..	20	..	..	2	9	..	..	..
Camp Equipage ..	..	..	..	..	..	..	..	..	..	..
Government Astro-nomer.	..	..	5	2	..	..	11	..	..	..
Agriculture ..	..	..	..	..	5	15	2	..	..	..
General Hospital ..	..	..	..	..	..	..	..	..	..	..
State Railways ..	..	..	293	..	..	160	..	..	..	..
Inspector of Cattle Diseases.	..	..	11	11	3	3	1	..	..	..
Chemical Examiner.	..	..	..	1	3	..	..	..	..	..
Director of Public Instruction.	..	..	9	2	15	10	3	..	..	..
Registrar of University.	..	..	14	16	16	13	..	..	..	..
Collectors ..	..	..	..	..	..	10	..	..	..	..
Curator of Government Garden, Ooty.	..	..	..	2	12	11	..	..	..	..
Engineer, Harbour Trust Board.	..	..	..	1	..	..	..	..	..	..
Crown Officer, High Court.	..	..	1	8	13	14	6	..	..	..
School of Arts ..	..	..	1	..	..	..	..	..	..	..
Secretary to Government, Public Department.	..	..	4	1	..	..	..	..	..	..
Registrar-General of Births, Deaths and Marriages.	..	..	..	..	..	..	..	..	..	..
Inam Commissioner.	..	..	..	1	..	1	..	..	..	..
Consulting Engineer to Government Railways.	..	..	..	4	36	20	..	..	..	..

Report to accompany quarterly statement of progress on the Madras Harbour Works for the quarter ending 30th June 1892.

General.—At the end of last quarter the two titan cranes were working at the pier heads, and the all-round crane was depositing wave-breaker blocks on the seaface of the North arm of the harbour. The quarter under review, April, May and June, is an unfavorable one for progress, owing to its being necessary to take precautionary measures to meet the uncertain weather of the month of May and to the occurrence of the Easter and Whitsuntide holidays. The actual progress and work done on each part of the work are described in the following paragraphs.

2. *North Pier.*—Early in April excavation was being carried on, and the bed of the 242nd course was being prepared. The first block of the course was set on the 7th, three more blocks on the 11th and five more on the 13th or nine blocks in all. The Easter holidays then intervened, and it was necessary to arrange for the titan being turned to set wave-breaker blocks, for the protection of the new work, prior to running the crane home for the uncertain season. Sixty-six wave-breaker blocks were thus set, and the titan got to its berth on shore on the 24th April. Previous to this, the all-round crane was taken to the shore, and a new berth made for it to enable the cranes to pass each other so that either crane might be run on to the pier without disturbing the other. As the main objection to the use of the old titans during May, viz., the time required to turn them and get them home, does not apply to the all-round crane, permission was obtained from the Trustees of the Board to use this crane during May and it was set to work to continue the wave-breaker on the 12th May. A condition of its being so used was that it was to be run to a place of safety every evening. It was worked thus for six days, and seventy-two blocks were deposited. Further work in this way was stopped by two of the tyres of the driving wheels becoming loose, but it was also manifest that considering the time occupied in running the crane backwards and forwards, and setting into position for work (about two hours each way including delays and stoppages), and the expense of steaming during that time that this mode of work was not advantageous. The tyres referred to are eight inches broad, and formed of two tyres each four inches broad. They failed by separating, and the remedy indicated by the failure is the formation of the tyre in one piece shrunk on to the cast-iron body with a central rib or channel to prevent movement. Arrangements having been made to remedy the defects in the tyres of the all-round crane, the old titan was taken out and turned for setting blocks on the 8th June, a delay of two days being due to Whitsuntide. After some rough weather, fifteen blocks were set on the 17th and 18th June completing the 242nd course. The sea was again rough on the 20th on the 21st the titan was taken to its berth on shore and its place taken by the all-round crane. The preparation of the base of the next course was not completed up to the end of the quarter. On the 30th June there remained about 89 feet or 18 courses of superstructure to be built before the cylindrical head is commenced.

3. *South pier.*—On this pier progress for the quarter consists of the preparation of the bed of, and the setting of the 205th course composed of 24 blocks, and consolidating the rubble base with concrete during the month of May, when the titan crane was not working. The bed of the 205th course, which is 38 feet below mean sea level was much covered with stone, mud and blocks from the old pier, and, as in the case of the North pier, progress is consequently slow. Twelve blocks were set on the 11th and 12th of April, and the titan turned for setting wave-breakers on the 19th and 20th. Thirty-five wave-breaker blocks were deposited on the 22nd and 23rd, and the titan brought home on the 25th.

4. During May the consolidation of the rubble base inside the harbour was continued. The titan crane was got out and ready for work on the 4th June, and the 205th course was completed on the 17th, when the preparation of the next bed was gone on with till the end of the month. At the end of the quarter there remained about 83 feet or 17 courses to be set before the commencement of the cylindrical head.

5. *Blockmaking.*—One hundred and thirty-eight blocks were made during the quarter. At the end of the quarter only fourteen more blocks remained to be made to meet the requirements of the work.

6. *Foreshore North of the harbour.*—Cross sections of the revetment work were taken at the close of the quarter and plotted on the sections previously taken, and are submitted with this report. The sections show an erosion of sand between 4,000 and 6,000 feet, which is to be expected during the quarter under review, but from 6,000 to the extreme end at 7,025 show an accumulation of sand, which I believe, is not usual, and up to the end of the quarter, there was no indication of a bay being formed at the end of the stone work, although a short length of the revetment had been washed down and mixed with the accumulated sand. Generally the revetment has up to the present been acted on, as was expected, that is, its outer slope has been flattened although there are places where it seems probable that more stone will be required. To lessen the likelihood of damage from scour in the event of water washing over or through the revetment to the hollow in rear, or at any rate to localise such damage, four banks of stone were placed across this hollow during the quarter, but this hollow should, I think, be eventually filled up, and this might, I think, be done next year with sand which has accumulated in front of the revetment.

7. *Foreshore South of the harbour.*—On the plan accompanying this report are shown the high water lines of 31st March 1892 and of 30th June 1892. From these it will be seen that there has been an advance of about 150 feet during the quarter. Close to the pier, the high water mark was about 1,210 feet from the commencement of Block-work on the 30th June 1892 and on the same day of the previous year it was about 1,080 feet from the same point.

8. *Sea bottom within the harbour.*—No farther observations on this point have been made during the quarter owing to the absence of the Assistant Engineer on sick leave; on his return

in August, a complete survey will be made when a proper comparison can be made with the survey of 1889.

9. *Miscellaneous*.—The first floor of the new Harbour Master's office was completed during the quarter, and it is expected the whole building will be finished early in August.

A new connection with the municipal main has been made for improving the fresh water supply to the iron pier; if the supply is still found deficient, a new line of pipes must be laid under the pier at a lower level. On the 21st June a diving boat and staff were set to work to pick up the chains connected with the inner line of screw moorings laid down in 1881. The moorings are required by the Board for small native craft, but as the chains are not buoyed and probably there has been considerable variation in the sea-bottom one way and another since the moorings were put down, they are extremely difficult to find.

10. The question has been raised as to the utilization of the stock of screw moorings sent out from England. Some of which were put down in 1881 with the aid of the hopper barges *Hobart* and *Salisbury* and which were wrecked in the cyclone of November 1881. Mr F.N. Thorowgood, Superintendent, Harbour Works, in his letter No. 46 W. dated 21st September 1881, to the Secretary to Government, brought to notice the difficulties met with in putting down these moorings, and I am inclined to think, that if anything better than the existing moorings is required, that it should not be in the form of screw moorings. This will be separately reported on.

11. As asked for in the memo. by Sir Alexander Rendel, accompanying G.O., No. 430 W., dated 12th February 1892, a statement is attached giving information as to the estimated cost of completing the works.

12. The expenditure to the end of the quarter including establishment and contingencies is Rs. 1,17,88,753 out of a total estimated cost of Rs. 1,23,83,386 leaving a balance of Rs. 5,99,633 to be spent for completion.

MADRAS,
2nd August 1892.

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

Memorandum to accompany statement of progress for the quarter ending 30th June 1892.

	Rs.
1. Estimated sum required to complete the works at the commencement of the quarter, except establishment, tools and plant and contingent charges ...	7,90,568
2. Cost of work done during the quarter ...	1,04,534
	6,86,034
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 *	6,86,034

* The difference between this sum and that shown in the final para. of the report is due to the exclusion of the establishment, tools and plant and contingent charges.

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PROGRESS STATEMENT No. 29.
Statement showing progress during quarter ending 30th June 1892 as shown on accompanying tracing plan No. 28.

