

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	263 A.A.	Press
B.P. No.		Mis.
Dated	1 - 2 -	CR 75 - 195

Not to be folded or roughly handled

No. 1. Read the following letter from Major J. BEATTY, R.E., District Engineer, Godavery, to Colonel G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Dowlaishweram, 29th December 1874, No. 3,029 :—

WITH reference to G. O., No. 3,102, of 30th October 1874, I have the honor to report on the measures now required for the improvement of the navigation of the bay of Cocanada and channels of the Cocanada and Coringa rivers, and whether any observations have been made since 1871 of the set of the currents sweeping past the mouth of the eastern channel to the southward of Hope Island.

2. I shall assume that there is no intention of re-opening the question of the possibility of arresting the gradual deterioration of the port of Cocanada, referred to by Colonel Rundall at page 6 of his Report, when he writes—"I believe that if the branches of the Godavery which discharge themselves into the bay had been closed," (as recommended by him in 1859,) "and the river confined to its main outlet, the silting up of the bay would have been stopped," etc., "and the anchorage would have remained where it was at that time."

	RS.
Works to arrest further deterioration of the bay	14,12,843
Do. for amelioration and improvement of the port	16,69,300
Total ...	30,82,143

3. That project was estimated for by Major Stoddard, submitted to Government by Colonel Chambers, R.E., and orders passed in G. O., No. 3,313, of 14th November 1863. Government were then decidedly of opinion that "the situation of Cocanada was unfavorable to the formation or maintenance of a commodious or convenient harbour under any reasonable outlay;" and that the "outlay upon the works proposed for that purpose would be a waste of money."

4. Mr. Robertson, also, observes that "in consequence of the silting up of the bay, it must in time become part of the delta." It seems therefore to be only a question of time when the present anchorage will be abandoned for one higher up the coast, possibly Oopada, which could be reached as easily by canal, and where the anchorage would be at a more convenient distance from the shore, and not affected by Godavery silt.

5. Meantime, as to the works now practicable, at a moderate expense, to assist in the navigation of the Cocanada and Coringa rivers, I consider them to be as follows:—

- I.—The repair of the revetments on the northern side of the Cocanada river and of the northern groyne, which latter work was much damaged by the high tides at the end of October last.—For this an estimate will be submitted as soon as possible.
- II.—The completion of the southern groyne now in progress.—An application for additional funds for this work will be made in the statement of savings and demands.
- III.—The regular dredging of the Cocanada river and of the bar of sand at the end of the groynes.—The harbour plant now available consists of a steamer, the *Fred and May* (laid up for repairs and to have a new boiler

fitted in her), two dredgers, and twelve punts. Six additional punts are wanted, so that there may be one dredge and six punts for the bar, and a dredge and twelve punts for the river. Six punts are sufficient on the bar, as the dredging there is in sand, but the silt dredged in the river is in such a fluid state when deposited in the punts that it has to be allowed time to dry before it can be handled by coolies. At present owing to the inefficient state and insufficient number of punts the dredgers cannot be regularly worked.

IV.—*The dredging of the inner and outer bars on the Coringa river.*—If anything is to be done to keep down the bars on the Coringa river, a similar establishment to that required for the Cocanada river must be provided there also, but with a greater number of punts, say, twelve punts to each dredge.

V.—*The provision of a powerful tug steamer for use in the harbour under the orders of the Master Attendant.*—Mr. Robertson was of opinion that the Master Attendant at Cocanada should have a proper sea-going steam tug, and Colonel Rundall remarked that he believed the *Prince* had been made over to the Master Attendant for employment in the harbour.

This has not been done, and the reason is, as I understand, that Mr. Vanstavern and Major Mead reported that her boilers were very insecurely fixed, and that it would not be possible to prevent the possibility of their rolling in a heavy sea, and causing the destruction of the vessel. I now propose to have the *Prince* put in thorough repair, and the engines wedged in position. She may then be tried in ordinary weather in the bay, and if there be then any doubt about her safe working, an experienced Mechanical Engineer might be sent up to inspect her and advise what further work is needed. The *Prince* is not adapted to the work required of river steamers, but having powerful engines, being of great width across the paddles (43 feet), a free board of 4 feet, and a draught of 3 feet, she would probably be very well adapted to harbour work.

