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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	3450	Press
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Dated	6-12-1955	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
6th December 1875.*

No. 70. Read the following letter from T. D. HARRIS, Esq., Officiating District Engineer, Malabar, to Major General G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Calicut, 6th November 1875, No. 116:—

In conformity with the Orders of Government, No. 2,126, dated 26th July 1875, I have the honor to submit herewith a survey, plan and sections of Cruz Milagre lagoon

banks and beach with soundings, and a report* submitted to me by the Assistant Engineer, Mr. Grimes. Before submitting these plans and report however, I proceeded to Cochin and carefully inspected the Cruz Milagre land, lagoon, and the beach all round Vypeen, both on the eastern face in the back-water as well as along the beach, and I find Mr. Grimes has by no means overstated the improvement that has taken place; it is clearly defined by the contour line of destruction that was going on during the period the gap was open and the line of reformation which is now visible and well defined in every direction, and which is extending seawards as rapidly as can be expected; the whole of the groynes are buried in the sand of the beach with the exception of that on the Vypeen point, extending seawards on the northern bank of the river, and even here the sand is forming in a well defined slope of 3 to 11 from the seawall or revetment built last year; it is singular how successfully this work acted, not only has the sand formed behind it shorewards to a great extent being pitched in by the waves through the interstices in the stone wall, but it is also forming in front up to the height the waves race. I hardly think this action due to the stone revetment alone; in fact I consider the whole reformation due to the closing of the Cruz Milagre dam, and I am sure the coast line of 1835 is forming seawards in ridges, and that in time they will join on to the main land again if not so far out as the coast line of 1835 at least to that of 1858, and I set down the whole cause of erosion of the land both on the north and south of the Cochin Harbour and the destruction of the "*fiucos terra*," or river banks, to the drainage or escape of water to the sea over the land opposite the Cruz Milagre gap from the back-water, till eventually the whole land disappeared and the gap opened to such an extent as to threaten the destruction of all the Vypeen land between it and the river on the north, and also that of Cochin on the south side; since the gap has been closed the natural profile of the shore, as it existed in 1835, both on the north and south side of river, is being rapidly restored; it will be seen from the report of the Assistant Engineer that all the groynes are buried in sand, and the beach has formed seawards of the groyne A, which was out-flanked last year and had to be extended shorewards I found on my inspection, also buried in sand, only 6 feet of it was in water; these groynes, in my opinion, would have done more harm than good had the gap remained open, and all the reformation of the river banks and beach on the south is due to the closing of the Cruz Milagre gap and nothing else; here the coast line of 1835 is well defined by the breakers showing the work of reformation.

2. The bar too has been pushed further out to sea, and the Assistant Engineer reports 1 foot more water on it; the Master Attendant also tells me this is the case and that for certain there is 8 inches more water on the bar than last year; this has been an extremely mild season and the rainfall is much less than last year; from April to November 1874 the rainfall at Cochin was 140.520 inches, this year during the same period the rainfall registered is only 95.960 inches, showing a difference of 44.560

neches; if the south-west monsoon had been heavier I expect the lagoon would have filled in to a greater extent. I heard not a word of complaint in any case about the beach on either side or about the Vypeen point, the beach is not only being built on, but the people asked permission to plant as well. No more protective works are required, even the drainage channel allotted to by the Assistant Engineer is not urgent and perhaps it need never be done, careful supervision is all that is necessary, and not only here but along the whole coast line to Paliport the coast should be watched, and not a drop of water from the back-water should be allowed to escape seawards till it reaches the Cochin river proper. The river currents also are now more central opposite the gap and along the eastern face of Vypeen to the sea; the only thing I should like to do would be to take a set of soundings from the northern bank of the river seawards to the coast line of 1855 as far north as the end of the Cruz Milagre lagoon, this can be done best about the end of December next, and I shall have it done if you approve; the funds at my disposal for maintenance are sufficient to cover all expenses; a similar set of soundings next year over the same ground, I shall fix the points, will show clearly what has taken place and how the work of reformation goes on, and I believe the history of this work will be well worth record, and I shall then be in a position to place it before you in every detail from beginning to the end.

From J. GRIMES, Esq., Assistant Engineer in charge of No. 4th Palghat Range, to T. D. HARRIS, Esq., Officiating District Engineer, Malabar, dated Palghat, 24th October 1875, No. 180.

