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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	46	Press
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Dated	9. 1. 1874.	195.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
9th January 1874.*

No. 96. Read the following endorsement of the Chief Secretary to Government, dated 23rd December 1873:—

From H. D. E. DALRYMPLE, Esq., Master Attendant, Administrative Department, Madras, to the Honourable W. HUDLESTON, Chief Secretary to Government, Marine Department, dated Madras, 20th December 1873, No. 7,489.

I HAVE the honour to acknowledge receipt of G. O., Marine, No. 306, dated 9th instant, referring Mr. Parkes' able and interesting Report on the formation of a Harbour at Madras for my opinion on the nautical bearings of the question. I shall notice in succession the paragraphs I do not entirely agree with, or explain them according to my lights on the subject.

2. I beg leave to preface my observations by recording that I am very far from being inimical to any scheme for the improvement of the *Port* of Madras, (which designation is strictly speaking a misnomer for an open roadstead,) but I am bound, as the Head of the Marine Department of the Madras Presidency, to warn the Government against being committed to any incomplete scheme, which may eventually involve great additional expense.

3. In paragraph 14 of the Report under review, I quote the following passage: "advance of the beach involves a greater depth of water to be filled." Now, according to our experience, as the beach advances of course so does the line of surf seawards, which stirs up the sand, deposits it, and the water *gradually* shoals. This throws a different light on the passage quoted.

Paragraph 15.—It appears to me that the *onus probandi* lies with the writer of this Report; he should name a harbour constructed on a coast exactly similar to that of Madras (Coromandel), in the track of hurricanes, with a capricious surf, which is often impassable in a dead calm. The capabilities of the port of Port Said and Kurrachee are not possessed by the port of Madras.

4. *Paragraph 16.*—I also submit that the circumstances of the beach at Vizagapatam are entirely different. Sir Arthur Cotton's groynes are on the north side of the entrance of a harbour, in and out of which the tide flows and ebbs; and on the south side a precipitous bluff, called "the Dolphin's nose," rises out of the sea, with no beach at all.

5. *Paragraph 19.*—I agree with Mr. Robertson.

6. *Paragraphs 20, 21.*—I am constrained to differ from the writer regarding a breakwater. We require one to break the force of the sea, not of the wind, that is out of the question. The time of peril to shipping in the Madras roadstead is

* I have seen green seas breaking over the T end of the pier, which is 15 feet above high water level.

when the gale is dead on shore, and the sea at its highest,* rolling right in on the land—*then* a breakwater would be salvation to the shipping.

7. There is no danger from heavy sea from the northward, the trend of the coast is against it;* if a ship is uneasy she can go to sea to the southward, having the advantage, when getting under weigh, of hauling out in comparative smooth water under the lee of the

* Evidence by Colonel Orr, Chief Engineer, etc., etc., before the Breakwater Committee:—
"No sea ever runs parallel to this coast."
Also *vide* Sir Arthur Cotton's opinions on the subject.

48

* Extract from Sir Arthur Cotton's remarks on Madras Harbour.

"In this respect I think there is an advantage in the highest degree in a parallel breakwater permitting vessels both to enter and depart in all winds and in all weathers.

"In this important point no harbour can compare with a simple breakwater parallel with a straight coast, and I suppose Madras with such a work would be the safest harbour in the world; there would not be the slightest danger in approaching or leaving it," etc., etc., etc.

Dickinson's plan (or something like it), *vide* his evidence before the Breakwater Committee, or Sir Arthur Cotton's plan.

9. Paragraphs 27, 28, 29.—The writer in giving us three distinct classes of storms with directions of the wind on each occasion proves that only on the occasions of the gales of the 2nd class

* Under the lee of a breakwater as a ship can veer away cable to any extent, the rise of the sea level is of no consequence.
In a close harbour the rise of the sea is fatal to ships "secured closely to fixed moorings."

10. Paragraph 30.—Here the writer is, I think, under a misapprehension. A cyclone of the 2nd class is as a rule at its height when the wind is dead on shore from the eastward* not at the "tail" of it, which is when it has veered round to the southward, and south westward.

11. Paragraphs 41, 42.—It seems to have been overlooked that to those ships that cannot obtain room in the harbour and are obliged to lie outside* in the event of bad weather, the piers that form the harbour will be additional dangers.