6. When the present harbour plant has been put in serviceable order by the special repairs now required, and six additional dredge punts added to it, dredging may with advantage be carried on for nine or ten months in the year at the bar and in the river at Cocanada. The cost of working would be about Rupees 20,000 annually.

7. If a steamer, two dredgers, and twenty-four punts be given for work on the Coringa river in dredging the two bars, the cost may be taken at about the same as on the Cocanada river.

8. But in that case, with so much plant to be cared for, viz., a tug steamer for ordinary harbour work, two steamers (one for each river) to work with the dredger and punts, four dredgers, and forty-two dredge punts, a Harbour Superintendent would be indispensable. There is no description of work that is so difficult to check, and in which there is so great an opening for fraud and waste of labor as harbour dredging, and the Superintendent should be an intelligent, trustworthy man, with some knowledge of machinery, in order that the plant may be maintained in an efficient state. There is no man in the district fitted for such a

post, and some competent person must be induced to come forward by the offer of a suitable salary.

9. With reference to the set of experiments with floats, suggested at page 75 of Mr. Robertson's Report, I have the honor to state that nothing has yet been done. I have consulted with the Master Attendant about it, and he states that the cost of carrying out a series of experiments with floats beyond the surf off Hope Island, during the four months, February to May inclusive, would be about 400 to 500 Rupees. This would include the hire of a dhony to be anchored at the place, and the pay of an Assistant to the Lighthouse Superintendent, through whom Captain Castor proposes to have the experiments carried out. These experiments can evidently be best made through the agency of the Marine Department, with the aid of such temporary establishments as they may require. And the months of February to May are the best for the work, as during the monsoon season the great volume of water discharged from the river completely destroys all littoral current off its mouth, and from October to December the set of what current there is must be from the north.

Proceedings of the Madras Government, Public Works Department,
1st February 1875.

Statement showing the Expenditure on Harbour Steamer and Dredge and the charges on Government for their working and maintenance during five half-years prepared to obtain an average rate per cubic yard of silt removed.

Name of Steamer.	ACTUAL EXPENSES ON WORKING DAYS.						EXPENSES ON IDLE DAYS.						Total of columns 8 and 13 being the total charge on Govern- ment.	Total work executed.	Average cost per cubic yard.
	Wages.	Fuel.	Stores of all kinds.	Total of wages, fuel, and stores.	No. of days worked.	Daily charge for working.	Wages.	Repairs.	Total of Wages and Repairs.	No. of days lying idle.	Daily charges on idle days.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Dredge ...	Rs. A. P. 1,726 1 11 1,329 6 7 418 12 5 437 5 4 910 8 7	Rs. A. P. 1,118 12 1 702 0 0 379 11 11 546 0 0 478 10 0	Rs. A. P. 484 11 8 319 11 4 72 15 6 64 13 3 54 15 5	Rs. A. P. 3,329 9 8 2,350 1 11 471 7 10 1,043 1 7 1,444 3 0	144 132 43 49 81	Rs. A. P.	Rs. A. P. 477 13 7 828 0 0 389 6 0 413 4 2 520 14 1	Rs. A. P. 673 5 7 2,680 11 5 117 4 3 99 13 8 1,567 8 4	Rs. A. P. 1,151 3 3 3,503 11 5 503 10 3 518 1 10 2,088 6 5	40 49 140 134 101	Rs. A. P.	Rs. A. P.	42,647 29,670 11,200 12,320 29,740		
	Total ...														
	Steamer ...														
	Total of both ...														
	...														

D. W. LAISHWARAM,
24th November 1874.

Cooly labor for emptying punts omitted.

(Signed) R. R. E. BROCKMAN, Captain, R.E.,
Executive Engineer, Godavery District.
(Signed) J. BEATTY, Major, R.E.,
District Engineer, Godavery.