With reference to your endorsement No. 179, of 14th August 1875, on G.O., No. 2,126, of 26th July 1875, I have the honor to forward herewith the plan and sections of the Cruz Milagre lagoon, &c. It will be observed that a great improvement has taken place, both in the depths and water-spread of lagoon; and if the monsoon had been heavier I think the improvements would have been more marked. It will be seen that the beach has been pushed into the lagoon, and raised higher by the past monsoon, and from this time forward the beach will begin to extend seawards, and next monsoon this newly formed beach will be torn up by the heavy surf, and a great deal thrown over the crest of beach again into the lagoon, and so the process will no doubt go on until the lagoon is filled with sand.

2. The dam is in perfect order, and there has not been the slightest sinkage. But I think the surplus channel might be made more secure, as the scour sets towards the south bank A B, which is all soft sand; this could be made safe with a clay slope about 3 to 1 from the side bund inwards, and would cost about Rupees 100. This could be done out of the present year's maintenance allotment. A watchman on Rupees 6 a-month is all that will be required hereafter, and the man who is now employed understands what is to be done exactly.

3. If the plan of allowing waves to race over the beach crest is not now thought advisable, this could be effectually stopped by raising a small bund along the crest, similar to the one we made before south of groyne P to Vypeen.

4. I do not think it will be necessary to take any more sections or soundings until after next monsoons.

5. Going towards Cochin the beach extends seawards beyond groyne P 194 feet.
Do. do. do. O 218 do.
Do. do. do. N 278 do.
Do. do. do. M 269 do.
Do. do. do. L 48 do.
and forms a well defined line of coast from Vypeen sea wall to Naraket, where the mud banks commence.

6. The works are all in good order and nothing more seem necessary.
7. I was informed, while at Cochin, that there is 1 foot more water on the bar at low tide than last year, and no doubt there will be an increasing depth next year.
The bar is rather an acute-angled ridge of sand, and if a channel is buoyed out, and the dredge (which is shortly expected) brought to bear on it, it will be much improved, and the increased head of water will scour it out more; this channel will probably fill in during the monsoons a little, and will have to be opened out again every year.
8. The works on the Cochin side of harbour are also in good order, and stands thus with reference to the groynes:—

Groyne F, about half length in water.					
Do. F,	beach extends seawards	93 feet beyond end of groyne.			
Do. E,	do.	do.	137	do.	do.
Do. D,	do.	do.	19	do.	do.
Do. G,	do.	do.	19	do.	do.
Do. B,	do.	do.	19	do.	do.
Do. A, water a few feet inside end of groyne.					

9. The beaches on each side of the harbour are only now commencing to reform after the late monsoon, and about December or January they will have extended much further out and be at their best.

No. 71. ORDER THEREON, 6th December 1875, No. 3,450.

CIVIL WORKS, No. 5.

ORDERED to be recorded, with the renewed expression of the satisfaction of His Excellency the Governor in Council at the success with which the operations of closing the Cruz Milagre gap and guarding against erosion of the coast at Cochin has been attended.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

To the District Engineer, Malabar.

Erd. S. T. Austin.

Spuro Copies

period the gap was open and the tide

N^o 116

Malabar District Engineer's Office
Calicut 6th November 1875

From

The Off^g. District Engineer,
Malabar.

To

The Secretary to Government,
B.M., Madras.

Sir,

In conformity with the orders
of government N^o 2126 dated 26th July 1875,
I have the honor to submit herewith a
survey plan and sections of Cray & Melagre
Lagoon banks and beach with soundings
and a report submitted to me by the
Assistant Engineer Mr. James, before sub-
mitting these plans and report however
I proceeded to Cochin and carefully in-
spected the Cray & Melagre Band, Lagoon
and the beach all round Vypren beach
on the Eastern face in the back-water as
well as along the beach, and I find Mr.
James has by no means over stated the
improvement that has taken place, it is
clearly defined by the contour line of
destruction that was going on during the
period the gap was open and the line of

N^o 150 of 25. Oct.
1875.