S.No. of item.	Particulars and quantity of work, &c.	NORTH PIER.					SOUTH PIER.					RAILWAY LINES.					Total expenditure during the quarter.										
		Sub-heads of work.		Rubble base.	Pier head.	Wave-breaker.	Concrete cap.	Base protection.	Rubble base.	Pier head.	Wave-breaker.	Concrete cap.	Base protection.	At works.	At quarters.	Sand line.		Beach improvement.	Palisade quarries outturn.	Concrete block-making.	Protective works.						
		Column.																									
1	Rubble stone deposited from boats	Tons	934															27,334		26,400							
2	Do. do. from wagons	"																214									
3	Total quantity rubble stone received on works	"																3,235									
4	Do. blasted chips	"																1,331									
5	Concrete blocks—Set by Divers No.	"		24																							
6	Do. Deposited in wave-breaker	"			177																						
7	Do. made for superstructure	"			133																						
8	Do. do. Pier head	"		43	90																						
9	Wrought iron ramp fixed in position	"		22	16																						
10	Total outturn of concrete	Cubic yards																	3,722								
11	Advance or progress of completed superstructure	Ry. feet																	2,355								
12	Rubble base protected with concrete	"																									
13	Middle gauge, 40 lb. per yard laid new	Ry. feet																									
14	Do. do. do. relaid or renewed	"																									
15	Do. do. do. taken up	"																									
16	Broad gauge, 50 lb. per yard laid	"		354																							
17	Do. do. do. relaid or renewed	"		654																							
18	Do. do. do. taken up	"																									
19	Titan gauge, 75 lb. per yard laid new	"																									
20	Do. do. do. relaid or renewed	"																									
21	Do. do. do. taken up	"																									
22	Do. do. do. taken up	"																									
23	Do. do. do. taken up	"																									
24	Approximate expenditure under sub-heads of Work.	Rupies	4,637	9,289	3,350														2,576	32,149	40,544	1,04,584					
			Tons.					Cwts.					Qrs. lbs.					Quantity due on indent					Tons. Cwts. Qrs. lbs.				
			716					5					0					Nil.									
			347					6					0					20									
			1,552					5					1					3									

Notes—The figures in antique denote for comparison, progress and quantity of work done in quarter ending 30th June 1891.

4,611 Casks of cement received on works during the quarter ending 30th June 1892, containing

1,944 Do. do. issued for do.

9,267 Do. do. balance in store at end of do.

Madras, 1900

(Signed) F. J. WILSON,
As Engineer Trust Board.

4,611 Casks of cement received on works during the quarter ending 30th June 1892, containing
1,944 Do. do. issued for do.
9,367 Do. do. balance in store at end of do.

MADRAS,
2nd August 1892.

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

COMPARISON OF EXPENDITURE TO DATE WITH SANCTIONED ESTIMATE FOR THE QUARTER ENDING 30th JUNE 1892.

AS PER ESTIMATE SANCTIONED IN SECRETARY OF STATE DESPATCH NO. 1, DATED 7TH JANUARY 1892.											
Sub-head of work.	AS EXECUTED.										
	Quan- tity.	Rate.	Per.	Cost.	Total.	Quantity.	Rate.	Expenditure.		Arrears not paid.	Value of work done up to date, columns 11 and 12.
								Total up to end of last quarter.	During the quarter.		
1	2	3	4	5	6	7	8	9	10	11	12
<i>Expenditure up to 31st December 1891.</i>											
1. Works				55,09,324				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
3. Tools and plant				5,15,262				5,15,262	6 0	5,15,262	6 0
Total					65,54,490			65,54,490	14 10	65,54,490	14 10
<i>Revised Estimate.</i>											
4. Alteration and extension of block ground— North Pier.				5,892				5,892	3 5	5,892	3 5
5. Ordinary rubble deposited from break water	13,930	1 12 0	100	24,378		13,930	1 12 0	24,377	0 0	24,377	0 0
6. Ordinary rubble deposited from beach	208,896	2 0 5	"	4,19,218		2,08,362	2 1 5	4,25,750	4 3	4,30,070	10 2
7. Concrete blocks for build- ing	51,320	11 8 0	C. yds.	5,90,110		41,741	11 11 2	5,18,225	5 10	5,23,563	15 4
8. Setting blocks at common- cent of new work	2,615	2 1 1	"	5,415		2,615	2 1 1	5,414	11 2	5,414	11 2
9. Setting blocks from 2,200 to 3,000 feet	36,520	2 14 8	"	1,05,569		36,446	2 15 9	1,05,813	14 8	1,08,313	14 8
10. Setting blocks at pierhead.	12,185	9 8 11	"	1,16,434		6,708	10 0 6	66,499	3 8	67,598	4 7
11. Concrete in mass for filling.	263	4 8 3	"	1,132		263	4 8 3	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
13. Wave-breaker concrete blocks	77,355	10 14 11	"	8,45,591		65,870	11 5 7	7,14,714	8 2	7,47,669	15 2
14. Depositing concrete blocks.	77,932	1 0 0	"	77,928		66,455	1 0 5	62,258	14 9	67,768	10 7
15. Concrete in protection to rubble base	1,986	10 4 1	"	20,358		1,069	7 11 6	8,292	3 3	8,292	3 3
16. Cramps, iron	331	9 10 1	Each.	3,188		281	8 4 5	2,381	5 8	2,408	12 4
17. Concrete gapping	16,352	11 3 10	C. yds.	1,83,798		573	19 13 10	11,393	14 7	11,393	14 7
18. Cost of north pier caisson and setting in position and filling same as items 20, 21, 33 and 34				84,750							
Total, North Pier					24,36,697			19,51,291	10 3	19,59,912	2 0
										7 161	5 1
										19,59,913	8 1

South pier.											
19. Ordinary rubble deposited from beach	Tons.	175,675	5 9 0	Ton.	4,43,932	170,774	2 9 10	4,39,618	7 8	1,683	4,41,301
20. Large rubble deposited from breakwater	"	8,615	1 12 0	"	15,076	8,614	1 12 0	15,075	13 0	"	15,075
21. Concrete blocks for building	C. yds.	45,066	11 3 1	C. yds.	5,04,510	39,013	11 2 11	4,30,903	10 10	5,251	4,36,155
22. Setting blocks at commencement	"	2,556	3 1 6	"	7,912	2,556	3 1 6	7,911	13 3	"	7,911
23. Setting blocks from 2,550 to 3,700 feet	"	30,160	3 7 11	"	1,05,461	30,160	3 7 11	1,05,461	9 4	"	1,05,461
24. Setting blocks at pierhead	"	12,350	11 1 3	"	1,36,845	6,320	14 3 7	80,818	5 3	7,017	87,835
25. Concrete in mass for filling	"	602	7 9 1	"	4,555	602	7 9 1	4,554	14 4	"	4,554
26. Concrete in cylindrical pierhead	"	2,355	15 0 0	"	35,325	"	"	"	"	"	"
27. Concrete in filling in between coarsed block-work and caisson	"	184	15 0 0	"	2,760	"	"	"	"	"	"
28. Wave-breaker concrete blocks	"	47,231	11 1 6	"	5,24,070	35,764	11 3 8	4,26,839	9 7	8,413	4,35,252
29. Depositing concrete blocks	"	47,714	1 6 8	"	64,708	39,237	1 6 8	59,619	7 2	848	60,467
30. Concrete in protection to rubble base	"	1,700	9 10 6	"	16,420	1,107	13 6 11	9,988	11 0	3,688	13,676
31. Cramps, iron	No.	259	11 7 7	Each.	2,972	210	10 14 9	2,759	0 1	34	2,793
32. Concrete capping	C. yds.	16,247	11 6 8	C. yds.	1,84,355	6,684	21 2 4	14,145	0 4	"	14,146
33. Iron caisson	No.	1	"	"	18,000	1	"	21,406	3 6	45	21,451
34. Preparing base for and setting cylindrical pier-head	"		"	"	23,655	"	"	"	"	"	"
Total, South Pier					21,00,826			16,12,003	9 4	26,982	16,38,985
Extending the Rubble Revetment protecting the foreshore north of harbour.											
35. Rubble stone revetment	Tons.	70,800	2 1 0	Ton.	1,45,613	74,934	1 3 10	1,09,449	0 8	6,487	1,15,936
36. Railway lines	"				9,449			8,746	1 1	2,168	10,914
Total					1,55,462			1,18,195	1 9	8,656	1,26,851
Tools and plant											
37. Tools and plant	"				6,11,656			5,88,762	3 0	44,616	6,33,378
38. Contingencies	"				2,17,416			1,70,677	3 4	541	1,71,218
39. Establishment	"				6,84,365			4,77,694	11 6	14,884	4,92,579
40. Materials at site (concrete blocks in yards)	C. yds.					17,355	13 8 6	2,39,329	13 5	14,072	2,53,401

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BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of {1892} Madras.
PUBLIC WORKS.

Dated November, 2nd.

Recd.

Encl.

G.O., 2nd Nov. 1892, Nos. 3011,
3012 W.

NOVEMBER.

Madras Harbour Works

Forwarding the progress report of the —
for the quarter ending 30th June 1892 with
a plan.

