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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	<u>3106</u>	Press.
B.P. No.		Mis.
Dated	<u>14-12-1881</u>	<u>197</u>

24
Not to be folded or roughly handled

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

14th December 1881, No. 3106 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 59. From F. N. THOROWGOOD, Esq., M. Inst. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 5th December 1881, No. 71 W.

I HAVE the honor to submit a report of what has been done during the past month of November on these works, although the storm of the 12th has resulted in such damage as to place a progress report out of the question.

2. WEATHER.—The sea since the 20th has been so rough that all surveying operations have been stopped, thereby delaying the submission of a final report, with plans, of the damaged piers.

3. NORTH PIER.—Previous to the storm of November 12th there had been 255 tons of granite stone tipped at the end of the rubble base to fill up hollow and low places. And since 12th there have been 655 tons of stone deposited at the commencement of the blockwork to repair the breach caused by the sea of 12th. A few repairs have been carried out on the railway lines, enough to allow engines and trucks working on the beach improvement work.

4. SOUTH PIER.—There were five blocks set at the end of the south pier on the 1st November, after which the Titan was withdrawn and the end blocks were secured together by iron tie-rods. There were also 591 tons of granite stone tipped from boats for levelling up the base. The railway lines damaged by the sea have been in some degree repaired.

5. PROTECTIVE WORKS TO THE NORTH.—The sea encroached very badly to the north of the Harbour on the 12th and 13th, and has made such wholesale ruin and devastation that it will be a very heavy undertaking to restore the line of coast. Since the 14th the sand has in a great measure accumulated again, but the damage done to buildings is still very serious. I send herewith a large scale plan (100 feet to one inch) of the whole coast line, showing the high water mark at the end of October, on the 14th November, and at the end of November. The encroachment on the 12th to 14th was so very serious that it seems to me that if Mr. Coleman's house, and the Cotton Press compound adjoining, are to be preserved, we must throw down another and more massive revetment than before, and to do this will certainly require as much stone again as has been already used.

6. BEACH IMPROVEMENT WORK.—I have gone on with the levelling up of the foreshore on the beach, and with the laterite covering to the same, for which purpose 2,743 tons of laterite were used in November. The rubble-stone commencement of the two jetties was scattered about and dispersed very badly on the night of the 12th, to such an extent indeed that I think it will not be advisable to repeat this feature of the design until the beach is more protected from surf.

7. GENERAL.—It is hardly necessary to state that the storm of November 12th has entirely changed the aspect of affairs as regards the completion of the Harbour and moorings, as it has not only destroyed much of the piers but has deprived me of most necessary appliances. I am reducing the number of hands as much as possible, but retaining the divers at present to recover gear from the *Hobart* and *Salisbury* and to resume investigations of the bottom when the weather will permit. With the assistance of the raft and gear belonging to the Marine Department we have already recovered much of the screwing machinery from the sunken vessels.

8. On the 7th November His Excellency the Governor visited the works, accompanied by the Chief Engineer, Public Works Department, and again on the 15th His Excellency proceeded along the damaged piers as far as was possible.

No. 60.

ORDER THEREON, 14th December 1881, No. 3106 W.

RECORDED with the observation that the Superintendent of the Harbour Works should lose no time in submitting an estimate (including all past outlay) for a longitudinal revetment extending along the foreshore, north of the Harbour, to such distance as the erosions made by the storm of the 12th November prove to be necessary; the estimate to be accompanied by a statement of the means at disposal, and the time likely to be occupied in the execution of the work.

(True Extract.)

Lieut.-Col., R.E.,
Ag. Under Secy. to Govt., P.W.D.

To the Superintendent of the Madras Harbour Works.
" Engineer-in-Chief, Madras Harbour Works.
" Marine Department.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS
CIVIL WORKS.

Subt. of (1881) Madras.
PUBLIC WORKS.

THE SUPERINTENDENT OF THE
MADRAS HARBOUR WORKS.

Dated December, 1881.

Issued

Recd.

Recd.

G. O., 13th December 1881, No. 3105 W.

DECEMBER.
Nos. 59-60.

Madras Harbour Works — Monthly Report
on the state of the — for November 1881,
recorded with certain observations.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

15th November 1881, No. 2854 W.

Buildings and Roads.
Civil Works.

No. 77. Read the following paper:—

Report by the Secretary and Chief Engineer, Public Works Department, regarding the effects of the Cyclone of the 12th instant on the Madras Harbour Works.

