(1) Number of pages 38

(2) Date of repair 2-6-87

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

DEPARTMENT

G.O. No. B.P. No.	563-W	Press. Mis.
Dated	21-2-1883	~~19~~.

Not to be folded or roughly handled

Archives 1--10,006 1 -80.

21st February 1883, No. 563 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 141.

Read—the following papers :—

Proceedings of the Surgeon-General with the Government of Madras, dated Ootacamund, 3rd June 1882, No. O-184.

Read—letter, No. 10, of 23rd May, from the Senior Medical Officer, General Hospital.

Abstract.—Forwarding correspondence between himself and the President of the Municipality on the subject of noxious exhalations from the Cooum river pervading the hospital.

Order—

The nuisance complained of is of annual recurrence in the hot season, but the Surgeon-General does not see what can be done to prevent it, the hospital occupying, as it does, an angle formed by the canal and Cooum, whose waters are liable to sudden changes from rainfall, communication with the sea, or rise of temperature.

2. The remedy suggested by the Senior Medical Officer, of letting in sea-water at high tides, was tried on one occasion within the Surgeon-General's recollection, but instead of abating the nuisance, it only increased it. On this occasion (in 1870) the sea-water was let in at a time when the sea was full of a species of *oscillatoria* producing the phenomenon of phosphorescence. These minute creatures died by myriads under the changed condition of their existence, and produced so fearful a stench that many persons having to pass near the river in any portion of its tidal length were attacked by sickness. Fortunately heavy rain fell early in June of that year, sufficient to force open the bar and to remove the offensive matter.

3. It is apparently the fashion to speak of the Cooum as an open sewer, and of the contents as "sewage," but in sober truth the river is not a sewer, nor are its contents sewage. As Sir Charles Trevelyan pointed out in his evidence before the Royal Sanitary Commission in 1863, fish do not live in sewers, yet the Cooum river in its tidal portion is a great breeding ground for marine fish of various species, and, as shown by an inquiry made by the Sanitary Commissioner in 1871, from 200 to 300 persons find an occupation and livelihood in fishing the waters.

The area of the river bed within the Municipality was estimated by the late Mr. W. Fraser, C.E., as between 500 and 600 acres, and the fact that the waters are so spread out materially lessens the evils arising from the discharge of certain surface and storm water drains into the river. It is of course objectionable that any sewage of the town should find its way into the river. The Municipal Commissioners have already attempted to divert the sewage of Triplicane and Chintadripett by irrigating grass lands in the Napier Park, and the new scheme of drainage will relieve the canal and river of much which now helps to pollute the stream in the dry season of the year.

4. In measures for dealing with the Cooum the peculiarities of the river must be understood. It is a tidal stream for a short period in each year, filled with sea-water, and for another and longer period it is filled with a mixture of salt and fresh water, and with no outlet, but the character of its water liable to sudden variation with every fall of rain.

5. Smells and nuisance arise in the Cooum from a variety of causes, which the Municipality and Government are incapable of dealing with. A sudden mixture of rain-water with brackish water will, for instance, kill myriads of minute organisms, animal and vegetable, and produce noxious smells. An increase in temperature will produce violent changes in shallow water lying on muddy deposits. The Surgeon-General has known the Cooum to be as offensive (the bar having been artificially closed before the end of the rainy season) when full in the cool season of the year, as when low from evaporation and exposure of mud banks in the hot weather. It is sufficient to recognize that there are other causes to account for its offensiveness beyond the insignificant amount of sewage that finds its way into the stream, and which amount will soon be altogether diverted.

