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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	1976 (W)	Press.
B.P. - No.		Mis.
Dated	27.4.1878.	497.

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Not to be folded or roughly handled.

1976
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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

27th April 1878, No. 1,976 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 284. From Colonel P. O'CONNELL, R.E., Superintending Engineer, Chingleput, to the Chief Engineer, Public Works Department, dated St. Thomas Mount, 27th March 1878, No. 1,284.

In my letter, No. 1,141, dated 19th instant, forwarding copies of correspondence respecting the Ennore bar, I promised to furnish a report on the experiment of running out a groyne to the south of the bar, in order, if possible, to stop the sand which at this time of the year is being carried up the Coromandal Coast from south to north, and thus arrest the process of silting which was gradually closing the bar.

2. On my arrival I directed the Canal Superintendent to take a section of the bar channel daily at low tide, and to compute the area of its cross section or waterway. From the times at which he took the sections he could scarcely have done so every day exactly at low tide, though he believes himself to have done so, and the results are still useful. Some of the variations from the hour at which it would have been low tide in a smooth sea may, perhaps, be partly accounted for by variations in the force of the wind and waves.

3. The following table shows the areas of the waterway of the bar channel at or about low tide:—

Date.	Area of waterway second low tide of the day.	Daily difference in area of waterway.	Date.	Area of waterway second low tide of the day.	Daily difference in area of waterway.
	SQ. FT.	SQ. FT.		SQ. FT.	SQ. FT.
March 7th ...	273.92	...	March 18th ...	371.00	+ 51.25
8th ...	296.70	+ 22.78	19th ...	463.00	+ 97.00
9th ...	246.1	— 50.60	20th ...	479.22	+ 11.22
10th ...	207.0	— 39.1	21st ...	449.50	— 29.72
11th ...	202.18	— 4.82	22nd ...	480.70	+ 31.20
12th ...	218.70	+ 16.52			
13th ...	203.15	— 15.55			
14th ...	206.4	+ 3.25			
15th ...	171.6	— 34.8			
16th ...	270.75	+ 99.15			
17th ...	319.95	+ 49.2			

4. On the 16th two excavations were finished, one from the sea, to the backwater between the bar channel and the groyne, and another almost in a line with the first, from the winding channel through which the water flowed in and out, direct to the backwater so as to shorten the distance from bar to backwater along which the water has to flow and re-flow. The effect of these excavations combined with tides approaching the springs—full moon occurring on Monday the 18th instant—was to raise the surface of the backwater, and to enlarge the waterway of the bar channel very considerably. I do not quote the figures as, owing to inexperience on the part of the observer, these do not probably represent accurately the area of the waterway at low tide.

5. The groyne being a slight structure had to be carried on with caution and strengthened from time to time.

Its length was on the 11th...	...	...	...	...	80 feet.
It was lengthened	...	...	...	...	12th to 106 "
Do.	...	...	...	...	14th to 120 "
Do.	...	...	...	...	16th to 175 "
Do.	...	...	...	...	20th to 215 "

6. Six stakes were driven into the sand in a curved line following the beach. The first was placed 50 feet to the south of the groyne, and at the end of every successive 50 feet a stake was driven in up to the sixth stake which was 300 feet south of the groyne.

7. A daily register was kept of the height of the sand. This showed that it rose pretty steadily. The heights on the 11th and 21st were as follow:—

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
	FEET.	FEET.	FEET.	FEET.	FEET.	FEET.
11th	— 1.5	— 2.0	— 1.8	— 1.7	— 1.7	— 1.3
21st	— .8	— 1.0	0	+ 0.5	+ 0.1	+ 0.3
Total rise in ten days in feet and decimals.	.7	1.	1.8	2.2	1.8	1.6

8. The rise would have been greater at stakes Nos. 1 and 2 had not the groyne been partly undermined and the surface sand washed through it during spring tide.

9. On the evening of the 20th I noticed that the tidal current had cut for itself a new channel through the bar proper, that is the sand bank in the sea opposite the mouth of the backwater, and the direction of this channel was due east, i.e., straight cut to sea, instead of turning from east to nearly due south as it did before. This new cut divided the bar or sand bank into two. At low tide the two portions of the sand bank were above water, and the channel between them was 3 feet deep.

10. I have directed Mr. Paul, Assistant Engineer in charge of Range No. 1, to superintend the completion of the groyne to a length of 300 feet and to report the result. There is every reason, I think, to expect that the bar channel will remain open until May next, when it is hoped that heavy rain may deepen it still further and render it independent of artificial aid.

11. The following drawings are forwarded herewith:—

One survey plan.
Nineteen sheets of cross sections.
Two sheets of longitudinal sections.

No. 285. ORDER THEREON, 27th April 1878, No. 1,976 W.

THE result of the action taken by the Superintending Engineer is, the Governor in Council remarks, very promising.

(True Extract.)

(Signed)

E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

(True Copy.)

Major, R.E.,

Under Secy. to Govt., P.W.D.

To the Superintending Engineer, Chingleput.
Ed. C. Howarth.
Spare Copies

1976

2



BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1878) Madras.
PUBLIC WORKS.

To



THE SUPERINTENDING ENGINEER,
CHINGLEPUT.

Dated 27th April.

Issued

Recd.

Encl.

G. O., 27th April 1878, No. 1976 W.

APRIL.

Nos. 284-285.

Temporary Groynes at Ennore.—Noticing with satisfaction the result of the action taken by the Superintending Engineer with reference to the—

No. 1284

Chingleput Superintending Engineer's Office,
Saint Thomas Mount 27 April 1878.