From the state of the weather throughout the night of the 11th instant it was concluded that a cyclone was blowing out in the Bay, with centre somewhat north of Madras, and early on the 12th instant heavy seas broke over the works, chiefly along the north and east of the harbour.

2. As the day advanced the height of the seas sensibly increased, and about 11 A.M. the Titan cranes which had been withdrawn, and apparently very safely secured to the strongest portions of the pier heads, were one after the other seen to yield and disappear.

3. The block work of the two seaward arms almost immediately afterwards gave signs of subsidence, the straight portions however running out perpendicularly from the shore remaining intact. Though perhaps a little shaken at their extreme ends, the latter have to all appearances weathered the storm quite satisfactorily.

4. Towards evening it was clear that both the seaward arms had sustained serious injury, and on the morning of the 13th instant, when the weather and sea had somewhat calmed down, those portions of the work were only marked by a broken and serrated line of blocks, nearly all of which had evidently been much tilted and displaced. At several places there were also intervals and gaps indicating the probable occurrence of more serious injury.

5. The sea having sufficiently calmed down on the morning of the 14th instant, to allow of soundings being made from a boat close to the remains of the work, the Chief Engineer and the Master Attendant examined it, and found that the injury was not as at first had been hoped confined to the mere removal of the upper tier of concrete blocks, but that very general subsidence had occurred, from which it is to be feared that the rubble base had to some extent been scoured and lowered by the action of the sea.

6. The concrete blocks, excepting in a few places where the movement had been seaward, were found to have a cant inwards towards the harbour, indicating to all appearances that the swirl and scour round the pier heads and along the back of the arms had been even more severe than on the outer faces.

7. At one place immediately north-east of the turn in the south pier all four tiers of blocks appeared to have been cleared away to a depth of about 18 feet below mean sea level, and a complete breach had here been made for 90 or 100 feet. This was found to be the worst point, but there were other short portions where two or three tiers of blocks had been displaced.

8. The extreme ends where the Titan cranes had stood and where the work was broadest and strongest had, comparatively speaking, sustained less damage, though even here great depression and displacement of the block work was visible.

9. No trace of either of the Titan cranes was found, but it was satisfactorily shown that the dispersion of the materials had hardly affected the mouth of the harbour, which was found to be perfectly clear for a width of at least 400 feet. Three steamers almost immediately afterwards entered the harbour without any trouble.

10. Fortunately a series of accurate sections of the work including the rubble base had been completed by the harbour staff immediately before the occurrence of the storm, so that on a return of calm weather admitting of a thorough examination by divers, the precise condition of the rubble base, and the amount of injury it has sustained can be accurately gauged.

11. Inside the harbour, so long as the outer arms remained intact, the disturbance of the water, though no doubt considerable, was very much less than outside, and the protection thus afforded by the works was shown in a very marked manner by the increased height of the seas which invaded the harbour on these giving way.

12. Five of the buoys attached to the new-screw pile moorings gave way and came ashore at the height of the storm (about midnight of the 12th instant).

13. This accident appears to have been directly attributable to the increased disturbance within the harbour at this period, and also, it is thought, to the small amount of play which had been allowed to the chains attaching the buoys to the screw pile moorings.

14. The invasion of the sea led also to a lamentable accident in the loss of the two steam hopper barges (the *Salisbury* and *Hobart*) on the evening of the 12th instant.

15. By an accident to the stern mooring buoy, these vessels, which had been united with the object of carrying and working the machinery for screwing down the piles, were swung violently round so as to catch the swell broadside on, and breaking up sank at once.

16. Most unfortunately the European Captain (Berlie) and 13 of the native crew perished. Mr. Botteler, the Mechanical Engineer, who had lately come out to direct the screwing operations and three of the native, escaped by swimming. Three more were also picked off the rigging on the morning of the 13th instant.

17. No fear had been entertained for the safety of the vessels as they appeared to be riding out the storm easily, owing no doubt to the protection afforded by the works.

18. To the north of the Harbour Works there was as might have been expected much displacement of the materials of the rough stone revetment extending for about $1\frac{1}{2}$ miles, but on the whole the work has stood the attack well, and no serious encroachment occurred within the revetted lines. There can however be little question that much property would have been injured in this direction had it not been for the energetic and intelligent manner in which Mr. Thorowgood had acted in this as in all other matters connected with his position as Superintendent of the Harbour Works.

19. Appended are two photographs of the harbour taken after the storm, which however rough printed will with the appended references serve to explain graphically the present position of matters.

(Signed) R. H. SANKEY, Colonel, R.E.,
Chief Engineer and Secy. to Govt., P.W.D.