6. It is believed that engineering authorities who have studied the question are of opinion that the river is unnecessarily wide for the drainage of the water-shed, and that it is capable of improvement as regards dredging and embankment. It is to be remembered that old maps of Madras show the mouth of the river as very differently shaped to what it is now. Much has been done in embanking and straightening the course of the stream, and more remains to be done, in the deepening of its bed and embankment, before it will be in a satisfactory condition. Every monsoon washes thousands of tons of detritus of laterite roads into the river, and the tendency is for deposits of this substance to take place at the mouths of all the storm-water drains opening into the river. Opposite the General Hospital itself, and at the mouth of the open drain of the hospital grounds, a deposit of mud has been and is still accumulating, which in hot weather is no doubt a nuisance. There is in fact great room for improvement of the bed of the river and canal in parts adjacent to the General Hospital.

7. During the famine period His Grace the late Governor of Madras effected considerable improvements in that portion of the Cooum between the Penitentiary and the mouth of the river by dredging and embankment. It is to be regretted that financial difficulties should have prevented the work being carried on throughout the tidal portion of the river. There is no doubt that dredging of the bed of the stream ought to be carried out on a regular system, and that wherever feasible its banks should be narrowed.

8. The completion of the junction canal has added perhaps another item to the difficulties of the situation as regards the conservancy of the Cooum. Owing to the absence of locks where the canals join the Cooum, it is no longer feasible to keep the water beyond the level of the Adyar on one side, and of the Kortalayár backwater on the other. If the bar of the Cooum is closed, and the bed of the river fills, the water escapes by the junction canal into the Adyar.

Probably it may be necessary to have properly-constructed locks in the canal, so as to regulate the retention or discharge of water from the Cooum.

9. A copy of these Proceedings will be forwarded to the Chief Engineer, Public Works Department, with a request that if possible, the portions of the river and canal beds adjacent to the General Hospital may be dredged and embanked, if there are any funds provided for the improvement of the river.

(Signed) W. R. CORNISH,
Surgn.-Genl. with the Govt. of Madras.

To the Senior Medical Officer, General Hospital.

No. O-185.

Endorsement on the above.

Forwarded to the Chief Engineer, Public Works Department, for favor of action with reference to the concluding paragraph of the Proceedings.

Ootacamund,
3rd June 1882.

(Signed) W. R. CORNISH,
Surgn.-Genl. with the Govt. of Madras.

No. 141-A.

No. 212 E

Memorandum by the Chief Engineer, Public Works Department.

In acknowledging the receipt of a copy of the Proceedings of the Surgeon-General with the Government of Madras, forwarded with endorsement, No. O-185, dated 3rd June 1882, the Chief Engineer has the honor to state that the question of the regulation of the Cooum river and Cochrane's Canal will probably come under consideration of Government in connection with the Buckingham Canal completion estimates shortly expected. Already the complete regulation of the flow along the junction canal between the Cooum and Adyar rivers has been provided for by the sanction of a double lock, to be built at the south end of the junction canal, near the site of the present temporary lock.

(Signed) R. H. SANKEY, Colonel, R.E.,
Chief Engineer, P.W.D.

9th June 1882.

To the Surgeon-General with the Government of Madras.

No. 141-B.

Memorandum by the Chief Engineer, Public Works Department.

Since the date of the Surgeon-General's Proceedings, dated 3rd June 1882, an opportunity has been afforded of practically testing the one point of importance regarding which there had hitherto been some reason to entertain doubt in reference to the regulation of the Cooum river, viz., as to the capacity of the trough of the river to discharge the floods which occur from time to time.

2. In paragraph 6 of his letter the Surgeon-General states that it is believed that engineering opinion goes to show that the river is "unnecessarily wide," in other words, that its capacity is in excess of the work it has to do.

3. From what can be learned of the extreme flood of 1874 the section of the river bed appears to have then proved itself insufficient for the retention of the water to be discharged within the banks; and whatever doubts may have been entertained as regards its behaviour then has been entirely set at rest by the manner in which the stream overflowed its banks during the flood of November last. Most of the bridges were submerged to within 2½ or 3 feet of the crowns of their arches, and at all low places the banks and compounds were overflowed.

4. With the construction of the double lock at south end of the Buckingham Canal the level of water in the river will, throughout all ordinary seasons, be under as complete regulation as it is possible to expect, and as Mr. Jones' drainage scheme advances towards completion, sewage will be more and more diverted from discharge into the river.

