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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P. W. DEPARTMENT

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Not to be folded or roughly handled

Public Works

no 10

India Office, London

24th June 1880

My Lord Duke,

Herewith is forwarded
for your Grace's information
copy of a report which
has been furnished to me
by Mr. Parke, C.E. on the
progress made on the
Madras Harbour works
during the quarter ended
the 31st March 1880.

I have the honor to be,

My Lord Duke,

Your Grace's most obedient
humble servant

W. H. P. J. J.

His Excellency

The Right Honorable

The Governor in Council

Fort St George

(Copy)

Madras Harbour

Report of progress in the quarter ending
31st March 1880.

23 Abingdon Street

22nd May 1880

Sir

I have the honor to submit herewith a plan showing the state of the Harbor works on the 31st March last, and two photographs taken on the 6th April, one from the top of the lighthouse as usual, the other from the top of the North pier looking shorewards.

2. Since the 31st December the North pier had advanced 374 feet, and the South pier 427 feet in the concrete block work. The rubble bases had extended beyond the 500 feet at the North and 450 feet at the South pier respectively.

3. The length built in the two months was greater than in any previous quarter, and it would have been greater still but for a partial suspension of building work in March.

The Under Secretary of State

for India

for want of blocks. This was due to the failure of the local supply of cement. The supply of English Cement was fastened as much as possible to ^{compensate} ~~complete~~ for this, but as the contracts under which the latter were being furnished were entered into with the expectation of 300 tons per month being supplied in India it is not surprising that it was not possible at once to meet this increased demand. Blockading however had been resumed in full force early in April, and by the 30th of that month 9 1/2 feet additional had been built at each pier.

4. The quantity of rubble stone deposited in the North pier was 61,350 tons, and in the South 30,175 tons. The supply of this material was somewhat restricted by the agricultural demand for labour, but this will be only a temporary difficulty, and the rubble sacs are well in advance of the blockwork.

5. In reporting on the Quarter ending 30th September last I called attention to the fact that the North pier was then entering upon the most critical part of its progress, and that every exceptionally heavy sea during the next two cyclone seasons would be the severest trial of its stability. The heavy seas of November and December failed to do any damage to the pier works, but another cyclone season is now upon

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us, and it is only right to recognize the fact that seas of sufficient force to damage our working machinery are quite possible, and that it is therefore exposed to some risk. The risk however could only have been avoided by bringing the machinery inshore for the whole season thus involving a certain delay which would in my opinion be more than equivalent for the risk.

The Titan has been exposed for six successive cyclone seasons in each of which there has been some heavy weather without damage, and the present occasion is but a degree more dangerous.

6. With regard to possible damage to the permanent work, it may be well to repeat what I have before stated that the works as designed are calculated to withstand every known action of the sea which is conceivable at present. It would however be presumptuous to say that there may not be unsuspected weak points which a heavier sea than any as yet experienced may discover. The ground for confidence in ultimate success is that such damage is sure to be kept better than any a priori hypothetical considerations the best way of providing against its recurrence.

7. The only contingent work carried on during the quarter were the strengthening of the revetment for protecting the shore north of the Harbour, and the interdigging sewer along the Beach.

of Beach, which latter after being in abeyance by order of the Government for several months was resumed in March.

8. The sand difficulty as far as it affects the progress of the work is now so completely a thing of the past that it requires no further notice. I need only say that repeated soundings where the rubble stone has been recently deposited show no change from the depths of the original bottom, proving that there is an entire absence of either wave or current action in that depth of the changes of the shore line under the influence of the oblique wave action continued.

The successive annual accretions to the south of the Harbour are shown by the lines of high water mark at the corresponding dates since 1877.

The relation of the rate of this accretion to the whole extent of the Harbour is clearly shown by these lines. It is obvious that though there may be inequalities from year to year the width of the annual accretions must on the whole

be uniform, and that the advance of the shore line to the rear face of the Harbour is an event to be anticipated only in a remote future.

10. The last year's accretion is rather greater than seemed probable at the end of the last south west monsoon owing to the erosion in the North east monsoon having been much less than in the previous year. It will be seen that there

has been in the interior of the Harbour an advance of the shore line to the extent of about 50 feet since December. As this is entirely protected from along shore action the advance must be due to some temporary transverse wave action which is probably equally operative outside the Harbour. If allowance were made for this the width of the accretion in 1879-80 would be materially reduced. With these and some other elements of uncertainty I think any deduction as to the future rate of advance from the present apparent rate would be little more reliable than the rough estimates I have formerly given. Every year however these elements of uncertainty will diminish in proportion to the rate of annual accumulation and a nearer approximation to the date at which a further advance of the South Pier seaward will become necessary may be made.

11. With respect to the changes of the coast line North of the Harbour. For the first half mile the line of shore is maintained by a rough stone revetment which requires additions from time to time. Beyond that the tendency is for the shore to waste, as a balance to the accumulation to the southward, but the changes caused by this annual waste are as yet less marked than those due to the action of the occasional seas caused by cyclonic disturbances in the neighbourhood.

For three quarters of a mile beyond the northern end of the revetment which is the limit of the recent surveys the sandy shore is from 100 to 200 feet further inland than it was in March 1877 but in May 1879 a width of 100 feet had been cut away by a cyclonic sea and then the south west monsoon waves by their alongshore action cut away a further 50 feet. The cyclone of November which demolished a portion of the stone revetment had little effect upon the sandy beach to the northward, and the following North east Monsoon restored about as much as, or even rather more than, had been cut away in the previous south west Monsoon.