12. Paragraphs 44, 45.—It appears by these paragraphs that the piers proposed are to be so low, only 3½ feet above high water level, that the weather side would be exposed to the sea washing over it, and that the ships will not be "removed

* This in fine weather.

† The safety of a ship in a hurricane is when she has room to veer away cable to any extent. The *Hotspur* being at single anchor and able to veer away cable rode out the hurricane in the Calcutta river in October 1864. In previous hurricane, same month, all those at fixed moorings were either stranded or totally lost.

‡ I have a vivid recollection of the following disaster:—
In May 1833, the H. C. Ship *Duke of York* during a hurricane was blown from the

breakwater;* and if a heavy sea should set in from the southward, a ship has only to put to sea in a similar fashion to the northward. Yet I do not anticipate any such necessities.

8. Paragraph 22.—This is a simple question. You can to a certainty secure sufficient shelter if you have the breakwater long enough, and you can, to supply additional shelter, adopt Captain

could the shipping in the Madras Roads have been in danger, and had we during those gales had a breakwater in all probability not one ship would have been lost.*

from the eastward* not at the "tail" of it, which is when it has veered round to the southward, and south westward.

that cannot obtain room in the harbour and are obliged to lie outside* in the event of bad weather, the piers that form the harbour will be additional dangers.

from the breaking sea."* This being the case, I should say that a ship would run less risk in an open roadstead without a breakwater than if caught in such a trap.† We all know that on this side of India in a violent gale or hurricane the waters rise considerably,‡ and if the sea walls or piers of the harbour be submerged, which they will be to a cer-

Government moorings at "new anchorage," Saugor, thrown on her beam ends, and in that position driven on shore some 6 or 7 miles to the southward of Kedgerree.

When the waters subsided she was found high and dry in the jungle, at least half a mile from the water's edge.

Her tonnage was about 1,400 tons, and with 26 guns mounted, when the disaster occurred.

* Extract of Report of the hurricane by the Master Attendant, Calcutta.

"To give an adequate description of the disastrous effects of the cyclone upon the shipping is impossible.

"The ships were swept away from their moorings and driven or cast ashore in heaps in the opposite side."

14. Paragraph 47.—I do not understand the arguments in this paragraph; in a nautical point of view they are contradictory and unsound.

15. Paragraph 51.—*Vide* my foregoing remarks on paragraph 15.

16. Paragraph 52.—True: if a ship has a fair wind, room enough, and the gale not actually upon her.

17. Paragraph 53.—In regard to the first sentence of this paragraph, I refer the Government to the opinions of Sir A. Cotton, Colonel Orr, and the late Colonel Carpendale, the former Chief Engineers, and our present Chief Engineer and Secretary to Government, Department Public Works, etc., etc., etc. With reference to the last sentence regarding the infallibility of moorings, *vide* paragraph 13 of this letter.

18. Paragraph 54.—I have never understood that there was the slightest engineering difficulty in constructing a close harbour here; it seems to me that nothing could be more simple; but if we are to have one, it must be large enough to contain the whole shipping, and the piers or training walls must be at least 18 feet above high water level, so as to keep the sea, when the waters rise in a hurricane, from breaking over them.

19. The Report under notice does not touch upon the expense of towing ships in and out of the harbour, or the hire of moorings.

20. The silt question I have avoided. Time will show who is right, and posterity will benefit by the question being solved one way or the other.*

* Query.—As the shore at Madras was formerly greatly in advance of the present line of coast, must it not follow that the sea has much power by receding to reclaim as by advancing to abrade?

21. I beg leave to observe that while it has been my duty to draw the attention of Government to the dangers and difficulties bearing on this particular scheme, having before recorded my opinions regarding it, I desire to state that if a close harbour be decided on I wish it every success, and all the assistance which it may be in my power to render towards the successful carrying out of the work shall be heartily given.

22. It is, however, my duty to add that the harbour scheme, as now proposed, is an incomplete one,* and it is beyond doubt that eventually it will be imperative on Government to complete it by raising the piers to a height of 18 feet above high water level, and widening them, as already contemplated by the projector in

* *Vide* paragraphs 44, 45, 46 in the Report.