No. 78. ORDER THEREON, 15th November 1881, No. 2854 W.

ORDERED that the following Despatch be sent to the Secretary of State for India.
(True Extract.)

Lieut.-Col., R.E.,
Ag. Under Secy. to Govt., P.W.D.

To the Superintendent of Madras Harbour Works.
" Marine Department.

Encl. E. C. Shunker.
Spare Copies

BUILDINGS AND ROADS
CIVIL WORKS.

Govt. of (1881) Madras
PUBLIC WORKS.

To

THE SUPERINTENDENT, MADRAS
HARBOUR WORKS.
&c. &c. &c.

Dated November, 1881.

Issued

Recd.

G. O., 15th November 1881, No. 2854

NOVEMBER.

Nos. 77-78.

Madras Harbour Works. - Report by the
Chief Engineer and Secretary to Govern-
ment, Public Works Department, on the
damages to the - during the cyclone of
the 12th November.

3106
5

people to tile all
their Chauties kept
before the whole of
time, disappeared
in the sea!

Being Equattus I
believe they have
proposed no claims
but a small sum
all round might
fairly be given and
some arrangements made
in the future

The matter of com-
-pensations to cooler
owners, who have a
title to show will
soon I hope be before
Government on a refer-
-ence which lately
came up - Government
will therefore at an
early date have
an opportunity of
dealing with the
matter in proper
form -

Perhaps under
the circumstances
the draft order
opposite will
sufficiently dispose
of the present refer-
ence -

The papers should
be doubtless at
once communicated
to Mr. Parker on
arrival - but had
better probably not
be forwarded to
him till the
receipt of the
estimate was
called for?

Att

10/12/87

W.P.

3106
6

a street of second
class houses the des-
truction of which would
occasion not only great
distress but expense
then again the work
went on partial
as it was carried
out by Mr. Thoroughgood
has been of the greatest
value, though his
railway has been torn
up, and the loose
boulders thrown down
one was for the most
part buried in the
sand. The latter has
it is true again accu-
mulated and formed
a fresh Coast line in
advance, but there
can be no question
that all this would
disappear in a
single storm, and
the destruction be
carried still further
inland.

feel that can be
trapped for now so
that there may be
no repetition of
this action till a
sufficiently strong
movement be
carried right along
the whole shore

What the expense
or time required
for such an oper-
ation may be cannot
at once be stated
but Mr. Woodward
has promised to
let us have a rough
estimate as soon
as possible, but
there is and is
disguising the fact
that we are in presence
of a difficulty which
which it will cost
a good deal of
time and money
to grapple with
successfully

3106
7

L. O. No 561. W. A. I. Merrill

It will be remembered
that in dealing with
this question during
the early part of the
present year I felt
myself compelled to
take a different view
from Mr. Parker (see
the papers marginally
noted) and I drew
attention to the necessity
for work being pushed
on vigorously instead
of merely buying up
the narrow belt of
foreshore as suggested
by Mr. Parker and
allowing the sea to
have its way

The opinion which
I must now submit
in prominent considera-
-tion is that no
time whatever should
now be lost in estab-

With a curious sort
of irony the Uni-
-versity had served
notice on these thoughtless

of the late storm on
the shore was such
that I considered it
desirable to examine
the whole in company
with Mr. Snowgood
before submitting the
report to Government.

In examination
I made yesterday
morning quite con-
firms the serious
nature of the inroad
made all along the
shore for a length
of not less than two
miles from the foot
of the north pier.

My last report *
made after my inspection
of the works in the
morning of the 12th
ultimo does not I
think convey at all
a correct impression
of the extent of the
mischiefs which the
RAILWAY occurred on

* L.S. No 2054. 7. 11/12

3150
9

the afternoon of that
day and throughout
the succeeding night
the sea cut back
almost up to the cur-
bowed wall of the
Bridges house and made
still further inroads
on the premises immediately
beyond completely under-
mining the angle of the
southern portion of
the Cotton Jones Cos
buildings.

Fortunately the rough
stone revetment thrown
up after the storm of Nov. 1879
all along in advance
from this point, past
Mr. Coleman's house
and round the Police
Thamrah, though a
good deal knocked
about & flattened
out at the toe has done
excellent service -
In fact had it not
been for the work

Encountered these by
the thorough
probably the whole
of the buildings here
would have been
washed away -
One has only to look
at the great inden-
tation which the survey
shows immediately
north of the Police
Thannah to see at
once the serious nature
of the erosion

From this point north-
ward St. Peter's Church
East road has been cut
right across, and
though only as yet
such comparatively
valueless properties,
as Mrs. Radcliff's pre-
mises (already com-
promised for) and the
old Saw mills, have
succumbed we are
now within mea-
surable distance of

FROM

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO

Colonel R. H. Sunkay, C. B. &c
Secretary to Government, M.S.
Buildings & Roads
Fort Saint George
MADRAS, 5th December 1881.