Proceedings of the Madras Government, Public Works Department,
1st February 1875.

No. 2.

ORDER THEREON, 1st February 1875, No. 263AA.

CIVIL WORKS, No. 1.

THE District Engineer, Godavery, is right in assuming that there is no intention of re-opening the question of dealing with the improvement of the port of Cocanada, at an estimated cost of 30 lakhs of Rupees, which was finally disposed of in G. O., No. 3,313 of 14th November 1863.

2. The repair of the revetments and groyne on the north bank of the Cocanada river, and completion of the southern groyne, are works which should not be neglected. The latter has progressed very slowly, and even the small annual allotments asked for have failed to be fully employed.

3. It does not appear to His Excellency the Governor in Council to be necessary that there should be separate dredges and punts for the Cocanada bar and river, in addition to a similar establishment for Coringa, nor would it appear from Mr. Robertson's Report that more than one dredge for each port was considered by him necessary. It is questionable whether the charge of such operations should remain with the Public Works Department, and Captain Taylor will be requested, in the Marine Department, when on tour in the Northern Ports, to arrange with the District Engineer and Master Attendant for a consultation as to the extent of plant necessary, compared with that available, the best means of supervising the operations, the probable annual cost, and the proper source from which it should be provided; the result of which will be duly reported for the orders of Government. It is remarked that the steamer *Shamrock*, about to be returned from Bengal, will probably be suitable to assist in the work. And if extra supervision be required, Captain Barber now in charge of the Upper Godavery Navigation, the policy of maintaining which appears to be doubtful, may perhaps be better employed on harbour work.

4. Captain Taylor will also be instructed to take the opportunity of inspecting the steamer *Prince*, and reporting whether her transfer to the Marine Department for harbour work is advisable.

5. It is remitted to the Marine Department to consider whether the charge of Rupees 400 to Rupees 500 for the purpose of carrying out the experiments recommended at page 73 of Mr. Robertson's Report should be incurred, under the supervision of the Master Attendant.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Chief Engineer for Irrigation.
.. District Engineer, Godavery.
.. Marine Department.

Exd. S. T. Austin.
Spare Copies



From

The Officer in charge No. 1 or Eastern
Delta Range Godavery District

To

The District Engineer
Godavery District
DOWLAISHWARAY

Date

24

Despatched

Received

24 July 1874

Statement shewing the expenditure on
the Godavery & Nizams
Steamer and the charges on Govern-
ment for their maintenance during the
month of

187

to 5 half years prepared

to obtain an average

rate per foot of the

remains

M. 25/75

5 Half years prepared to obtain an average rate
the month of: 187 .. per C^{ts} of salt
removed.

Statement shewing the expenditure on each Steamer and the charges on Government for their maintenance during the month of

187

per Cy² of silt
removed.

Dow Laisnam
N. 1 or E & R office
24th November 1917

Coaly Labor for emptying
Punts omitted.
L. Beatty - Major
District Engineer, Spokane.

W. W. Burleigh

Captain P. E.
Executive Engineer G. D.



N^o 3029

District Engineer's Office Godavari
Dowlaisheram 29 December 1874

From,

Major J. Beatty R.E.

District Engineer Godavari.

Enclosure To,

Colonel G. W. Walker R.E.

Secretary to Government D.P.W.

Madras

Sir,

With reference to G. O. No. 3102 of 30th October 1874, I have the honor to report, on the measures now required for the improvement of the navigation of the Bay of Cocanada and channels of the Cocanada and Coringa rivers, and whether any observations have been made, since 1871, of the set of the currents sweeping past the mouth of the eastern channel to the southward of Hope Island.

2. I shall assume that there is no intention of reopening the question of the possibility of arresting the gradual deterioration of the port of Cocanada, referred to by Colonel Rindall at page 6 of his report when he writes

"I believe that if the branches of the Godavery which discharge themselves into the Bay had been closed" (as recommended by him in 1859), "and the river confined to its main outlet, the silting up of the Bay would have been stopped" ~~see~~ "and the anchorage would have remained where it was at that time."