12. From the above it will be seen that the action upon this beach is of a very complicated character, and that beyond the point within which immediate protection is imperative it is desirable to collect more facts before going to any considerable expense in works of protection.

13. It is right to mention that the rubble foreshore which protects the north Surf Park has wasted considerably during the four years that it has been exposed to the action of the sea. There is no immediate occasion for any replenishment of it as there is still an ample width between the shore line and the actual bank, but it will have to be watched, and if necessary added to at some future time.

14. The following is a statement of the cost of the works

works up to 31st March compared with the estimate for the corresponding portion. The total amount consists as before of the sums actually carried into account on the Ordinary Public Works Department system, with the addition of Rs 1,03,193 for work completed to that date but not carried to account.

	Total Estimate	Estimate of portion completed	Expenditure to 31 March	Excess	Surplus
Plant and Preliminaries	8,00,000	8,00,000	9,07,887	1,07,887	
North Pier		14,08,116	12,75,727		32,389
Rubble base in advance	20,56,880		79,021	79,021	
South Pier		10,77,102	9,33,800		1,43,302
Rubble base in advance	20,56,880				
Blocks in Stock		59,538	59,538		
Materials on hand	will be transferred to from the works proceed	1,12,220	1,00,869		11,351
		1,54,412	1,54,412		
Total	40,13,760	36,70,446	36,11,212		
Contingencies to 100 cents	4,91,372	3,69,001	1,24,240		2,44,797
Establishment 5 per cent	2,25,688	1,84,320	2,02,331	57,811	
	56,50,720	42,43,767	39,77,783	1,66,664	2,44,797

Note.

In the cases A, B, C, the same account is given for both estimate and expenditure as the exact amount cannot be ascertained in either case.

15. The items in the above statement are arranged rather differently from those given in the returns made to the Accountant General, and it may be convenient that I should again explain what the differences are. It will be remembered that the two Steam Tugger barges are not employed for some time after they arrived at Madras, and during this time the cost of maintaining them amounted to Rupees 41,000. This sum was originally charged to the Rubble bases of the piers and in the final adjustment of the accounts this may be fair. But it is clear that no comparison between the estimate and actual cost of the rubble base during progress can be of any value if the latter is weighted from the very beginning with such a charge for which there is nothing to show. For the purpose of maintaining a fair comparison I therefore transferred this amount to "plant and preliminaries".

16. On the other hand I have absolutely placed the later head. But the Examiner of Public Works Accounts does not recognize this and under his orders certain small charges are being constantly added to one or other of the sub-heads into which it is divided. These, now amounting to a total of Rupees 6,000 I have divided among the several heads of the works to which they are fairly chargeable.

17. I would beg to call attention to one or two deductions from a comparison of the above statement

with

with the one in similar form which I submitted in my report of progress to 30th September 1879.

It appears that during the six months Rupees 5,90,516 were expended on the pier works proper, exclusive of contingencies and establishment. The estimate for the same amount of work was Rupees 5,89,778 being a difference of only 738 Rupees. The appropriate saving on the piers now stands at Rupees 1,36,750 which I have before explained is mainly due to Rupees 2,00,000 saved in the early stages of the work.

18. The contingencies - for which 10 per cent is allowed, have as yet amounted to only 3 1/3 per cent on the estimate of the proportion of work completed (three fourths of the whole) and I am so far unable to see any probability of this percentage being exceeded in the remaining one fourth.

19. The charge for establishment shows considerable recovery. Up to 30th April 1879 it was 7.6 per cent, to the 30th September 7.1 per cent, and is now 6.6 per cent. For the six months the charge for establishments was 3.75 per cent of the expenditure.

I have for

(3) W. Parker

106
P.W.D. 3

23 JUL 80

N. 2

Copy Report by Mr. Parkes,
dated 22nd May 1900.

Referred to in Public Works Letter
Number, No. 10, dated 24th June 1900

Fr. 1218 W. 24.4.79.
927 W. 12.4.80

P.W.D. No 2 x
23 JUL 80

No 9

Public Works
24 June 1880

The
Letter to Govt. George
No 10

Received 21 July 80

Ord. 24-7-80. Ord 24-7-80
O 20/7/80

Ch. Secy. to Govt.

Recd 15 July 80

No 1799 W

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 28 July 80
Read the following:—

From the Secy of State
for India } No. 10 of 24 June 80

Recorded.

2. It is assumed
that the transfers re-
ported by Mr. Parkes
in the 15 and 16
paragraphs of his
letter are only intended
for the India Office.
The accounts sub-
mitted to this Govern-
ment must, in ac-
cordance with G.O.
of 24 April 1879,
No. 1218 W, be prepared
on the system ap-
proved by the

Examiner, Mr. Account.

St. No 1800. W

Dated 28 July '80

Copy forwarded to

The Genl. of India

in Cont. of dectd.

No. 927 W. 12th April

1880

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Decried to

India

10-8-80

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Printed
26/7

Supt. Mr. H. W. H. H.

by Mr. A. A. A.

Marine Dept.

10-8-80

Cur. 25-7-80 Rtd 26-7-80

Q. 23/7/80

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Govt. of Madras
PUBLIC WORKS.

To

From

For

By

By

G.O. 28 July 1879 No. 1799 W
1879 W

Nos. 102-104

Forwarding the
Despatch of the Secretary
to the
Progress Report
of the Public Works
for the quarter
31st March 1880

Progress Report
Madras Harbour
Works.

Forwarded by Mr. P. S. S. S.

Despatch from
the Secretary to the
Govt. Mr. P. S. S. S.
for the quarter
ending 31st March 1880
Recorded in the
Diary.