*Proceedings of the Madras Government, Public Works Department,
9th January 1874.*

paragraph 45 of his Report, which alone will nearly double the cost. Besides this outlay it will be found, in the long run, that taking into consideration the cost

* None of these appliances are required for a breakwater. of moorings, steam-tugs and cranes* required, but not mentioned, which I

† I would rather than this have merely a boat harbour, the outer sea wall being a continuation of the T end of the pier. estimate at three lac of rupees, this harbour of limited extent† will cost quite

as much as a breakwater, while it can never be a harbour of refuge, and cannot afford the same amount of safety and accommodation as the work proposed by the Breakwater Committee in 1869.

23. In conclusion, I beg leave to state that no one can have appreciated more highly the projector's abilities and achievements as an Engineer than I have, yet I may be permitted to point out that, as his stay in Madras was only during a few weeks of most exceptional and unprecedented weather for the season of the year, during which time, strange to say, he had only one opportunity of seeing an average monsoon surf,* I am of opinion that those who have been familiar with the place for a long series of years may possibly be better qualified to judge of the requirements of the port. As regards engineering difficulties of any of the works proposed there are none.

TRANSFERRED to the Department Public Works.

(Signed) W. HUDLESTON,
Chief Secretary to Government.

No. 97.

ORDER THEREON, 9th January 1874, No. 46.

CIVIL WORKS, No. 4.

ORDERED that the Home Government be addressed on the subject.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

Administrative Department

*N^o 489. Madras
Marine Office
20th December 1873*

From

*H. D. C. Dalrymple Esquire
Master Attendant
Administrative Department
Madras*

To

*The Honourable W. Hudleston
Chief Secretary to Government
Marine Department
Fort Saint George*

Sir

I have the honour to acknowledge receipt of G. O. Marine N^o 306, dated 9th instant, referring Mr. Parkes' able and interesting Report on the formation of a Harbour at Madras for my opinion on the Nautical bearings of the question. I shall notice in succession the Points I do not entirely agree with, or explain them according to my lights on the subject.

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to warn the Government
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which may eventually
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expense.

3 In Para 14 of the
Report under review I quote
the following passage:—advances
of the beach involves a
greater depth of water
to be filled—now according
to our experience, as the
beach advances of course

7V

so does the line of surf
seawards, which stirs up the
sand—deposits it, and the
water gradually shoals. This
throws a different light on
the passage quoted.

Para 15 It appears to me
that the one probable lie
with the writer of this
Report: he should name
a harbour constructed on a
coast exactly similar to that
of Madras (Coromandel), in
the track of hurricanes,
with a capricious surf, which
is often impossible in a
dead calm. The capabilities
of the Ports of Port Said
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passed by the Port of
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4—Para 16 I also submit
that

that the circumstances
of the beach at Vizagapatam
are entirely different. Sir
Arthur Cotton's groynes
are on the north side
of the entrance of the
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which the tide flows
and ebbs, and on the
South side a precipitous
bluff called "the Dolphins
nose" rises out of the sea
with no beach at all.

5 Para 19. I agree with
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6 Para. 20-21. I am constrained
to differ from the writer
regarding a breakwater.
We require one to break
the force of the sea - not
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of the question. The time
of peril to shipping is
the Madras Season - that
is when the gale is dead
on shore, and the sea
at its highest, rolling right
in on the land; then a
breakwater would be
salvation to the shipping.
There is no danger
from heavy sea from the
Northward: the trend of
the coast is against it.
if a ship is uneasy, she
can go to sea to the
Southward, leaving the
advantage when getting
under weigh of hauling
out in comparative smooth
water under the lee of
the breakwater, and if
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Note
Evidence by Colonel Sir Chief
Engineer before the
Breakwater Committee.
"No sea ever runs parallel to
this Coast"

Also vide Sir Arthur
Cotton's opinions on the subject.

* Extract from Sir Arthur
Cotton's remarks on Madras
Harbours.

In this respect I think
there

in from the Southward,
a ship has only to put to
sea in a similar fashion
to the Northward, yet

I do not anticipate any such
discrepancies.

¶ Para 32. This is a simple
question. "You can't be
certainly secure sufficient
shelter, if you have the
breakwater long enough,
and you can't supply
additional shelter, except
Captain Dickinson's plan
(or something like it), with
his evidence before the
Breakwater Committee, or
Sir Arthur Cotton's plan.

¶ Paras 27, 28, 29. The writer
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classes of storms with
directions of the wind

There is an advantage in the
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breakwater permitting a ship
both to enter and depart
in all winds and in all
weathers.