From

THE SUPERINTENDING ENGINEER,

Chingleput.

To

The Chief Engineer
Public Works Department.

Sir,

Enc:

In my letter No. 1141 dated 19th April I have sent forwarding copies of correspondence
1 Survey Plan of Ennore bar I promised
19 sheets of Cross sections
2 sheets of longitudinal sections. & furnish a report on the experiment of running out a groyne to the south of the bar, in order, if possible, to stop the sand, which at this time of the year is being carried up the Cooromandel coast from south to north, and thus arrest the process of silting, which was gradually closing the bar.

2. On my arrival, I directed the Canal Superintendent to take a section of the bar channel daily at low tide, and to compute the area of its cross section or waterway. From the time at which he took the sections, he could scarcely have done so every day exactly at low tide, though he

believes himself to have done so, and the results are still useful. Some of the variations from the hour at which it would have been low tide is a smooth sea may perhaps be partly accounted for by variations in the force of the wind and waves.

3. The following Table shows the areas of the waterway of the bar channel at or about low tide.

Date	Area of waterway at low tide of the day	Daily diff. in surface in area of waterway	Date	Area of waterway at low tide of the day	Daily difference in area of waterway
March 7	square feet 273.92		March 18	square feet 371.00	square feet + 51.25
8	296.70	+ 22.78	19	468.00	+ 97.00
9	246.1	- 50.60	20	479.22	+ 11.22
10	207.0	- 39.1	21	449.50	- 29.72
11	202.18	- 4.82	22	480.70	+ 31.20
12	218.70	+ 16.52			
13	203.15	- 15.55			
14	206.4	+ 3.25			
15	171.6	- 34.8			
16	270.75	+ 99.15			
17	319.95	+ 49.2			

4. On the 16th two excavations were finished, one from the sea to the back water between the bar channel and the grove, and another, almost in a line with the first, from the winding channel through which the water flowed, and out, direct to the backwater.

so as to shorten the distance from bar to backwater along which the ¹⁹⁷⁰ water has to flow and reflow. The effect of these excavations, combined with tides approaching the springs full moon occurring on Monday the 18th instant - was to raise the surface of the backwater, and to enlarge the waterway of the bar channel very considerably. I do not quote the figures as, owing to inexperience on the part of the observer, these do not probably represent accurately the area of the waterway at low tide.

5. The grove, being a slight structure, had to be carried on with caution, and strengthened from time to time.

Its length was on the 11th - 80 feet.

It was lengthened - 12th to 106 -

14th to 120 -

16th to 175 -

20th to 215 feet.

6. Six stakes were driven into the sand in a curved line following the beach. The first was placed 50 feet to the south of the grove, and at the end of every successive 50 feet, a stake was driven in, up to the sixth stake which was 300 feet south of the grove.

7. A daily register was kept of the height of the sand. This showed that it rose pretty steadily. The heights on the 11th and 21st were as follows.

	St 1	St 2	St 3	St 4	St 5	St 6
11 th	-1.5 ft	-2.0	-1.8	-1.7	-1.7	-1.3
21 st	-1.0	-1.0	0	+0.5	+0.1	+0.3
Total rise in 10 days in feet and decimals	.5	1.0	1.8	2.2	1.8	1.6

9. The rise would have been greater at stakes St 1 and St 2 had not the groyne been partly undermined and the surface sand washed through it during spring tide.

10. On the evening of the 20th I noticed that the tidal current had cut for itself a new channel through the bar proper, that is, the sand bank in the sea opposite the mouth of the blackwater, and the direction of this channel was due east i.e. straight out to sea. instead of turning from east to nearly due south as it did before. This new cut divided the bar or sand bank into two. At low tide the

two

two portions of the sand bank were above water, and the channel between them was 3 feet deep. 1970

11. I have directed Mr. Paul Scott Engineer in charge of Range No 1 to superintend the completion of the groyne to a length of 300 feet, and to report the result. There is every reason I think to expect that the bar channel will remain open until May next when it is hoped that heavy rains may deepen it still further and render it independent of artificial aid.

12. The following drawings are forwarded herewith.

1. Survey Plan.
- 19 sheets of cross-sections.
2. - do of longitudinal sections.

I have the honor to be Sir

Your most obedient servant

W. J. Farnell Colonel R.E.
 Lieut Engineer, Chingleput.

From the Sup. Engineer
Chungking Dist.

No. 1284

Dated 27th March 1878
Rec^d

No. of Enc. 22

Constructing temporary
grove at Emore —
Forwards further report
on the — with cross
sections and survey
plan showing the spot.

Mr. A. 1976
16

Letter from the Sup. Eng. Chungking,
No 1284 dated 27th March 1878.

Circulated for
information.

In result of survey
promising.

See for details of
survey of the mouth
in this charge. L. A.

Edmund Caldwell
Secy to Govt. Mr. A.

1878

3^d April 1878

BTR
 alwaker
 1976/10/27
 1976/10/27

The result of the action
 taken by the Superin-
 tending Eng., is, the Governor
 in Council remarks, very
 promising.

[Faint, mostly illegible handwritten text, possibly a list or detailed report.]

Cir. 15-4-78. 17-4-78
 L. S. E. Changle put
 1-4-78

3923



Cobt. of 1878; *Public*
PUBLIC WORKS.

To

J. Q. Chingepul

Date

Issued

1910/9

Recd.

Encl.

G. O. 27 *all* 1878, No. 19 *pm*

Nos.

Temporary Coyne at Innort

Noticing with satisfaction the
result of the action taken by the
Capt. Eng. with reference to the —

S. D. in 1878