3. That project was estimated for by Major Stoddard, submitted to Government by Colonel Chambers R. E., and orders passed in G. O. No. 3313 of 14th November 1863. Government were then decidedly of opinion that "the situation of Cocanada was unfavorable to the formation or maintenance of a commodious or convenient harbour under any reasonable outlay; and that the outlay upon the works proposed for that purpose would be a waste of money."

4. Mr. Robertson, also, observes that "in consequence of the silting up of the bay, it must in time become part of the Delta." It seems therefore to be only a question of time when the present anchorage will be abandoned for one higher up the coast, possibly Copada, which could be reached as easily by canal and

where

Works to arrest further deterioration of the Bay Rupees. 14,1284.3

On for amelioration and improvement of the Port Rupees. 1669,300

Total Rupees - 308214.3

where the anchorage would be at a more convenient distance from the shore, and not affected by Godavery silt.

5. Meantime, as to the works now practicable, at a moderate expense, to assist in the navigation of the Cocanada and Coinga rivers, I consider them to be as follows:-

I. The repair of the revetments on the northern side of the Cocanada river and of the northern groynes, which latter work was much damaged by the high tides at the end of October last. For this estimate will be submitted as soon as possible.

II. The completion of the southern groyne now in progress; an application for additional funds for this work will be made in the statement of savings and demands.

III. The regular dredging of the Cocanada river and of the bar of sand at the end of the groynes. The harbour plant now available consists of a steamer the "Fred and May" (laid up for repairs and to have a new boiler fitted in her), two dredgers and

and 12 punts. Six additional punts are wanted, so that there may be one dredge and six punts for the bar and a dredge and twelve punts for the river. Six punts are sufficient on the bar as the dredging there is in sand; but the silt dredged in the river is in such a fluid state when deposited in the punts that it has to be allowed time to dry before it can be handled by coolies. At present owing to the inefficient state and insufficient number of punts the dredgers cannot be regularly worked.

IV. The dredging of the inner and outer bars on the Coringa rivers. If anything is to be done to keep down the bars on the Coringa river, a similar establishment to that required for the Cocanada river must be provided there also, but with a greater number of punts, say 12 punts to each dredge.

V. The provision of a powerful tug steamer for use in the harbour under the orders of the Master Attendant. Mr. Robertson was of opinion that the Master Attendant at Cocanada

Cocanada should have a proper sea-going steam tug, and Colonel Rundall remarked that he believed the "Prince" had been made over to the Master Attendant for employment in the harbour.

This has not been done and the reason is, as I understand, that Mr. Vanstanern and Major Head reported that her boilers were very insecurely fixed, and that it would not be possible to prevent the possibility of their rolling in a heavy sea, and causing the destruction of the vessel. I now propose to have the "Prince" put in thorough repair, and the Engines wedged in position. She may then be tried in ordinary weather in the Bay, and if there be then any doubt about her safe working, an experienced Mechanical Engineer might be sent up to inspect her and advise what further work is needed. The "Prince" is not adapted to the work required of river steamers, but having powerful engines, being of great width across the paddles (143 feet) a free board of four feet, and a draught of three feet, she would probably be

be very well adapted to harbour work.

6. When the present harbour plant has been put in servicable order by the special repairs now required, and six additional dredge punts added to it, dredging may with advantage be carried on for nine or ten months in the year, at the bar and in the river, at Cocanada. The cost of working would be about Rs 20,000 annually.

7. If a steamer two dredgers and 22 punts be given for work on the Coringa river, in dredging the two bars, the cost may be taken at about the same as on the Cocanada river.

8. But in that case, with so much plant to be cared for, viz, a tug steamer for ordinary harbour work, two steamers (one for each river) to work with the dredger and punts, four dredgers, and 42 dredge punts, a Harbour Superintendent would be indispensable. There is no description of work that is so difficult to check, and in which there is so great an opening for fraud and waste of labor as harbour dredging, and the Superintendent should be an intelligent

175 4
intelligent trustworthy man, with some knowledge of machinery, in order that the plant may be maintained in an efficient state. There is no man in the District fitted for such a post, and some competent person must be induced to come forward by the offer of a suitable salary.