In this important point
no harbour can compare with
a simple breakwater parallel
with the straight coast, and
I suppose Madras with such
a work would be the safest
harbour in the world, there
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danger in approaching or
leaving it.

¶ Para 30. Here the writer
is I think under a mis-
apprehension. A cyclone of
the 2^d class is not at its
height when the wind is
blow in shore from the
Eastward, not at the tail
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veered round to the South-
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These ships that cannot obtain
rooms in the Harbour and
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in the event of bad weather.
The Piers that form the
Harbour will be substantial
dangers.

2. Para 44-45 It appears by
these Paras that the Piers
proposed are to be 20 to 25 feet

3 1/2 feet above high water
level. That the matter

side would be exposed to

the sea washing over it, and

that the ships will not

be removed from their

breaking sea. This being

the case, I should say that

a ship would run less

risk in our open roadstead

without a breakwater than

if caught in such a trap.

We all know that on this

* In this proposed Harbour
space to be provided for only
16 ships, secured closely to
fixed moorings.

Note
* This in fine weather.

Note.
* The safety of a ship in a
hurricane is when she has
side room to run away cable
to

eat out...
be. Hasting being at single
and able to run away cable
in the hurricane in the
the River in 1864. In previous hurricanes
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either stranded or totally lost.

Note
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of following disaster.
In May 1833 the H. b.
Duke of York during
vicar was blown from
Government moorings at
anchorage. Suffered then
to be blown into, and in
position driven on shore
5 or 7 miles to the
towards of Herdgera.
Then the waters subsided,
was found high and dry
in jungle at least 1/2 or
from the waters edge.
tonnage was about 1400 tons, within the narrow limits
with 26 guns mounted.
the disaster occurred.

side of India in a
violent gale or hurricane

the waters rise considerably
and if the sea walls or

Piers of the Harbour be
submerged, which they will

be to a certainty, and the
Ocean wave rolls in clean

over them, what chance of
escape would there be for

the shipping confined
within the narrow limits
of this Harbour.

13. With reference to
the above, I may refer

Government to the Report
of the Calcutta Cyclone

of October 1864, on which
occasion ships in the Hooghly

off Calcutta, grouped at
moorings as proposed in the
Madras Harbour, were

from

at of Report of the Hurricane
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I refer the Government to
the opinions of Sir A. Cotton,
Colonel Orr and the late
Colonel Carpenter, the
former Chief Engineer,
and our present Chief
Engineer.

15 ✓ Engineer and Secretary
to Government D. P. W. V. V.
with reference to the last
sentence regarding the in-
fallibility of moorings vide
Para 13 of this letter.

16. Para 54. I have never
understood that there was
the slightest engineering
difficulty in constructing a
close harbour here: it seems
to me that nothing could
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* Query
As the shore at Madras was
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contemplated by the
Projector.

* Vols Dnos 44-45-46 in
the Report.

Inspector in Para. 5 of
his report, which alone
will nearly double the
cost. Besides this nothing
it will be found in the
long run, that taking
into consideration the cost
of moorings, steam tugs and
cranes required but not
mentioned, which I estimate

Note
* Name of these appliances
are required for a Breakwater

at three lacs of Rupees,
this harbour of limited
extent will cost quite as
much as a Breakwater,
while it can never be a
Harbour of refuge, and
cannot afford the same
amount of safety and
accommodation as the work
proposed by the Breakwater
Committee

I would rather than this
have merely a best Harbour,
the outer sea wall being a
continuation of the Trend
of the Pier.

19 ✓ Committee in 1869.
23. In conclusion, I beg
leave to state that no
one can have appreciated
more highly the Proprietor's
abilities and achievements
as an Engineer than I have,
yet I may be permitted
to point out that, as his
stay in Madras was only
during a few weeks of most
exceptional and unprece-
dented weather for the
season of the year,
during which time, strange
to say, he had only one
opportunity of seeing an
average monsoon surf.
Some of opinion that
those

those, who have been
 familiar with the plans
 for a long series of years,
 may possibly be better
 qualified to judge of
 the requirements of the
 Port:— as regards
 Engineering difficulties of
 any of the works proposed—
 there are none.

I have the honor to be
 Sir
 Your most obedient servant

W.D.S. Dalrymple
 Master Attendant
 Administrative Department.