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HARBOUR TRUST BOARD OFFICE,
MADRAS, 16th September 1892.

No. 2299.

From

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

To

THE HON'BLE J. F. PRICE, I.C.S.,
CHIEF SECRETARY TO GOVERNMENT,
Marine Department.

SIR,

As directed in G.O. No. 430 W dated 12th February 1892, and in reference to paras. 4 and 5 of the Right Honorable the Secretary of State's despatch No. 1, Public Works, dated India Office, 7th January 1892, I have now the honor to submit a printed report upon the progress made upon the Madras Harbour for the Quarter ending 30th June last, and also to forward the tracings referred to in the report of the Board's Engineer.

2. The total number of vessels which have entered the Harbour during the quarter under review was 172, representing a tonnage of 285,909 net register. Of these however only 144 with a tonnage of 215,271 paid Port dues, amounting to Rs. 27,536, as against 142 vessels of a total net tonnage of 208,819 in the corresponding quarter of 1891: when the Port dues amounted to Rs. 28,369.

3. Those vessels which entered the Harbour without paying Port dues are accounted for by the steamers trading to Singapore, which under G.O. No. 243,244 dated 10th June 1899 pay Port dues once only in every sixty days. All other vessels, coasting and foreign, pay under the same G.O. Port dues upon every entry.

4. The rates of Port dues are as follows:—Sailing.				Steamers.
Foreign	...	...	2 annas.	2½ annas.
Coasting	...	...	1½ annas.	1¾ annas.
Straits and Ceylon	...	...	2 annas.	3 annas.
				} per ton net register.

5. I submit herewith statements of goods imported and exported in the form adopted for the Annual Administration Report, which gives the imports and exports for the years 1888-89 to 1891-92; to which is added the imports and exports of the first quarter of 1892-93.

6. It may appear to be going somewhat beyond the directions of the Right Honorable the Secretary of State for India to include these lists with the quarterly addition; but I have taken advantage of the form and figures being in type, to make use of the information; as by closing and printing these returns quarterly valuable statistical information will be made available for future reference, and the preparation of the Annual Administration Report will be facilitated and expedited.

7. The first item which calls for remark is the large quantity of foreign coal imported by private firms 17,283 tons during the quarter as against 33,686 tons for the year 1891-92, being more than half the imports of last year during the first quarter of this.

8. Kerosine oil shows a very heavy falling off only 28,400 cases during the quarter against a total of 327,862 cases last year. This may perhaps be accounted for by the preparation, now being actively pushed forward, for importation of Kerosine oil in bulk by tank steamers, and by the large balance of previous consignments remaining in stock.

9. Piece Goods and Twist show a reduction: only 17,281 bales for the quarter against 85,070 last year. This is due to the distress in the districts and to falling and uncertain exchange.

10. Iron would appear to be in demand more than half the total of last year having been imported during the first quarter of this, viz., 6946 tons against 13,737 tons.

11. Railway Stores show a continued decline.

12. Coasting imports call for little comment, except in the quantities of Rice landed. It is satisfactory to note in the general interests of the Presidency that only 101,168 bags have arrived, as against a total last year of 1,127,048. This reduction is due to the brighter outlook all over the country.

13. It should be noted, that as against the increase of coal from foreign ports—chiefly English coal for the Gold Mines in the Province of Mysore—only 600 tons of country coal have been imported as against a total of 13,242 in the year 1891-92.

14. Turning to Foreign exports Coffee has been shipped to the extent of 12,152 bags while the total for last year was 23,764. This information will however only be of utility when the quarterly returns have been kept up for some years, the season for exports of coffee being limited.

15. The small exports of cotton 8,512 bales against 48,202 in 1891-92—the lowest figure for many years past—would appear to be due to failure of crops.

16. Ground-nuts again show a large reduction; this is due not only to the badness of the season but also to the diversion of this trade to Pondicherry and other ports served by the South Indian Railway.

17. Tanned Hides and skins, it is satisfactory to note maintain a proportionate average.

18. The exports of Jaggery as given in the returns for the past four years show so great a fluctuation that it is difficult to assign any local reason.

19. Progress upon Harbour Construction has, as usual at the season, been slow throughout the quarter, owing to the necessity of taking precautions to avoid disaster to the Titan cranes, during the period of uncertain weather caused by the advent of the South-west monsoon. Every endeavour was made to take advantage of the locomotive powers of the new all round Titan Crane with, however, not very satisfactory results, as will be seen from a reference to para. 2 of the Engineer's report.

20. The rough sea usual at the season interfered with block setting: but in addition to this the tyres of the travelling wheels of the new Titan Crane failed, owing to a defect in construction, the two separate tyres upon each wheel parting from each other under the heavy strain of steaming the Titan out and home daily. The necessary repairs have been made at the Madras Railway Company's Perambore Works.

21. A curious fact to be noted in para. 3 of the Engineer's report is the deposit of mud at the South pier, this was a thick black slime, while the sea bed along the whole coast is clean sand.

22. Before reaching the cylindrical pier heads there remained to be built at the end of the quarter 89 feet at the north arm and 83 feet at the south, representing 18 and 17 courses of blocks respectively.

23. As remarked in the Administration report for 1891-92, Block-making was at the end of that period practically completed. During the quarter 138 blocks were made, leaving only 14 more required for the whole work.

24. The Board's Engineer has however taken the precaution since, to make duplicates of special blocks, required for the curved approaches to the pier heads, for the failure of one block would necessitate the entire stoppage of the work till another could be made, and mature fit for use. These duplicate blocks, if not required, will be utilised in the wavebreaker screen.

25. Para. 6 of the Engineer's report deals with the erosion, north of the Harbour, and the cross sections submitted herewith give valuable information.

26. The erosion of sand was generally normal: but the accumulation of sand from 6000 feet to the extreme end of the protective revetment, and at 7025 feet is unusual; and that no bay should have commenced to form at the north end of the revetment is also abnormal, experience having shown that this action commenced at the end of the old revetment, where it terminated at Cassimode, immediately the current changed to the south.

27. Observations carried on for a series of years as to the strength of the current, the height of the surf, and general direction of the wind, may hereafter be of service in determining the cause of the apparent capricious fluctuations of erosion and accretion of the shore line.

28. The accretion to the south of the Harbour has apparently been normal. The next Marine survey will show what has been the changes in the sea bottom outside the Harbour.

29. No observations have been made of the sea bottom within the Harbour: this will be done in connection with the survey outside; but I may remark that a record of soundings, which has been maintained by the Traffic Department along the iron screw pile pier, and along its eastern face, show that very little loss in depth of water has occurred since the Trust was formed.

30. The supply of water to shipping has been unsatisfactory for sometime past. Private owners have built water boats with capacities of 10 to 15 tons each, and it was found that the supply at the pier head was insufficient to serve the requirements of the shipping. The Trustees have from time to time considered various proposals for increasing the supply, none of which were entirely

satisfactory. The method of conveying water to the pier head has been by a water tower erected many years ago at the inner end of the pier: but the force in the Municipal Main was insufficient to fill this, and the supply has always been defective. The Board therefore sanctioned a larger connecting pipe from the Municipal Main direct to the pier head: and it is satisfactory to record that the increased supply has so far met the demand, although the improvement was made only as a tentative measure.

31. An attempt to recover the chains attached to the inner line of screw moorings, to which it was intended to attach buoys for the accommodation of small native craft, has proved abortive, the chains having apparently become completely buried in the sand, and could not be found.

32. With reference to para. 10 of the Engineer's report, I may mention that the Board has under consideration the desirability of disposing of the unserviceable screw mooring plant, retaining only the chains and buoys: which will be required for anchor or mushroom moorings; the value of the plant available for sale is in round figures Rs. 39,000.

33. I annex a statement of Receipts and Charges Revenue Account. The opening balance was Rs. 11,45,648 and the quarter closed with a balance to credit of Rs. 9,18,141. The reduction is due to the payment upon the 1st April of Rs. 1,00,000 refund of advances for Harbour Construction and of interest thereon Rs. 1,87,039.

34. Apart from this special payment therefore the Receipts during the quarter had been Rs. 59,500 in excess of expenditure, due to exceptionally heavy imports of food grains, chiefly rice.

35. The Right Honorable the Secretary of State directs that he may be kept informed of any Commercial Works in connection with the Harbour.

36. The Trustees have for several years past contemplated the landing, shipping and warehousing of goods: and with this object concluded an agreement with Government for the purchase of the old High Court buildings—originally the East India Company's Warehouse—at a cost of Rupees Three lakhs; and estimates were obtained for the construction of 50 and 100 ton iron lighters.

37. The Chamber of Commerce did not support the Board's proposals. The proposed purchase of the old High Court buildings has been abandoned, and a private company has since been formed to carry out these objects.