5. On these several points, therefore, viz., the capacity of the bed for discharge of flood, regulation of the water level in all ordinary seasons, and in reception of town sewage, no other measures than those either already taken or in progress are to all appearances either feasible or desirable.

6. Something, however, might with advantage be undertaken for giving a more even and uniform section to the trough of the river, and maintaining this with exactitude than at present obtains. Embanking in the ordinary sense cannot be resorted to, indeed would be both useless and mischievous; but there is no reason why in places more uniform curves might not be worked out, and a neatly trimmed section given and maintained.

7. As proved by work of the kind in many places, grass could be encouraged on most of the ordinarily exposed section, and the river confined, except in flood, to a well and evenly defined channel, not only pleasing to the eye, but likely to serve in the most direct manner the cause of sanitation, in the interests of which the Surgeon-General writes.

8. The President of the Municipal Commission might, in reference to this point, be asked to state whether he can see his way to carrying out the desired measures.

Madras,
16th February 1883.

(Signed) R. H. SANKEY, Colonel, R.E.,
Chief Engineer, P.W.D.

No. 142.

Order—dated 21st February 1883, No 563 W., Public Works.

The Government would be glad to see the adoption of measures in the direction indicated by the Chief Engineer for the improvement of the trough and the banks of the river. The President of the Madras Municipal Commission will report whether he can see his way to carrying them into effect.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Surgeon-General with the Government of Madras.
„ President, Madras Municipal Commission.
„ Superintending Engineer, Fifth Circle.
„ Public Department.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1883) Madras.

PUBLIC WORKS.

Dated February, 21st.

Recd. Encl.

G.O., 21st Feb. 1883, No. 563 W.

FEBRUARY.
Nos. 141-142.

Cooum River

Regarding the improvement of the trough and the banks of the —.

No. 5/134 [illegible] P1

Proceedings of the Surgeon General with the Govt: of Madras, dated Ootacamund, 3d June 1882

Read letter No: 310 of 23d May from the Senior Medical Officer, General Hospital forwarding correspondence between himself and the President of the Municipality on the subject of noxious Exhalations from the Cooum river, pervading the Hospital.

Order The nuisance complained of is of annual recurrence in the hot season but the Surgeon General does not see what can be done to prevent it, the hospital occupying as it does an angle formed by the Canal and Cooum whose waters are liable to sudden changes from rainfall, communication with the sea, or rise of temperature.

2. The remedy suggested by the Senior Medical Officer, of letting in sea water at high tides, was tried on one occasion within the Surgeon General's recollection, but instead of abating the nuisance it only increased it. On this

season (in 1870) the sea water was let in at a time when the sea was full of a species of *oscillatoria* producing the phenomenon of phosphorescence. These minute creatures died by myriads under the changed condition of their existence and produced so fearful a stench, that many persons having to pass near the river in any portion of its tidal length were attacked by sickness. Fortunately heavy rain fell early in June of that year, sufficient to force open the bar, and to remove the offensive matter.

3 It is apparently the fashion to speak of the Cooum as an open sewer, and of the contents as "sewage," but in sober truth the river is not a sewer nor are its contents sewage. As Sir Charles Trevelyan pointed out in his evidence before the Royal Sanitary Commission in 1863, fish do not live in sewers, yet the Cooum river in its tidal portion is a great breeding ground for marine fish of various species, and as shown by an enquiry made by the Sanitary Commissioner in 1871, from 2 to 300 persons find an occupation and

livelihood in fishing the waters.

The area of the river bed, within the Municipality, was estimated by the late Mr. W. Fraser, C.E. as between 500 and 600 acres, and the fact that the waters are so spread out, materially lessens the evils arising from the discharge of certain surface and storm water drains into the river. It is of course objectionable that any sewage of the town should find its way into the river. The Municipal Commissioners have already attempted to divert the sewage of Triplicane and Chintadrepett, by irrigating grass lands in the Napier park, and the new scheme of drainage will relieve the canal and river of much which now helps to pollute the stream in the dry season of the year.

