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MADRAS RECORD OFFICE.

Government of Madras.

P. W. DEPARTMENT.

G.O. No. 1268

Press
-Mis.-

472 - 473

Dated 24-4-1868.

Not to be folded or roughly handled

24th April 1868.

No. 472. Read the following letter from W. FRASER, Esq., C. E., Executive Engineer, to the Secretary to Government, Public Works Department, dated Madras, 13th April 1868, No. 10 :—

1. I have the honor to acknowledge, with thanks, a copy of my report on the proposed Sea Level Junction Canal, and to express my satisfaction that the whole question has been referred for the consideration of a Committee.

My object in writing now is to draw attention to a point which, if unexplained, may be considered an objection to a sea level canal :—

2. If the Kuam and the Adiyar are connected by a canal at the sea level, the conditions of Cochrane's Canal would be so altered as to render Sheddiankuppam lock unnecessary : for it would be useless to attempt to keep the water up at one end, when it would be free to run out at the other. Under these circumstances, if it were considered necessary to keep the water up as it is at present by Sheddiankuppam lock, a similar lock should be constructed somewhere south of Madras.

3. I do not think that this fact need influence the decision of the Committee one way or the other ; experience has, I think, shown that the benefits which have been derived from Sheddiankuppam lock are not worth the cost of its construction and that of the establishment engaged in working it.

The intention was that the tidal water from the Ennore bar should pass up through the lock and through Cochrane's Canal into the Kuam. At high water the gates were to be shut for the purpose of keeping the water as high as possible until the time of next tide.

This intention has been carefully carried out, but with only a very small amount of success ; an amount, however, which might have been expected by a consideration of the following conditions.

The distance the tide has to flow from the Ennore bar to the Kuam is $12\frac{1}{4}$ miles, $8\frac{1}{4}$ miles being through Cochrane's Canal and a narrow part of the back water.

The range of spring tides at the bar is probably 33 inches ; that of neap tides probably 20 inches.

The range of tide being so small, and the distance the water has to flow through a narrow channel so considerable, the water could never rise in the Kuam to the full height of high water (by the tidal action alone), even if all artificial obstructions were removed. But when we take into account that the water must pass through the lock, which is but 20 feet in width, and that the flow is again obstructed at every bridge across the canal, we need not be surprised that the river is seldom raised much above mean sea level. At the present time, with the bar open, the surface of the river is nearly twelve inches *below* mean sea level ; but this is owing partly to the neap tides, and partly to the prevalence of strong south and south-west winds.

4. Under these circumstances, I have taken it for granted that if a sea level junction canal be adopted, it would never be proposed to construct on the south of Madras a lock similar to that at Sheddiankuppam. But that the plan much more likely to receive the sanction of the Government would be to deepen the river and Cochrane's Canal, to remove the lock, and, as far as possible every other artificial obstruction, and to let the tide ebb and flow freely through the river and the canals north and south of Madras. Under this arrangement, the high and low waters would be, respectively, higher and lower than they are now ; but

Proceedings of the Madras Government, Public Works Department.
24th April 1868.

the range would still be small, and the deeping of the channels would prevent any portion of the beds being uncovered at any time. Besides, the water would cease to be stagnant, as it is at present; and being in constant motion, and renewed every day, it would become healthy; and, very probably, a superior description of fish would eventually find its way into the river.

Plans and estimates for the improvement of the river, embracing the points briefly alluded to above, are now in hands, and will be shortly submitted; but I thought it right to bring to notice, now, the leading points to be considered, for the information of the Committee.

5. Should the Committee consider the amount to be paid for damages a very serious matter for consideration in the selection of a line, they should not take the amount named in my report for each line as any thing but an approximation.

These amounts are likely to be tolerably correct for all the lines except No. 5, as they would probably be settled by the Revenue Department; but as the amount for damages on that part of No. 5 lying between Peters' road and the Kunam, would probably be settled by arbitration, or in the law courts, it may far exceed the sum named in my report.

No. 473.

ORDER THEREON 24th April 1868, No. 1,268.

CIVIL WORKS, No. 60.

Communicated to the Committee
appointed to report on the Junction
Canal project for consideration.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Junction Canal Committee.
To W. Fraser, Esq., C. E.
To the Superintending Engineer, 4th Division.

Exd. S. T. Augustin.

No 10

Mount Road 13th April 1868
Despatched 18 April 1868
From W. Fraser Esq^r C.E.
Ex: Engineer
To Colonel C.A. Orr C.E.
Secretary to Government P.W.D.
Sir -

I have the honor to acknowledge,
with thanks, a copy of my report on the
proposed Sea level Junction Canal; and to
express my satisfaction that the whole question
has been referred for the Consideration of a
Committee. -

My object in writing now is to draw
attention to a point which, if unexplained,
may be considered an objection to a Sea
level Canal. -

2. - If the Kunam and the Adiyar are
connected by a Canal at the sea level,
the Conditions of Cochrane's Canal would
be so altered as to render Sheddiankuppam
Lock unnecessary: For it would be

useless to attempt to keep the water up at one end, when it would be free to run out at the other:— Under these circumstances if it were considered necessary to keep the water up as it is at present by Sheddiankuppam Lock, A similar Lock should be constructed somewhere south of Madras.—

3— I do not think that this fact need influence the decision of the Committee one way or the other; Experience has I think, shown that the benefits which have

been derived from Sheddiankuppam Lock are not worth the cost of its construction and that of the establishment engaged in working it.

The intention was that the tidal water from the Ennore Bar should pass up through the Lock and through Cochrane's Canal into the Kuam: At High water the gates were to be shut for the purpose of keeping the water as high as possible until the time of next tide.

This intention has been carefully carried

out but with only a very small amount of success; an amount, however, which might have been expected by a consideration of the following conditions:

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The range of Spring tides at the Bar is probably 33 inches; that of neap tides probably $20\frac{1}{2}$ inches:—

The range of tide being so small, and the distance the water has to flow through a narrow channel, so considerable, the water could ~~never~~ ^{never} rise in the Kuam to the full height of high water (by the tidal action alone) even if all artificial obstructions were removed: But when we take into account that the water must pass through the Lock, which is but 20 feet in width, and that the flow is again—

obstructed at every Bridge across the Canal,
we need not be surprised that the River
is seldom raised much above Mean Sea
level: At the present time with the
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the Canals North and South of Madras:
Under this arrangement the high and

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I have the honor to be

Sir

Your Most Obedient Servt.

William Fraser C.E.

Exc: Engineer

List

Civil Works a ✓
No 1268
1268

Communicated to the
Committee appointed to
report on the Junction
Canal Project for consi-
deration.

Fort Saint George
26 April 1868

✓

3 To Junction Canal Committee ✓
2 Mr Frasery C.E. ✓
194 & 24 Oct
Recd 27/4/68

126

N^o W 1868 Depo
Pro: of Govt. for April
of 1430
From

W. Fraser Esq^r & Co
Es: Engineer

To
Col. G. A. Orr R.E.
Secy: to Govt
P.M.D.

Dated 18
Recd 20th April/68
N^o 1268-24: April/68

Reporting about
Locks in the line
of Madras Junction
Canal. —

With an Appendix

Ch^o 472-473