38. In their Administration report for the year 1891-92, the Trustees referred prominently to the necessity for better Railway Communication, in connection with Docks: but although the Trades Association is strongly in favour of Docks, the Chamber of Commerce is not unanimous, and considers that the time has not yet arrived to discuss the question.

39. The Chamber of Commerce has strongly urged upon Government the necessity for direct communication to Madras with the East Coast Railway, now under course of construction, but it is understood that this is not at present to be granted, and that the working of a section of this Railway is to be handed over to the Nizam's State Railway.

40. The question of Railway Communication is of paramount importance to the trade of this port, and Presidency; but it cannot be expected that trade will increase when railways lately built, under construction and proposed, tend to divert trade from Madras.

41. If the trade of this Presidency is to be diverted by the Railways to the West Coast, the proposal to construct Docks must be seriously reconsidered for a steady decrease in trade must be expected to follow facilities given in direct antagonism to the interests of this port, favouring diversion overlong leads, at reduced rates, assisted by lower rates of freight, at Bombay.

42. The Board strongly supports the representations of the Chamber of Commerce regarding the vital importance of improved Railway Communication with this Presidency City and Harbour; and would submit that Railway Construction should be carried out with a view to increase the volume of trade from hence, rather than to diminish it.

43. If this were done, freights would naturally fall; but if the construction of Railways tends in the future to divert trade from Madras, the usefulness of the Harbour will be seriously impaired: indeed it is a question whether the trade of the Port, if reduced in any way, can stand the extra tax imposed upon it for the present, and near future, by the Harbour; for it must be remembered that so far no reduction in charges has been feasible.

44. With the refund to Government of one lakh of rupees a year, and payment of interest at $4\frac{1}{2}$ per cent. upon a maximum outlay larger than was contemplated, a severe strain is put upon the resources of this Port; and improved facilities of Railway Communication tending to increase the volume of trade is, it appears to the Board, absolutely necessary to enable the Harbour to serve the purpose of its construction.

45. The Board would therefore commend to the serious consideration, of the Right Honorable the Secretary of State for India, the absolute and vital necessity in the interests of the trade of this Presidency, of placing this Harbour in such Communication with the Districts by Rail as would enable the Trustees to co-operate, by the construction of Docks, and retain within the Presidency its natural trade. If it be diverted to the West Coast or elsewhere and becomes dependent upon long lines of railway, and upon freights from distant ports, it cannot be expected to remain for long in a healthy condition.

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

C. Smith
Secretary

W. A. Smith
Chairman, Harbour Trust Board.

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Statement of Receipts and Charges, Revenue Account, from 1st April to 30th June 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
<i>Receipts.</i>												
I. Harbour Dues collections—												
Beach import ...	...	...	...	40,501	0	11						
Pier do. ...	...	...	...	16,401	5	11						
Beach export ...	...	...	...	5,377	6	4						
Pier do. ...	...	...	...	13,384	10	1						
Storage ...	...	...	...	500	15	2						
Wharfage ...	...	...	...	1,141	13	4						
Craneage ...	...	...	...	5,034	5	4						
Penalties (section 84) ...	...	...	...									
Demurrage ...	...	...	...									
										82,341	9	1
Porterage—												
Beach ...	...	...	...	12,894	1	7						
Pier ...	...	...	...	8,748	13	7						
Haulage ...	...	...	...	2,617	1	3						
Miscellaneous ...	...	...	...	1,664	5	7						
										27,924	6	0
Miscellaneous—												
Harbour Trust properties ...	...	...	...	334	4	5						
Provisions ...	...	...	...	180	6	6						
Water collection ...	...	...	...	1,053	8	0						
Sundries ...	...	...	...									
										1,568	2	11
II. Interest realized on Government of India 4 per cent promissory notes.										2,536	5	6
										12,60,018	10	0
<i>Charges.</i>												
I Interest (under section 30) ...							1,87,039	7	10			
II. Repayment of loan for construction of harbour ...							1,00,000	0	0			
III. Establishment, &c.—										2,87,039	7	10
1. Chairman's salary ...	...	...	...	1,200	0	0						
2. Secretary's do. ...	...	...	...	2,250	0	0						
3. Correspondence Department ...	...	...	...	842	9	9						
4. Accounts Department ...	...	...	...	1,517	3	1						
5. Cash Department ...	...	...	...	879	3	8						
6. Traffic Department (Shore staff) ...	...	...	...	6,583	0	10						
7. Preventive service ...	...	...	...	3,149	2	8						
8. Do boatmen ...	...	...	...	295	1	5						
9. Contribution to Government for pensions ...	...	...	...	212	7	9						
10. Fees to Trustees ...	...	...	...	1,740	0	0						
11. Contribution to Provident Fund ...	...	...	...	1	4	0						
										18,675	1	2

IV. Contingencies--

(a) Subject to regular audit.--

Postage ...	6 5 6
Receipt stamps ...	55 7 0
Telegrams ...	...
Furniture ...	272 0 0
Fees for audit ...	...
Law charges ...	...
Stationery and Printing ...	577 2 0
Advertisement charges ...	2 6 0
Uniform to Preventive service ...	25 0 0

(b) Admissible without detail audit--

Overtime fees to establishment ...	1,185 7 1
Do. to Preventive service and boatmen ...	758 13 3
Miscellaneous ...	965 15 10

V. Refunds ...

VI. Petty Construction and Repairs.--

New works... ..	8,175 9 2
Repairs	2,872 12 9
Tools and plant	...

VII. Portage--

1. Pier coolies	3,570 9 11
2. Do. Beach and Custom House ...	13,907 10 4
3. Madras Railway Company... ..	435 5 6
4. South Indian Railway Company ...	66 9 0
5. Coasting cargo	195 12 2
6. Boat hire	945 8 7
7. Claims for losses and damage ...	174 12 2
8. Engine charges	443 4 10
9. Refunds	402 10 10
10. Steam crane charges	254 3 6
11. Contribution to Cooly Provident Fund	322 10 9

Contingencies--

(a) Subject to regular audit.--

Postage	...
Receipt stamps	3 4 0
Telegrams	...
Furniture	...
Tarpaulins	152 0 0
Law charges	25 0 0
Stationery and Printing	308 8 0
Advertisement charges	...
Lighting pier and yards	355 8 0

(b) Admissible without detail audit--

Miscellaneous	...
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Total Expenditure ...

Balance on 30th June 1892--

Government securities (par value 7,00,000)	6,83,220 8 10
Bank of Madras	2,34,166 4 3
General Cash	253 14 4
Advance for Contingencies	500 0 0
2,34,920 2 7	9,18,140 11 5
Total	12,60,018 10 0

ACCOUNTS DEPARTMENT,
HARBOUR TRUST BOARD,
14th July 1892.

H. E. HOPE ROSS,
Chief Accountant.

1. STATEMENT OF GOODS IMPORTED FROM FOREIGN PORTS.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Apparel and Effects ... Packages...	1,368	1,217	851	1,347	212				
Alum ... Barrels ...	496	504	1,233	326	156				
Asphalte, Tar, & Pitch. Casks ...	2,797	3,133	3,623	4,439	913				
Acids ... Cases ...	1,484	775	1,362	1,854	799				
Arms and Guns ...	516	235	126	442	122				
Arrack ... Casks ...	832	773	346	884	146				
Blankets ... Bales ...	25	36	58	119	4				
Beef and Pork ... Cases ...	2	...	...	36	...				
Bricks ... 100 ...	420	1,497	222	1,021	170				
Beer ... Cases ...	6,697	5,664	6,606	6,123	2,242				
Boiler ... Hogsheads ...	2,160	935	110	1,140	639				
Boiler ... No. ...	4,424	3,649	8,217	6,808	2,517				
Corks ... Bundles ...	191	183	88	88	14				
Canvas ... Bales ...	140	77	244	121	59				
Candles ... Cases ...	14,278	20,539	18,515	16,637	8,329				
Colours ...	1,980	1,056	2,698	3,838	465				
Confectionery Provisions and Oilman stores	17,042	14,214	17,896	23,395	5,047				
Crockery and Glassware ... Crates & Casks...	2,942	3,018	4,099	4,538	1,104				
Chalk ... Barrels ...	377	95	178	370	15				
Coconut ... Cases ...	17,293	8,868	7,049	14,522	4,315				
Cast Iron Pipes and Tubes ... Tons ...	683	1,099	950	335	435				
Camphor ... Tubs ...	2,675	1,560	1,556	4,739	1,091				
Coal, Coke and fuel ... Tons ...	13,773	11,992	16,628	...	...				
Coal ...	...	...	...	33,686	17,283				
Coke ...	...	...	...	578	101				
Crackers ... Cases ...	879	975	1,134	470	...				
Copper Plates and Tiles No. ...	498	5,012	1,594	4,802	90				
Corrugated Iron ... Packages...	51	449	2,913	805	506				
Dynamite ... Cases ...	4,998	6,450	9,230	13,040	3,226				
Earthenware ... Crates ...	2,104	794	1,913	2,318	220				
Fire Clay ... Casks ...	234	147	23	2,768	56				
Flour ... Bags and Barrels...	483	675	337	1,317	296				
Fampel ... Bales ...	74	23	58	54	3				
Gunpowder ... Packages...	476	962	1,746	6,667	1,100				
Harmonium ... Cases ...	4	11	9	30	...				
Hardware ... Cases ...	4,247	2,924	3,954	8,234	1,906				
Hops ... Packages ...	269	115	129	129	19				
Iron ... Tons ...	17,771	12,762	18,138	13,737	6,946				
Iron Safes ... No. ...	577	343	241	296	90				
Kerosine Oil ... Cases ...	248,024	248,505	345,000	397,832	28,400				
Lime Water ...	108	31	45	...	...				
Malt ... Bags ...	565	609	354	445	88				
Millinery and Haberdashery ... Cases ...	1,640	1,393	1,356	1,699	233				
Matches ...	11,739	4,928	7,916	10,655	2,639				
Machinery ... Tons ...	1,752	1,799	1,600	3,099	886				
Nails ... Kegs ...	19,256	4,409	13,287	18,744	4,471				
Oil and Turpentine ... Drums ...	6,984	8,363	6,942	7,225	2,365				
Piece Goods and Twist Cases & Bales	105,495	97,383	82,649	85,079	17,281				
Paper ... Bales ...	3,236	3,988	4,646	6,546	1,857				