4 In measures for dealing with the Cooum, the peculiarities of the river must be understood. It is a tidal stream for a short period in each year, filled with sea water, and for another and longer period it is filled with a mixture of salt and fresh water, and with no outlet, but the character of its water liable to sudden variation with every fall of rain.

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Cooum from a variety of causes, which the Municipality and Govt. are incapable of dealing with. A sudden mixture of rain water with brackish water, will for instance kill myriads of minute organisms, animal and vegetable, and produce noxious smells. An increase in temperature will produce violent changes in shallow water lying on muddy deposits. The Surgeon Genl. has known the Cooum to be as offensive (the bar having been artificially closed before the end of the rainy season), when full in the cool season of the year, as when low from evaporation and exposure of mud banks in the hot weather. It is sufficient to recognize that there are other causes to account for its offensiveness beyond the insignificant amount of sewage that finds its way into the stream, and which amount will soon be altogether diverted.

6. It is believed that Engineering Authorities who have studied the question are of opinion that the river is unnecessarily wide, for the drainage of the water shed, and that it is capable of improvement, as regards dredging and embankment. It is to be remembered that old maps of Madras show the mouth of the river as very differently shaped to what it is now. Much has been done in embanking and straightening the course of the stream, and more remains to be done, in the deepening of its bed, and embankment, before it will be in a satisfactory condition. Every monsoon washes thousands of tons of detritus of laterite roads, into the river, and the tendency is for deposits of this substance to take place at the mouths of all the storm water drains opening into the river. Opposite the General Hospital itself, and at the mouth of the open drain of the Hospital grounds, a deposit of mud has been and is still accumulating which in hot weather is no doubt a nuisance. There is in fact great room for improvement of the bed of the river and canal, in parts adjacent to the General Hospital.

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9. A copy of these Proceedings will be forwarded to the Chief Engineer P.W.D. with a request that if possible the portions of the river and canal beds, adjacent to the General Hospital, may be dredged and embanked, if there are any funds provided for the improvement of the river.

Sd/ W.R. Cornish
Surgeon General
with the Govt of Madras

To
The Senior
Medl: Officer
General Hospital

No. 0/185

True Copy - forwarded to the Chief Engineer P.W.D. for favor of action with reference to the concluding para of the Proceedings.

W.R. Cornish
Surgeon General
with the Govt: of Madras

Ootacamund
3d June 1882

Memo No 212 Ed/ 9th June 82

In acknowledging the receipt of a copy of the Proceedings of the Surgeon General with the Govt of Madras forwarded with Endorsement No 0/185 dated 5th June 1882, the Chief Engr has the honor to state that the question of the regulation of the Cooum River and Cochranes' Canal will probably come under consideration of Govt in connection with the Buckingham Canal Completion Estimates shortly expected. Already the complete regulation of the flow along the junction Canal between the Cooum & Adyar Rivers has been provided for by the sanction of a double lock, to be built at the South end of the junction Canal, near the site of the present temporary lock. (Sd) R H [illegible]

Pl. 5/6

To The Surg: Genl. [illegible] (Sd) R.P. Chief Engr [illegible]

1882

P. W. Dept

H C No 2584

from

The Surgeon Genl

with Govt

1/6.

Dated 3rd }
Recd 3 } June 82

Regd 12th

No: 0/185

No 563 Wd/ 21st Feby 183

Fwd for action copy of his Proceedings reg: improvement to the Cooum

No 212 Ed/ 9th June 82

With Memo

P. W. Department

Memo by Chief Engineer

563/8

P 6

Since the date of the Surgeon Generals' Proceedings dated 5th June 1882 an opportunity has been afforded of practically testing the one point of importance regarding which there had hitherto been some reason to entertain doubt in reference to the regulation of the Cooum river, viz, as to the capacity of the trough of the river to discharge the floods which occur from time to time

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563/10

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out the desired measures.