of reformation which is now visible
and well defined in every direction,
and which is extending seawards as
rapidly as can be expected, the whole
of the pyroes are buried in the sand
of the beach with the exception of that
on the Typoon point extending seawards
on the Northern Bank of the River and
even here the sand is forming in a
well defined slope of 3 to 1 from the
sea wall or pierment built last year
it is singular how successfully this
work acted not only has the sand formed
behind it shorewards to a great extent
being pitched in by the waves through
the interstices in the stone wall, but it
is also forming in front up to the height
the waves reach. I hardly think this
action due to the stone pierment alone
in fact I consider the whole reformation
due to the closing of the Cruz Milagre
Dam, and I am sure the Coast line of 1835
is forming seawards in ridges and that
in time they will join on to the main
land again if not so far out as the Coast
line of 1835 at least to that of 1858,
and I set down the whole cause of
erosion of the land both on the North
and South of the Cochine harbour
and

and the destruction of the "fances terra"
or River banks to the drainage or escape
of water to the Sea over the land opposite
the Cruz Milagre gap from the backwater
till eventually the whole land disappeared
and the gap opened to such an extent
as to threaten the destruction of all the
Typoon land between it and the River
on the North and also that of Cochine
on the South side since the gap has been
closed the natural profile of the shore
as it existed in 1835 both on the North
and South side of River is being rapidly
restored, it will be seen from the
report of the Assistant Engineer that all
the pyroes are buried in sand and the
beach has formed seawards of the pyroes
A which was outflanked last year
and had to be extended shorewards
I found on my inspection also buried
in sand only six feet of it was in water,
these pyroes in my opinion would
have done more harm than good had
the gap remained open and all the
reformation of the River banks and
beach on the South is due to the closing
of the Cruz Milagre gap and nothing
else, here the Coast line of 1835 is well
defined by the breakers showing the

the work of reformation.

2. The bar too has been pushed further out to sea and the Assistant Engineer reports 8 foot more water on it, the Master Attendant also tells me this is the case and that for certain there is 8 inches more water on the bar than last year this has been an extremely mild season and the rainfall is much less than last year from April to November 1899 the rainfall at Cochon was 140.520 inches, this year during the same period the rainfall registered is only 95.960 inches showing a difference of 44.560 inches, if the South west monsoon had been heavier I expect the Lagoon would have filled in to a greater extent. I heard not a word of complaint in any case about the beach on either side or about the Typhoon point the beach is not only being built on but the people asked permission to plant as well & no more protective works are required even the drainage channel alluded to by the Assistant Engineer is not urgent and perhaps it need never be done

careful

careful supervision is all that is necessary and not only here but along the whole Coast line to Palaport the Coast should be watched and not a drop of water from the back-water should be allowed to escape seawards till it reaches the Cochon River proper - the River currents also are now more central opposite the gap and along the Eastern face of Typhoon to the sea the only thing I should like to do would be to take a set of soundings from the Northern bank of the River seawards to the Coast line of 1885 as far South as the end of the Cozy Milapre Lagoon, this can be done best about the end of December next, and I shall have it done if you approve the funds at my disposal for maintenance are sufficient to cover all expenses, a similar set of soundings next year over the same ground I shall fix the points will show clearly what has taken place and how the work of reformation goes on and I believe the history of this work will be well worth record and I shall then be in a position to place it before you

you in every detail from beginning
to the end!

I have the honor to be
Sir

Your most ob. Servant

J. D. Harris
Opp. Dist. Ct. Galathea.

6815 May 1st 1860
" 17 Aug 5 " - 666-668
" 16 Feb 60 - 283-286
" 16 May - 356-357
" 6 July - 61-62
" 26 Nov 60 - 610-615
" 16 July - 652-654

P. W. 1875 Dept
 No 4157
 The offg. D^r Engineer
 at Alabaz

To,
 The Secretary to
 Government D. P. K.
 at Alabaz

Dated 1 November 1875
 Recd 8th "
 No 116
 Enc 2

Report that he has
 carefully inspected the
 Cruz, Dilague, Pund
 Lagoon and the beach
 all passed at Paktin

With Order

No 3450.

6 Dec 75.

Ordered to be recorded with the

revised copy of the subscription of

the Counciling the Government in Council at the

success with which the operations of clearing

the land by bulwark work and guarding against

the prevalence of the smallpox have been attended.

and 11-12-75

and 12-75

7/187
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PUBLIC WORKS.

G. E. Malabar

7/12

Spec. 3450

Dec. 70 7/1

My friend, I am glad
to hear from
you and to hear
of your success in
closing the gap
which with satisfaction.