STATEMENT OF GOODS IMPORTED FROM FOREIGN PORTS—concluded.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Piano	No.	102	135	120	153	28			
Printing Types	Cases	330	348	263	492	409			
Pig Lead	No.	1,895	2,047	1,420	2,198	260			
Paint	Kegs	7,887	7,945	7,457	7,758	3,838			
Rattan	Bundles	949	6,527	883	3,823	2,117			
Soaps	Cases	2,075	2,491	1,996	1,850	173			
Salt	Cases & Cases	488	620	225	383	104			
Steel	Cases & Cases	921	3,077	874	864	281			
Steel Bands and Bars	No.								
Steel Hoop	Bundles		4	5,746	11,261	2,830			
Sherrie	Cases	173	13	747	5,567	1,182			
Soda-water Bottles	Crates	846	997	840	1,395	462			
Sulphur	Casks	825	831	683	752	383			
Shot	Kegs	220	348	240	477				
Sundries	Packages	32,262	39,934	48,304	48,408	6,143			
Spice	No.	1,330	1,544	1,115	1,229	253			
Sugar	Bags			2,250	2,152	243			
Slates and Pencils	Cases	1,380	645	1,101	1,242	161			
Spelter	Cases	13,343	3,255	11,342	838	2,144			
Saw	Cases	34	7	68	70	30			
Twine and Rope	Bales & Coils	71	281	183	438	63			
Tin Plates	Boxes	4,194	3,771	4,994	5,608	845			
Wine and Spirits	Cases	4,173	45,479	40,857	37,877	10,796			
Window Glasses	Casks	2,094	3,240	2,739	863	111			
White and Red Lead	Pantheons	356	392	149	360	109			
Yellow Metal	Cases	1,987	5,158	8,297	5,972	2,775			
Zinc Sheets	Kegs	859	969	495	681	144			
Horses	Cases	907	2,722	4,309	3,076	451			
Ponies	Packages	1,221	1,174	595	2,749	475			
Cows	No.	837	696	611	816	3			
Dogs		3	6	17	70	3			
Elephants		5	5	17	19				
		14	13	10	12				
				25	10				

STATEMENT OF STORES IMPORTED BY THE MADRAS RAILWAY COMPANY.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 92.	Quarter ending 30th Sept. 92.	Quarter ending 31st Dec. 92.	Quarter ending 31st Mar. 93.
Stores	Packages	34,697	81,723	51,870	82,105	13,429			
Fuel	Tons		171	467	3,605	389			
Coke		3,587	9,732	4,678					
Coal		997	645	839	1,437	141			
Timber		52	2,702	4,301	27				
Fire Brick	100	1,622	1,483	3,800	2,477	569			
		141	140	165	115				

STATEMENT OF STORES IMPORTED BY THE SOUTH INDIAN RAILWAY COMPANY.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 92.	Quarter ending 30th Sept. 92.	Quarter ending 31st Dec. 92.	Quarter ending 31st Mar. 93.
Stores	Packages	109,131	694,812	618,987	68,282	5,718			
Fuel	Tons		856						
Coke									
Coal					14				
Timber		5,276	6,582	5,930					
Boilers	No.	10	10	55	4				

IV.

STATEMENT OF GOODS IMPORTED FROM COAST PORTS.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Apparel and Effects	Packages	378	414	634	451	105			
Alum	Barrels	51	56		10	5			
Acids	Cases	149	11	99	89	11			
Animals	No.			210		10			
Arms and Guns	Cases	15	49	10	45	4			
Boilers	No.	3	1	7	2				
Bricks and Tiles	100	120	1,239	1,630	1,396				
Coffee	Bags	715	461	349	379	366			
Candles	Cases	1,871	682						
Colours		1,667	1,067	1,541	1,221	378			
Crockery and Glassware		782	413	305	322	96			
Coal	Tons	2,351	186	14,884	13,249	609			
Carpets	Bales	112	178	187	77	20			
Camphor and Benjamin	Tubs	1,483	1,585	4,640	682	248			
Copra	Bags	191	124		32				
Crackers	Cases	10							
Copper		1,350	1,061		1,667	356			
Do.	Tiles & Ingots		11,953	1,071	90				
Cutch & Lac	Packages			5,703	4,415	369			
Cocoanuts	No.	900	600		2				
Earthenware	Crates	169	30	23	392	1,424			
Do.	Pipes	2,080			2,626	886			
Firewood	Tons	1,212	892						
Flour	Bags & Barrels	2,819	4,352	4,177	7,248	2,334			
Gummies	Bales	7,993	11,863	10,786	7,930	381			
Gram and Peas, &c.	Bags	125,942	191,357	225,739	271,632	73,693			
Garlic		1,899	7,077	8,523	2,945	20			
Hardware	Cases	542	469	605	641	129			
Horns	Bundles	702	1,043	681	886	239			
Hides	Bales	4,443	7,400	6,936	6,127	3,351			
Iron	Tons	277	457	400	231	48			
Iron Safes	No.	65	47	19	31	10			
Laaves	Bundles	5,116	5,796	5,574	6,508	773			
Machinery	Tons	171	109	251	158	15			
Millinery and Haberdashery	Cases	254	238	189	203	41			
Oil and Turpen-tine	Drums	2,794	2,540	2,846	8,310	1,636			
Piece Goods	Cases and Bales	7,306	6,237	3,028	3,801	514			
Paper	Bales	3,820	5,003	3,985	3,128	662			
Paint	Kegs	212	1,098	99	224	14			
Piano	No.	6	7	5	15	4			
Rice	Bags	26,769	69,446	223,751	1,147,048	101,168			
Rose Water	Cases	1,409	1,867	715	1,434	762			
Seeds	Bags	13,066	13,212	12,044	30,406	7,998			
Skins	Bales	5,729	5,727	5,387	6,199	1,130			
Silk		837	883	825	1,051	170			
Sandalwood	Bundles	145	297	63	143	3			
Sugar	Bags	6,900	2,816	2,131	1,881	158			
Spice	No.	201	184	37	202	14			
Sundries	Packages	43,462	33,472	40,653	47,536	13,576			
Soap	Cases	105	179	363	445	3			
Sulphur	Casks	48	173		471	331			
Spice	Packages			3,674	359	482			
Twine and Rope	Bales and Coils	1,164	541	942	889	401			
Tin Plates	Boxes	1,118	1,322	708	1,807	93			
Twist	Bales	4,064	3,434	1,333	1,126	209			
Turmeric	Bags	5,790	8,421	10,751	7,224	1,086			
Timber	Tons	17,277	17,889	16,850	15,187	2,590			
Tea	Cases	1,421	3,813	4,785	1,331	2,272			
Yellow Metal		155	342	809	6	193			
Horses	No.				1	8			

