(1) பக்கங்களின் எண்ணிக்கை 58

(2) புதுக்கித் திருப்பிய நாள் 1/91

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 1169

அச்சகம்
பலவகை

நாள் : 27-4-1893

198

...ா கண்டபடி கையாளவோ கூடாது

...—18,006—15-6-87.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

Petition from Vellal Narayana Menon, dated 4th April 1893.

Note by the Acting Chief Engineer, Public Works Department.

With reference to the suggestions made in the accompanying letter and enclosures from Mr. Vellal Narayana Menon in connection with the Cooum the following remarks are offered:—

1. The assumption appears to be that the object to be aimed at is getting the *water* out of the Cooum during the dry months; whereas precisely the opposite is what is required. The water of the Cooum is not at fault; it is rather the want of it. The stench from the river arises from the great accumulations in it of sewage matter, *which are still being constantly added to*; when those accumulations are exposed, or the water is so low that they are near its surface, there arises from them the foul exhalations which poison the air of Madras; the water in the river should therefore be kept as high, not as low, as possible.

2. Mr. V. N. Menon's syphons though intended by him for the discharge of water from the Cooum into the sea could be arranged to discharge water from the sea into the Cooum when the former was the higher, but this could be effected more cheaply by simple pipes.

3. It must not however be forgotten that the admission of sea water into the Cooum is not considered by medical authorities to be at all times an unmixed advantage. Dr. Cornish, then Surgeon-General, wrote thus in 1870 with reference to admitting sea water into the Cooum:—

"The remedy * suggested was tried on one occasion within the Surgeon-General's recollection, but instead of abating the nuisance only increased it. On this occasion (1870) the sea water was let in at a time when the sea was full of species of Oscillatoria producing the phenomenon of phosphorescence. These minute creatures died by myriads under the changed conditions of their existence and produced so fearful a stench that many persons having to pass near the river on 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 remove the offensive matter."

* See para. 11 of Mr. Jones' report with Proceedings of the Madras Government No. 349 M., dated 11th March 1891.

4. The truth is that nothing will much improve the state of affairs except the total exclusion from the river, and of course from also the canals in connection with it, of all sewage, and the removal of that already deposited. The former would not be a very difficult, though it would be a very expensive, undertaking; the latter can best be accomplished by the natural forces called into play when the river is in heavy

flood, with some mechanical assistance. Some considerable time might elapse before it would thus be accomplished, but stop the sewage from running into the Cooum and it will most certainly before the lapse of many years cease to be seriously offensive. Of course the removal of the sewage accumulations might be carried out by dredging and other artificial excavation but the effect whilst such work was in progress would probably be appalling.

5. I may say that I have no faith in the proposals which have been made to purify the Cooum by the action of the tides; their range is so small at Madras that any scour which could be created by their agency would not affect the river for any considerable distance from its mouth and would leave its foulest parts untouched.

19th April 1893.

(Signed) G. T. WALCH,
Ag. Chief Engineer, P.W.D.

ORDER—dated 27th April 1893, No. 1169 W., Public Works.

A copy of the Chief Engineer's note will be communicated to Vellal Narayana Menon in reply to his petition.

(True Extract.)

(Signed) J. HANNAN,
Ag. Joint Secy. to Govt., P.W.D.,
General, Buildings and Roads Branch.

To Vellal Narayana Menon.
" the Consulting Architect to Government.
" the Superintending Engineer, II Circle.
" the Local and Municipal Department.

Exd. A. D. Xavier.
Spare Copies

1169/2

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1893} Madras.

PUBLIC WORKS.

Dated April, 27th.

Recd.

Encl.

G.O., 27th April 1893, No. 1169 W.

APRIL.

Cooum River

Note by the Acting Chief Engineer, Public Works Department, in connection with the purification of the —, communicated to Vellal Narayana Menon.

1169/93

R.C.C. CAER 5 APL 93 M.C.S.

To,

His Excellency The Right Hon'ble Sir Beilby Lawley Baron Wenlock G.C.I.E Governor of Madras

May it please your Excellency,

I respectfully beg leave to bring to your Excellency's notice the following few lines Understanding from the local papers that the Madras public is in want of some means to permanently remove from the city the nasty stench produced by the stagnant water of the Cooum river, I have been for the last few months thinking of a plan for successfully diffusing the dirty water of the river

river into the sea. I am
glad to inform your Excellency
that at last I have hit upon
a scheme which is herewith
submitted. I request your Excel-
lency will kindly spend a
few minutes for its perusal.
If it is found worth Consideration
I hope your Excellency will take
measures to give effect to my
scheme. As I am not a student
of Engineering, if the scheme
proves to be impracticable in
the opinion of professional
men, I further request your
Excellency will be pleased to
excuse me for having transgressed
upon your Excellency's time
by

1169/97

by submitting such an unsealed-
for suggestion

I beg to remain,
Your Excellency's most
obedient & humble Servant
Vellal Narayana Menon.