(Sd) R.H. Sankey Col. ~~Major~~ R.E.
~~for~~ Chief Engineer P.W.D.

Madras
16th Feby 1883

Circulated for
orders.
16/2

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" 1002 W d/ 13.10.77
" 212 E d/ 9.6.82

The Hon. Mr. Sullivan

For orders.

No 563 W d/ 21st Febry/83

Circ: 16/2 Rd 20/2

Improvement of the Cööums

D. W.

563/12

Please have faired ~~a~~ and circulated to the H. M. — My hand writing is unusually shaky owing to the tremulous motion of the Steamer

12.2.83

Office Circ.

16/2

Mr.

Improvement of the Lune —

I don't clearly see in what direction you wish me to work —

The completion of the locks to the North & South of the river will enable water to be retained at a moderate height, and more than that I doubt if we can ever do —

It is exceedingly doubtful whether it is possible to keep the bar permanently open, and by no means certain that to do so would be an unmixed advantage, while it is quite certain that the expense both of construction and maintenance, would be enormous —

Dr Cornish's opinion that the bed of the river is too large does not seem well founded — It is notorious that the Cooum overflows its banks whenever there is a really heavy monsoon —

In 1869, 1874, and I believe last year as well the water rose over the crown of the bridge arches & the waterside roads were flooded —

5/2

Memo by the Chief Engineer

Since the date of the Surgeon General's Proceedings Dd 3d June 1882 an opportunity has been afforded of practically testing the one point of importance regarding which there had hitherto been some reason to entertain doubt in reference to the regulation of the Cooum river, viz: as to the capacity of the trough of the river to discharge the floods which occur from time to time —

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With the construction of the double lock at South end of the Buckingham Canal the level of water in the river will throughout all ordinary seasons be under as complete regulation as it is possible to expect, and as the town's drainage scheme advances towards completion, sewage will be more and more diverted from discharge into the river -

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Sanitation in the inter
of which the Surgeon
General writes

The President of the
Municipal Commission
might in reference to this
point be asked to state
whether he can see his
way to carrying out the
desired measures

12.2.83

D.W.

I should be much
obliged if you can
take up the subject
during my absence
from the 6th to about
the 20th inst.

3/2/83

C.A.W.

Returned to the files —

I cannot as yet take up the quest

RCA

13.10.82

To W

Resubmitted for informat

RS 13.1

(55)

No. 11

563/15

Regulation of the Cooum River.

The accompanying file of papers has been collected on the above subject in connection with Dr. Cornish's letter No/185 d/3rd June/82.

No Plans have been sent up from Madras. Should you require any particular Plan it can be called for. Plans of this character would be filed in the C.E.'s office.

RS 15/6.

A
From order

B.R.P.
C.B.P.

No. 563W Public Works Department.

563

PROCEEDINGS OF THE MADRAS GOVERNMENT.

18

Under date the 21st Febry/83

Read the following

From the Surgeon General with the Govt. of Madras .. (H.E. O/185 d/ 3rd June 1882)

Memo: by Chief Engineer, P.W.D. (" d/ 16 Febry 1883)

The Government would be glad to see the adoption of measures in the direction indicated by the Chief Engineer for the improvement of the trough and of the banks of the river – The President of the Madras Municipal Commission will report whether he is seeking

way to carrying them
into effect

20/2/83

The Surgeon Genl with
the Govt of Madras 4
" President, Madras Municipal
Comm 3
" S.E. Fifth Circle 7
" Public Dept 7
Despd
20/2

5-3-83

874

Govt. of (1883) Madras.

PUBLIC WORKS.

Dated

Press 22/2/83

Recd. Encl.

G.O. 21 Feby 1883 No. 563-Ir.

Nos. 141-142.

Cooum River

Regarding the improvement of the trough and the banks of the ——

53/5

19 10½

Entered in the Receipt Regr