V. STATEMENT OF GOODS EXPORTED TO FOREIGN PORTS.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Beer and Ale	Cases ...	13	30	...	18	2			
	Casks ...	...	2	...	60				
	Hogsheads ...	1	1	...	3				
Cinchona Bark	Bales ...	2,185	1,299	1,346	471	116			
Chillies	Bags & Bundles	2,225	3,262	1,862	2,760	...			
Cigars	Cases ...	1,239	1,423	942	1,249	146			
Coffee	Bags ...	23,456	15,515	22,708	29,764	12,162			
Cotton	Bales ...	55,178	101,837	77,922	48,202	8,512			
Cotton Twist	"	3,960	5,956	8,271	4,229	2,294			
Coriander and Onum Seeds	Bags ...	9,281	11,610	1,385	8,218	861			
Carpets	Bales ...	645	725	524	418	50			
Coal	Tons ...	182	115	...	905	213			
Deer Horns	Packages	874	1,366	1,311	1,574	264			
Explosive	Cases ...	14	25	...	21				
Firewood	Tons ...	23	...	...	...				
Four-wheel Carriage	No. ...	30	3	2	8	1			
Ground Nuts	Bags ...	95,642	206,096	190,320	93,132	11,610			
Gram, Peas, &c.	"	937	1,454	...	519	...			
Horns, Cow and Buffalo	Tons ...	199	66	84	62	15			
Hides, Tanned	Bales & Bundles	17,858	17,582	16,460	21,848	5,444			
Indigo	Cases & Chests	22,762	27,618	24,453	14,622	2,762			
Iron	Tons ...	29	23	...	2	...			
Jaggery	Bags ...	23,520	111,092	34,135	28,985	18,736			
Myrabolams	Bags ...	195	452	2,576	235	60			
Miscellaneous	Packages	23,607	17,990	16,335	37,808	8,290			
Onions	Bags & Baskets	7,979	9,078	12,022	21,964	4,458			
Oil	Casks ...	331	587	50	434	18			
Piece-goods	Bales and Cases	3,372	3,419	5,843	6,205	1,075			
Potatoes	Bags & Baskets	3,837	2,703	2,284	2,437	157			
Poonac	Bags ...	13,116	15,187	26,134	33,880	5,962			
Piano	No. ...	10	8	3	41	5			
Rice	Bags ...	17,589	65,475	2,059	1,138	1			
Redwood	Tons ...	1,382	2,052	1,809	699	342			
Seeds, Gingelly and Castor	Bags ...	20,137	80,411	19,021	1,313	652			
Skins, Sheep and Goat, Tanned	Bales ...	32,498	30,399	31,209	32,194	7,435			
Sandalwood	Bundles ...	672	637	1,728	1,534	43			
Spirits and Wine	Cases ...	135	331	...	332	...			
	Casks ...	5	87	...	977	1			
	Punchoons ...	...	18	...	...	...			
Sugar	Bags ...	1,112	7,296	...	599	21			
Species	Boxes ...	153	33	55	94	21			
Tamarind	Bundles ...	8,277	2,519	1,156	6,443	1,969			
Turmeric	Bags ...	1,898	1,526	...	2,159	217			
Tea	Cases ...	4,275	3,822	2,384	2,265	424			
Two-wheel Carriage	No. ...	...	...	3	1	...			
Wool	Bales ...	970	1,043	1,196	1,021	436			
Yellow Metal	Tons ...	3	3	...	107	...			

VI. STATEMENT OF GOODS EXPORTED TO COAST PORTS.

	Packages.	1888-89.	1889-90.	1890-91.	1891-92.	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Beer and Ale	Cases ...	249	456	289	352	81			
	Casks ...	16	110	159	159	15			
	Hogsheads ...	161	10	47	7	1			
Cinchona Bark	Bales	178	186	...	395	...			
Chillies	Bags & Bundles	2,908	5,535	4,392	2,064	1,264			
Cigars	Cases ...	1,438	1,298	1,345	1,418	311			
Coffee	Bags ...	506	574	605	507	806			
Cotton	Bales ...	1,972	4,761	8,521	5,721	832			
Cotton Twist	"	3,816	3,075	5,103	4,698	784			
Coriander and Onum Seeds	Bags ...	2,728	7,071	4,783	2,970	1,531			
Carpets	Bales ...	34	26	45	68	14			
Coal	Tons ...	...	94	976	275	25			
Deer Horns	Packages	85	7	84	108	1			
Explosive	Cases ...	201	303	55	2,668	315			
Eggs	Pots ...	2,717	3,882	2,801	1,165	157			
Firewood	Tons ...	28	8	...	2	...			
Four-wheel Carriage	No. ...	26	9	34	21	9			
Groundnuts	Bags ...	30,757	20,996	61,463	27,790	7,797			
Gram, Peas, &c.	"	15,204	8,987	3,568	621	66			
Horns, Cow and Buffalo	Tons ...	198	336	30	310	28			
Hides	Bales & Bundles	407	495	506	379	111			
Indigo	Cases & Chests	405	829	412	165	...			
Iron	Tons ...	989	743	850	2,244	885			
Jaggery	Bags ...	376	296	...	258	86			
Kerosine Oil	Cases ...	1,516	4,680	3,463	10,827	212			
Myrabolams	Bags ...	322	139	535	1,054	1			
Miscellaneous	Packages	12,419	20,868	36,308	50,510	12,262			
Onions	Bags & Baskets	9,705	11,516	21,141	22,442	2,036			
Oil	Casks ...	790	1,844	1,331	807	285			
Piece Goods	Bales & Cases	3,429	3,613	6,259	5,615	1,566			
Potatoes	Bags & Baskets	24,229	21,992	26,470	23,637	918			
Poonac	Bags ...	2,210	1,469	4,752	4,770	6,023			
Piano	No. ...	5	42	24	23	2			
Paddy	Bags ...	27,149	4,019	11,426	...	...			
Rice	"	6,790	8,198	6,038	5,448	3,076			
Redwood	Tons ...	62	194	...	119	48			
Seeds, Gingelly and Castor	Bags ...	19,374	28,756	57,157	16,803	401			
Skins, Sheep & Goat, Tanned	Bales ...	510	758	1,271	721	90			
Sandalwood	Bundles ...	224	342	1,856	153	54			
Spirits	Cases ...	2,143	2,098	3,049	2,982	1,255			
	Casks ...	150	162	250	727	86			
	Punchoons ...	2	16	54	12	1			
Sugar	Bags ...	460	2,307	2,093	778	564			
Species	Boxes ...	278	164	154	236	169			
Tamarind	Bundles ...	2,010	3,598	17,197	3,624	4,340			
Turmeric	Bags ...	8,972	463	4,719	19,258	5,218			
Tea	Cases ...	55	544	298	341	17			
Two-wheel Carriage	No. ...	14	8	27	15	4			
Wool	Bales ...	37	567	475	769	147			
Yellow Metal	Tons ...	88	25	47	54	12			

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

Department.	Description.	Class.	1888-89	1889-90	1890-91	1891-92	Quarter ending 30th June 1892.	Quarter ending 30th Sept. 1892.	Quarter ending 31st Dec. 1892.	Quarter ending 31st Mar. 1893.
Accountant-General.	Specie Silver.	Boxes	1,789	1,199	1,176	403	100			
	" Copper.	"	335	1,320	3,475	5,100				
	Silver & Copper Notes	"	174							
	"	"	19	21	8	32				
	Packages	No.				27				
State Railway	Packages & Pieces	"	593		3					
	Rails	"								
	Sleepers	"								
Public Works Department	Bridge Works	Tons								
	Boilers	No.	2			2				
	Coal	Tons	106	44	60	50				
Ordnance	Iron	"	220	442	250	271				
	Stores	Pkgs.	1,991	1,187	2,049	15,148	2,023			
	Coal	Tons	86	1,265	939					
Madras Harbour Works	Ammunition	Boxes	1303	51		2,148				
	Stores	Pkgs.	15,838	22,209	22,898	13,017	4,007			
	Cement	Casks	35,764	40,134	30,375	1,809				
Clothing	Stores	Pkgs.	321	2,003	805	3,869				
	Coal	Tons		496	586					
	Packages	No.	1,773	2,831	1,527	1,983	589			
Police	"	"	248	133	335	122	98			
Salt Revenue	"	"	76	115	190	272	220			
Post Office	"	"	980	1,353	1,739	1,119	198			
Medical	"	"	1,384	1,316	1,250	1,779	413			
Telegraphs	"	"	6,399	16,414	19,214	34,768	1,752			
Stationery	"	"	1,088	743	611	732	1			
Stamps	"	"	1,435	1,139	1,047	1,961	186			
Commissariat	"	"	1,811	1,779	4,384	8,588	2,013			
Gazette Press	"	"	52	32	2,414	161	7			
Marine	"	"	32	182	511	729	117			
Supt. Railway	"	"								
Mail Service	"	"	52	81						
Revenue Survey	"	"	252	52	32	297	73			
Agriculture	"	"	1	6	292	380	209			
Government Central Museum	"	"		4	10	15				
Under Secy. to Government	"	"	87	84	94	235	489			
Supt. of Prisons	"	"	3	4		1	2			
Revenue Board	"	"	65	36	139	424				
Forests	"	"	31,811	175	1,318	1,196	2			
Bank of Madras	Specie Silver.	Boxes		3						
Presidency College	" Copper	"		50						
	Packages	No.		13	40	28	7			
	"	"	2	2		3				
School of Arts	"	"								
Sanitary Commissioner	"	"	1							
Inspector of Cattle Diseases	"	"	116	10		9				
Chemical Examiner	"	"	25	15	32	31	2			
Medical College	"	"	50	2	64	73				
Dy. Collectors	"	"			14	9	1			
Camp Equipage	"	"								
Astronomer	"	"	11	6	6	29	2			
Presidency Pay Master	"	"	8	6	13	2	5			
Registration	"	"	24	2	3	7	1			
Director of Public Instruction	"	"		9	5	9				