9. With reference to the set of experiments with floats, suggested at page 75 of Mr. Robertson's Report, I have the honor to state that nothing has yet been done. I have consulted with the Master attendant about it, and he states that the cost of carrying out a series of experiments with floats beyond the surf off Hope Island, during the four months February to May inclusive, would be about 400 to 500 Rupees. This would include the hire of a dhow to be anchored at the place, and the pay of an assistant to the Light house Superintendent, through whom Captain Castor proposes to have the experiments carried out. These experiments can evidently be best made through the Agency of the Marine Department, with the aid of such temporary establishments as they may require. And the months of February to May are the best for the work as

as during the monsoon season the great volume
of water discharged from the river completely
destroys all littoral current off its mouth, and
from October to December the set of what current
there is must be from the north.

I have the honor to be,

Sir,

Your Most Obedient Servant

L. Beatty Major R.E.

District Engineer Godavery.

10/10/92

Carl
H. H. H.

P. W. D.

Proceedings of the Madras Government,
Under date the 187 .

Read the following:—

From the District Engineer
Kodavery } (N. E. No. 3029 of 29 Dec 1875)

The District Engineer
Kodavery, is right in
assuming that there
is no intention of resump-
ing the question of
dealing with the im-
provement of the Fort-
of Cocanada at an
estimated cost of 500 lakhs
of Rupees, which was
finally disposed of in
G. O. No. 3313 of 14 Novem-
ber 1863.

2. The repair of the
Revettments and Grays
on

10.5
14/1

8

P. W. D. 1875
N. E. No. 3025
District Engineer
Kodavery

The Secretary to Govt
P. W. D.

checked

Recd 29 Dec 1875
N. E. No. 3029
District Engineer
Kodavery

Referring to G. O. No.
3102 of 10 October 1874
concerning the
supplies & deficit in
the Cocanada and

Cochin, since the
G. O. No. 268 of 11-2-75

615-1-75 Q. 23 of 11/75

on the North bank of the
Cocanada River, and
completion of the Southern
Bygone, are works which
should not be neglected.
The latter has progressed
very slowly, and even
the small annual allot-
ments asked for have
failed to be fully availed of - employed
2. It does not

3. It does not appear to His Excellency the Governor in Council the necessary that there should be separate dredges and permits for the Occochee Bar and River, in addition to a similar Establishment for Coringa. Nor would it appear from Mr. Robertson's Report that more than one dredge for each port

considered by him.
was necessary - It is

questionable whether the

which it should be pro-
vided; the result of
which will be duly
reported for the orders
of Government. It is
remarked that the
Steamer Shamrock about
has returned from Bengal,
will probably be suit-
able to assist in the
work. And if extra
supervision be re-
quired, Captain Barber
now in charge of the
Upper Godavery navi-
gation, the policy of
maintaining which ap-
pears to be doubtful,
may perhaps be better
employed on Harbour
work, the River Steamers
being disposed of to private
individuals.

individuals engaged
in the up-country traffic.
Captain Taylor
will also be instructed
to take the opportunity
of inspecting the Stea-
mer Prince, and
reporting whether her
transfer to the Marine
Department for Harbour
work is advisable.

It is remitted to the
Marine Department
to consider whether the
charge of Rs 400 to
Rs 500 for the purpose
of carrying the experi-
ments recommended
at page 43 of Mr.
Robertson's Report
should be incurred,
under

under the supervision
of the Master Attendant.

Lynn

To the Chief Engr. for Arr.
" D. E. Godavery in
" Marine Dept.
Sept 3/2/75.

PUBLIC WORKS.

Dated

Need

Enol.

G. O., Feb. 1875, No.

No. 1-2

Cocanha Floripa

Rivers - Passing orders
on letter from the S. E. Eng.
Society regarding re-
porting on the measures
now required for the im-
provement of the navigation
of the Bay of Cocanada
& channels of the Cocanada
& Coninga Rivers.