Sir,

I have the honor to submit a report
of what has been done during the past
month of November on these works, al-
though the storm of the 12th has resulted
in such damage as to place a Progress
Report out of the question. -

Weather

2. The sea since the 20th has been
so rough that all surveying operations
have been stopped thereby delaying
the submission of a final report with
plans of the damaged piers. -

North Pier

3. Previous to the storm of Novem-
ber 12th there had been 255 tons of
granite stone tipped at the end of the
rubble base to fill up hollow and
low

Cow places. And since 12th there have been 655 tons of stone deposited at the commencement of the blockwork, to repair the breach caused by the sea of 12th. A few repairs have been carried out on the railway lines, enough to allow engines and trucks working on the Beach Improvement work.

4. There were 5 blocks set at the end of the South Pier on the 1st November, after which the Titan was withdrawn and the end blocks were secured together by iron tie rods. There were also 59 tons of granite stone tipped from boats for levelling up the base. The railway lines damaged by the sea have been in some degree repaired.

5. The sea encroached very badly to the North of the Harbour on the 12th and 13th and has made such wholesale ruin and devastation that it will

South Pier

Protective works to the North

be

31/10/11 122
be a very heavy undertaking to restore the line of coast. Since the 11th the sand has in a great measure accumulated again, but the damage done to buildings is still very serious. I send herewith a large scale plan (100 feet to 1 inch) of the whole coast line showing the High Water Mark at the end of October, on the 11th November and at the end of November. The encroachment on the 12th to 14th was so very serious that it seems to me that if Mr. Coleman's house, and the cotton press compound adjoining are to be preserved we must throw down another and more massive revetment than before and to do this will certainly require as much stone again as has been already used.

Beach Improvement work

I have gone on with the levelling up of the foreshore on the beach, and with the laterite covering to the same for which purpose 2745 tons of laterite were used in November. The rubble stone commencement of the two jetties was scattered about

about and dispersed very badly on the night of the 12th to such an extent indeed that I think it will not be advisable to repeat this feature of the design until the beach is more protected from surf. -

7. It is hardly necessary to state that General the storm of November 12th has entirely changed the aspect of affairs as regards the completion of the Harbour and Mooring as it has not only destroyed much of the piers but has deprived me of most necessary appliances. I am reducing the number of hands as much as possible but retaining the divers at present to recover gear from the Hobart and Salisbury and to resume investigations of the bottom when the weather will permit. With the assistance of the raft and gear belonging to the Marine Department we have already recovered much of the screwing machinery from the sunken vessels. -

8. On the 7th November His Excellency
the

3106
12/13
The Governor visited the works, accompanied by the Chief Engineer, Public Works Department, and again on the 16th His Excellency proceeded along the damaged piers as far as was possible.

I have the honor to be

Sir
Your most obedient servant

J. H. M. S. G. M. at Secy. G.
Superintendent
Madras Harbour Works

GO. 361 May 1.3.81. Oyl.
" 2857, May 15.11.81.

P. W. C. No. 713-4
Buildings & Roads

From
The Superintendent
Madras Harbour Works

No. 711 V
Dated 5th December 1887

No. of enclosures 1

Submits the annual monthly
report on the state of the
works for November 1887.

Circ 10. 12.87 R. 74.12

No. 3106 of 14th Decr 81
D. order

Recorded with the
observation that the
Superintendent of
the Harbour Works
should lose no time
in submitting an
estimate (including
all past outlay) for
a longitudinal re-
-vetment extending
along the foreshore
north of the Harbour
to such distance
as the erosions made
by the storm of the
12th November prove
to be necessary; the
estimate to be accom-
-panied by a state-
-ment of the means
at disposal, and
the time likely to
be occupied in

to the execution of
the work

Att

10/12/81

Supt. H. H. W. A. S.
En. C. H. H. W. A. S.
Marine Dept. 20/1/81

7154.

Govt. of (1881) Madras.
PUBLIC WORKS.

To.

Dated

15/12/

Issued

Recd.

Encl.

G.O. 1172 P. 1881. No. 21066.

Nos. 59560.

M A works.
Monthly report
on the state of the
- for Nov 1881
Accompanied with
certain observations.

10/12/81

Subd. in Receipt Report