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

Department.	Description.	Class.	1888-89	1889-90	1890-91	1891-92	Week ending 30th June 1892.	Week ending 30th Sept. 1892.	Week ending 31st Dec. 1892.	Week ending 31st Mar. 1893.
Accountant-General	Specie Silver.	Boxes	118	174	20	411	27			
	" Copper.	"	136	216	330	965	173			
	" Notes.	"	4	5	10	6	4			
	" Packages	No.	1	1	6					
	" Silver	Boxes		10		34				
Bank of Madras	" Copper.	"		37			33			
Ordnance	Packages & Pieces.	No.	5,765	25,038	6,564	8,595	1,083			
Public Works Department	"	"	4,420	18,358	429	1,784	141			
Clothing	"	"	916	1,018	1,254	1,327	225			
Police	"	"	749	849	727	889	95			
Salt Revenue	"	"	330	493	306	591	84			
Medical	"	"	1,049	1,868	1,552	1,337	518			
Telegraph	"	"	355	1,125	9,462	8,845	35			
Stationery	"	"	777	398	799	693	153			
Stamps	"	"	165	171	195	220	53			
Commissariat	"	"	5,128	5,179	7,761	7,971	740			
Gazette Press	"	"	443	567	476	526	114			
Marine	"	"	419	307	268	390	92			
Revenue Board	"	"	26	52	79	77	18			
Revenue Settlement	"	"	157	55	87	51	29			
Revenue Survey	"	"	31	77	74	73	56			
Superintendent of Prisons	"	"	151	91	71	69	35			
Registration	"	"	80	64	61	66				
Conservator of Forests	"	"	28	49	31	34	3			
Quarter-Master General	"	"								
Government Central Museum	"	"	7	6	9	10	4			
Deputy Collectors	"	"	20			2	9			
Camp Equipage	"	"								
Government Astronomer	"	"	5	2			11			
Agriculture	"	"				5	15	2		
General Hospital	"	"								
State Railways	"	"	293			100				
Inspector of Cattle Diseases	"	"	11	11	3	3	1			
Chemical Examiner	"	"		1	3					
Director of Public Instruction	"	"	9	2	16	10	3			
Registrar of University	"	"	14	16	16	13				
Collectors	"	"				10				
Curator of Government Garden	"	"		2	12	11				
Engineer, H. T. Board	"	"		1						
Crown Officer	"	"								
High Court	"	"	1	8	13	14	6			
School of Arts	"	"	1							
Secretary to Government, Public Department	"	"	4	1		2				
Registrar-General of Births, Deaths and Marriages	"	"								
Jain Commissioner	"	"		1		1				
Consulting Engineer to Government Railways	"	"		4	36	20				

No 1089 P.

G. R. P. LLOYD,

Acting Traffic Manager,
Harbour Trust Board.

To

THE SECRETARY,
Harbour Trust Board.3011-12
18

3011-14
19

1589

15

Report to accompany Quarterly Statement of Progress on the Madras Harbour Works for the Quarter ending 30th June 1892.

General.—At the end of last quarter the two titan cranes were working at the pier heads, and the all-round crane was depositing wave-breaker blocks on the seaface of the North arm of the harbour. The quarter under review, April, May and June is an unfavourable one for progress, owing to its being necessary to take precautionary measures to meet the uncertain weather of the month of May, and to the occurrence of the Easter and Whitsuntide holidays. The actual progress and work done on each part of the work are described in the following paragraphs:—

2. North Pier.—Early in April excavation was being carried on, and the bed of the 242nd course was being prepared. The first block of the course was set on the 7th, three more blocks on the 11th and five more on the 18th or nine blocks in all. The Easter holidays then intervened, and it was necessary to arrange for the titan being turned to set wave-breaker blocks, for the protection of the new work, prior to running the crane home for the uncertain season. Sixty-six wave-breaker blocks were thus set, and the titan got to its berth on shore on the 24th April. Previous to this, the all-round crane was taken to the shore, and a new berth made for it to enable the cranes to pass each other so that either crane might be run on to the pier without disturbing the other. As the main objection to the use of the old titans during May, and the time required to turn them and get them home, does not apply to the all-round crane, permission was obtained from the Trustees of the Board to use this crane during May, and it was set to work to continue the wave-breaker on the 12th May. A condition of its being so used was that it was to be run to a place of safety every evening. It was worked thus for six days, and seventy-two blocks were deposited. Further work in this way was stopped by two of the tyres of the driving wheels becoming loose, but it was also manifest that considering the time occupied in running the crane backwards and forwards, and setting into position for work, (about two hours each way including delays and stoppages), and the expense of steaming during that time that this mode of work was not advantageous. The tyres referred to are eight inches broad, and formed of two tyres each four inches broad. They failed by separating, and the remedy indicated by the failure is the formation of the tyre in one piece shrunk on to the cast-iron body with a central rib or channel to prevent movement. Arrangements having been made to remedy the defects in the tyres of the all-round crane, the old titan was taken out and turned for setting blocks on the 8th June, a delay of two days being due to Whitsuntide. After some rough weather, fifteen blocks were set on the 17th and 18th June completing the 242nd course. The sea was again rough on the 20th on the 21st the titan was taken to its berth on shore and its place taken by the all-round crane. The preparation of the base of the next course was not completed up to the end of the quarter. On the 30th June there remained about 89 feet or 18 courses of superstructure to be built before the cylindrical head is commenced.

3. South pier.—On this pier, progress for the quarter consists of the preparation of the bed of, and the setting of the 205th course composed of 24 blocks, and consolidating the rubble base with concrete during the month of May, when the titan crane was not working. The bed of the 205th course, which is 33 feet below mean sea level was much covered with stone, mud and blocks from the old pier, and, as in the case of the North pier, progress is con-

sequently slow. Twelve blocks were set on the 11th and 12th of April, and the titan turned for setting wave-breakers on the 19th and 20th. Thirty-five wave-breaker blocks were deposited on the 22nd and 23rd, and the titan brought home on the 25th.

4. During May, the consolidation of the rubble base inside the harbour was continued. The titan crane was got out and ready for work on the 4th June, and the 205th course was completed on the 17th, when the preparation of the next bed was gone on with till the end of the month. At the end of the quarter there remained about 83 feet or 17 courses to be set before the commencement of the cylindrical head.

5. **Blockmaking.**—One hundred and thirty-eight blocks were made during the quarter. At the end of the quarter, only fourteen more blocks remained to be made to meet the requirements of the work.

6. **Foreshore, North of the harbour.**—Cross sections of the revetment work were taken at the close of the quarter and plotted on the sections previously taken, and are submitted with this report. The sections show an erosion of sand between 4,000 and 6,000 feet, which is to be expected during the quarter under review, but from 6,000 to the extreme end at 7025 show an accumulation of sand, which I believe, is not usual, and up to the end of the quarter, there was no indication of a bay being formed at the end of the stone work, although a short length of the revetment had been washed down and mixed with the accumulated sand. Generally the revetment has up to the present been acted on, as was expected, that is, its outer slope has been flattened although there are places where it seems probable that more stone will be required. To lessen the likelihood of damage from scour in the event of water washing over or through the revetment to the hollow in rear, or at any rate to localise such damage, four banks of stone were placed across this hollow during the quarter, but this hollow should, I think, be eventually filled up, and this might, I think, be done next year with sand which has accumulated in front of the revetment.

7. **Foreshore, South of the harbour.**—On the plan accompanying this report are shown the high water lines of 31st March 1892 and of 30th June 1892. From these it will be seen that there has been an advance of about 150 feet during the quarter. Close to the pier, the high water mark was about 1,210 feet from the commencement of Block-work on the 30th June 1892 and on the same day of the previous year it was about 1,080 feet from the same point.

8. **Sea bottom within the harbour.**—No further observations on this point have been made during the quarter owing to the absence of the Assistant Engineer on sick leave; on his return in August, a complete survey will be made when a proper comparison can be made with the survey of 1889.

9. **Miscellaneous.**—The first floor of the new Harbour Master's office was completed during the quarter, and it is expected the whole building will be finished early in August.

A new connection with the municipal main has been made for improving the fresh water supply to the iron pier; if the supply is still found deficient, a new line of pipes must be laid under the pier at a lower level. On the 21st June, a diving boat and staff were set to work to pick up the chains connected with the inner line of screw moorings laid down in 1881. The moorings are required by the Board for small native craft, but as the chains are not buoyed and probably there has been considerable variation in the sea-bottom one way and another since the moorings were put down, they are extremely difficult to find.