Administrative Department.
 The Chief Secretary to
 the Government.
 Marine Department
 Fort St. George
 Madras
 20 Decr 1873
 Recd. 22
 No. 1125
 No. 1489
 The Master Attendant on
 the Madras Harbour
 the formation of a
 Harbour at Madras
 No. 1125
 No. 1489
 The Master Attendant
 on the Madras Harbour
 the formation of a
 Harbour at Madras
 No. 1125
 No. 1489

W.D.S. Dalrymple
 9 Aug 1874

The Right Honble
 the Secretary of State
 for India.

My Lord Duke,

Yours

In continuation of
 Despatches No 18 of 30 June
 No 36 of
 and 16 December 1873
 we have the honor here-
 with to forward a letter
 on the subject of Mr.
 Parkes' proposed Harbour
 for Madras, submitted
 by the Master Attendant,
 Administrative Depart-
 ment; and, with reference

all letters looking at
 the letter enclosed
 we were inclined
 to agree with
 the Master
 Attendant,
 on the grounds
 that the success
 of Mr Parkes's
 scheme
 I will alter it as
 I see fit

thereto, to request that the whole subject may be remitted to the Trinity House for an authoritative decision of the nautical questions involved in it. In the Chief Engineer's Memorandum forwarded with Mr. Parkes' Report, he intimated his opinion that it was desirable that such a reference should be made as to the nature of entrance to be adopted. And in Mr. Dalrymple's letter other nautical points are mooted; such as the amount of

I was not intended for
the DfP - Despatch
one in the following
terms: -
"In reference to
James Despatch,
I have been the
honor to take to
G. S. that it appears
was desirable that
Mr. Parkes' Report
on the best means of
providing a shelter for
shipping at Newry,
should be brought under
the reference for the
consideration and for
each respect of
their opinion, & the
Elder Brethren of the
Committee - I am

at the same time to
transmit to G. S. a
letter which on being
seen? on the subject
from the Committee
Attended to Admiralty
Despatches

I have to Mr.
~~If we do not~~
~~enter the subject~~

I am sure that if
this point does not
hold the
responsibility of
James Despatch
on Mr. Parkes' Report
on the subject

protection from wind
and wave that it is
desirable to obtain, and
the best arrangement of
moorings that will se-
cure amplest accommo-
dation combined with
most safety. Mr. Parkes' project, it is felt, will
secure such effectual
protection from the action
of surf as will provide
an admirable fair
weather harbour, at a
cost commensurate
with the means of the
Port, and such as will
not unduly burden
the trade; but it is doubt-
ful, according to pre-
sent information, whether

it will be conveniently
open for ingress and
egress as at present
planned, and whether
in Cyclones or even
ordinary storms
it may not present
even greater danger
to shipping than an
open Roadstead.

Under these circum-
stances therefore we
have the honor to
suggest to Your Grace
the desirability of
obtaining the best
nautical opinions
procurable as to
the fitness of the Plan
proposed by Mr. Parkes

but ~~not~~ professional
(engineering & nautical)
of advice which
it can offer, there
is an end to the
project. This Office
w. I think perfectly
saw the effect of
striking the question
altogether. J.P.

Jasper & A. B. D. R.
The Survey want an
opinion of the Trinity
on the Scheme & ask
it in the shortest form

J.P. M.H.

25
for the object in view,
viz: not only protection
from surf in ordinary
weather, but the best
protection that can
be looked for in
such a situation from
the effects of wind
and wave in storms.

C.M.W.

meas in high at and
interior place was given
up and was in good order
last and had no other
and was intended
in and at the end of
of the building a large
building for the purpose of
commerce in commerce and

N^o. 46 P.W. D
Pro. of the Madras Port.
Read the following

From the Master Attendant, } H.E. No. 7489 of 20 Dec/73
Administrative Dept. }

Ordered that the
Home Port. be addressed
on the subject.

To The Chamber of Commerce

only one copy despatched 25/2/74
the origl having been despatched direct
by the Secretary.

SD

2

Q. N. S. to Engd. de
9. June 10/1874

Govt. of 1874 Madras.
PUBLIC WORKS.

To

Dated

Recd.

Encl.

Very Respect
8/1/74
G. O. 9th Aug 573, No. 46.

Recd. 96897

Harbour at Madras.

Passing orders on letter
from the Master At-
tendant, Madras, re-
marking on Mr. Pike's
Report for a Harbour
at Madras.