10. The question has been raised as to the utilization of the stock of screw moorings sent out from England. Some of which were put down, in 1881 with the aid of the hopper barges "HOBART" and "SALISBURY" and which were wrecked in the cyclone of November 1881. Mr. F. N. Thorowgood Superintendent, Harbour Works in his letter No. 46 W. dated 21st September 1881 to the Secretary to Government, brought to notice the difficulties met with in putting down

these moorings, and I am inclined to think, that if anything better than the existing moorings is required, that it should not be in the form of screw moorings. This will be separately reported on.

11. As asked for in the memo by Sir Alexander Rendel, accompanying G.O. No. 430 W, dated 12th February 1892, a statement is attached, giving information as to the estimated cost of completing the works.

12. The expenditure to the end of the quarter including Establishment and Contingencies is Rs. 1,17,83,753 out of a total estimated cost of Rs. 1,28,83,386 leaving a balance of Rs. 5,99,633 to be spent for completion.

HARBOUR WORKS OFFICE,
MADRAS, 2nd August 1892.

F. J. WILSON,
Ag. Engineer Harbour Trust Board.

Memorandum to accompany Statement of progress for the Quarter ending 30th June 1892.

1. Estimated sum required to complete the works at the commencement of the quarter, except Establishment, Tools and Plant, and Contingent charges...	Rs. 7,90,568
2. Cost of work done during the quarter	1,04,534
	6,86,034
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*	6,86,034

* The difference between this sum and that shown in the final part of the report is due to the exclusion of the Establishment, Tools and Plant, and Contingent charges.

F. J. W.

HARBOUR WORKS OFFICE,
MADRAS, 2nd August 1892.

F. J. WILSON,
Ag. Engineer, Harbour Trust Board

Progress Statement No. 29.

Statement showing Progress during Quarter ending 30th June 1892 as shown on accompanying Training Plan No. 58.

Note.—The Figures in **red** denote for comparison, progress and quantity of work done in Quarter ending 30th June 1891.

MADRAS, 2nd August 1892

F. J. WILSON,
Ag. Engineer, Harbour Trust Board.

3011-12
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MADRAS HARBOUR WORKS.

COMPARISON OF EXPENDITURE TO DATE WITH SANCTIONED ESTIMATE FOR THE QUARTER ENDING 30th JUNE 1892.

Sub-head of Work.	AS PER ESTIMATE SANCTIONED IN SECRETARY OF STATE DESPATCH No. 1, DATED 7th JANUARY 1892.										AS EXECUTED.				Value of work done up to date, columns 11 and 12.
	Quantity.	Rate.	Per.	Cost.	Total.	Quantity.	Rate.	Total up to end of last Quarter.			During the Quarter.			Up to date.	Arrears not paid.
								Rs.	A. P.	Rs.	A. P.	Rs.	A. P.	Rs.	A. P.
EXPENDITURE UP TO 31st DECEMBER 1891.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Works	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2 Establishment	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3 Tools and Plant	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4 Alteration and extension of break ground ... Priety ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5 Ordinary rubble deposited from break water. Tons	18,900	1 12 0	...	21,378	...	...	...	...	...	...	...	...	...	...	...
6 Do. from boats	208,693	2 0 5	...	4,19,218	...	...	...	...	...	...	...	...	...	...	...
7 Concrete blocks for building	51,399	11 8 0	...	6,03,110	...	...	...	...	...	...	...	...	...	...	...
8 Concrete blocks at commencement of new work	9,615	2 1 1	...	2,00,716	...	...	...	...	...	...	...	...	...	...	...
9 Setting blocks at commencement	26,930	2 1 1	...	5,66,363	...	...	...	...	...	...	...	...	...	...	...
10 Do. at Fairhead	12,185	2 1 1	...	2,58,083	...	...	...	...	...	...	...	...	...	...	...
11 Concrete in mass for filling	77,823	9 8 3	...	7,36,501	...	...	...	...	...	...	...	...	...	...	...
12 Do. at Fairhead	988	4 8 3	...	4,10,204	...	...	...	...	...	...	...	...	...	...	...
13 Wreckers blocks	77,823	9 8 3	...	7,36,501	...	...	...	...	...	...	...	...	...	...	...
14 Depositing do.	77,823	9 8 3	...	7,36,501	...	...	...	...	...	...	...	...	...	...	...
15 Concrete in protection for Rubble Base	1,433	9 10 1	...	1,30,000	...	...	...	...	...	...	...	...	...	...	...
16 Cranes, Iron	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17 Concrete coping	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18 Cost of North Pier Caisson and setting in position and filling same as items 26, 27, 28 and 29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total for North Pier	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19 Ordinary rubble deposited from break water. Tons	75,479	2 0 0	...	1,50,958	...	...	...	...	...	...	...	...	...	...	...
20 Large do. deposited from break water. C. yds.	45,066	1 1 0	...	4,95,706	...	...	...	...	...	...	...	...	...	...	...
21 Concrete blocks for building	3,556	3 0 0	...	1,06,680	...	...	...	...	...	...	...	...	...	...	...
22 Setting blocks at commencement	30,160	3 0 0	...	9,04,800	...	...	...	...	...	...	...	...	...	...	...
23 Do. at Fairhead	12,185	2 1 1	...	2,58,083	...	...	...	...	...	...	...	...	...	...	...
24 Concrete in mass for filling	77,823	9 8 3	...	7,36,501	...	...	...	...	...	...	...	...	...	...	...
25 Do. at Fairhead	988	4 8 3	...	4,10,204	...	...	...	...	...	...	...	...	...	...	...
26 Do. in filling between Caisson Block	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27 Do. in filling between Caisson Block	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28 Do. in filling between Caisson Block	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29 Depositing do.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total for South Pier	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34 Preparing mass for and setting cylindrical Pierhead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35 Rubble Stone Revetment	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36 Railway Lines	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
37 Tools and Plant	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38 Cutting timber	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39 Establishment	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40 Materials at site (concrete blocks in yards) ... C. yds.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41 Advances to work-people	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of Estimate and value of work done	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deduct Probable recoveries due to sales of Tools and Plant	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total of revised Estimate sanctioned in Secretary of State Despatch, plus expenditure before 31st December 1891	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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 30th June 1892	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

F. J. WILSON,
Ag. Engineer, Harbour Trust Board.

MADRAS,
13th August 1892.

2011-12
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MARINE DEPARTMENT

FROM

THE CHAIRMAN,

HARBOUR TRUST BOARD,

MADRAS.

TO

THE CHIEF SECRETARY TO GOVERNMENT,

Marine Department

DATED

16th September 1892

RECEIVED

ENCLOSURES

Five tracings

No. 2299

SUBJECT.

Submitting quarterly
report as directed by
the Right Honourable
the Secretary of State
Despatch N. 1 Public Works
dated 7th January 1892

No. 4 Waf 12-9-92
1536
1536 Waf 12-7-92
9 Waf 8-6-92
1705
1705-6 Waf 8-6-92
430 Waf 12-2-92
1881 R af 15-8-91
1880 R af 15-8-91
23-24 R af 7-6-91

3011-12
24

MARINE DEPARTMENT

The Chief Secretary to Government

SUBJECT.

Submitting quarterly report as directed by the Right Honourable Secretary of State for India in Council to the Public Works Department of the Government of India.

No. 3011 W of 2 Nov 1892

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

From the Chairman, Harbour Trust Board, Madras (H.C. No. 2299 of 16. 11. 92)

And in the Marine Dept. (" " 1548 of 29. 11. 92)

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

2. The question of Railway communication referred to in the concluding paragraphs of the Chairman's report is under the consideration of Govt and separate orders will be passed thereon.

I would say nothing about it here.

Do Oct

Chairman, H. T. Board
Consq. Engr. for Railways
Marine Department.

H.C.

HE no 3012 Wd/2nd Nov 1892)

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

9/11/92
Wd

To

The Right Honorable the
Secretary of State
for India.

My Lords,

In continuation of
our Despatch no ¹¹/_{2536 W} of
12 Sept 1892 we have the
honour to forward herewith
the progress report of the
Madras Harbour works
for the quarter ending
30 June 92

The report is accompa-
-nied by the following
plans:-

I Plan showing progress
of works

II Cross sections on
revetment from A
to C on plan.

2014/2
96
III Cross sections on
revetment from Madras
Railway store to D
on plan.

Wd
30.9.92

20.9

2014/2
96
3011 W/13
Wd
3/11/92

CS

C No 9983

Govt. of Madras.

PUBLIC WORKS.

Urgent

6/11/92

2nd Nov

G.O. October 1892 No 3011 C

3012 W

Madras Harbour Works

Progress report of the —
for the quarter ending 30th
June /92, ordered to be
forwarded to the Secy of
State and the Govt.

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Madras Harbour Works

Forwarding the progress
report of the — for the
quarter ending 30th June /92
with a plan.

Madras Harbour Works

Forwarding the progress report
of the — for the quarter
ending 30th June /92 with
plans.