No 2. Shaik Ali Subadar
street, Peramet, Madras
4th April 1893

1162/6

The scheme which I beg leave to propose to your Excellency is to connect the river water with the sea water without removing the natural heap of sand at the mouth of the Cooum. The accompanying diagramatic sketch (poor as it is) with the affixed explanations will, I hope, sufficiently illustrate to your Excellency how I propose to effect such a connection. The said connection is to be established by means of large syphon tubes (Fig. I.i) made of iron. For that purpose a tank freely connected with the river and of the shape shewn in the figure should first be dug at the mouth of the river. Its length

length from north to south
should be greater than the width
of the river in order that a
sufficient number of syphons
may be accommodated in the
space. The eastern bank of the
tank should approach as near to
the sea as possible so as to
reduce the width of the sand
(Fig I. iii) between the tank and
the sea, as much as can be done
Consistently with the strength
necessary for the wall. (Fig I v)
This eastern bank should be
strongly built with granite to
serve as a strong wall between
the sea and the river. The
other sides of the tank marked
with thick lines in the sketch
(Fig I vii) should also be strongly
built

1169
3

built.

Syphons on a horizontal level are then to be placed over this wall; their longer legs should immerse in the sea to a depth of at least four or five yards and their shorter legs to almost the same depth in the tank. The size and number of these syphons should be such as to give on the whole the total internal sectional area required to carry the necessary quantity of water from and into the river. To start the working of the syphons they should be filled with water by the funnel arrangement shewn in the figure (Fig II b.c). The openings of the two legs of the syphon can be

be temporarily closed by iron plates (Fig. II f) and the syphons filled from above through the funnel with water by water-pumps. When the syphons are filled with water to a height above the stop-cock in the funnel the stop-cock should be closed, the cap like Cover (Fig. II. a) of the funnel screwed on and the iron plates removed from the mouths of the legs. Then the syphon will begin to work. Each syphon can thus be successively filled with water and set to working order.

The longer legs of the syphons projecting into the sea should be

1169/10

be supported by iron pillars
These legs must extend to
such a distance into the sea
as to prevent their mouths from
being blocked up with sand
by the beating of the waves.
These legs should at the same
time sink sufficiently deep
into the sea so as not to
come out of the water when
the level of the sea water
sinks to its maximum depth.
Lastly to protect the
eastern bank of the tank —
against the pressure of the
torrent of water that may flow
towards it during the rainy
season, one or more sluices should
be

1169/11

be constructed in this embankment. These sluices the bottom of which should not be at a lower level than the level of the sea, should be used only to let out the excess of water that may be collected in the river during rainy season. In fact they are to serve the purpose of safety valves.

How the Scheme will work.

The scheme is a practical application on a large scale of a certain principle in Hydrostatics, namely "that if a Connection is established between two vessels containing water (or any other liquid

liquid of the same specific gravity
by means of syphon tubes, the
water (or the liquid) would flow
from the higher vessel to the
lower one". Applying this
principle to the case of the
Coorum river and the sea
it will be seen that the
sea and the river (in theory
at least) can be taken as two
vessels placed at different
heights containing liquids of
the same (since the difference can
be only very little) specific gravity.
During the tides (ebb and flow, and
Spring, neap tides) a difference of
level clearly takes place between
the waters in the river and
the sea. Hence a connection by
means of syphon tubes will surely

(to the best of my ~~ben~~ judgment) bring
about a flow of sea water
into the river and back, and
thus keep a current.

The internal sectional
area (or the area of the openings
of the longer or shorter legs of
the syphons) of all the syphons
taken together should be as large
as to allow a free flow of
the whole quantity of water through
the tubes at each tide, as if the
river were freely connected wi
the sea by means of a channel
as wide as the river itself.
This quantity of water whic
will naturally run into and
out of the river may be
proximately calculated; a
the necessary total internal
of the syphons of can be p

by increasing the number of the
syphons (if they are small ones)
or by procuring sufficiently large
syphons.

1169
19

Some of the Chief
Advantages of the Scheme

Having found that the
Construction of a dam extending
into the sea or any other Entrie
in Case the Comunication is establis
by means of a channel, woul
not prevent the yearly accu
lation of the sand at the m
of the Coorum Caused by
it occurred to me that the
mentioned scheme would b
practicable and fruitfu
the intended result. Re
was had to this scheme ch

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syphons (if they are small ones)
or by procuring sufficiently large
syphons.

1169
14

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in Case the Connection is establish
by means of a channel, would
not prevent the yearly accum-
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of the Coorum Caused by
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mentioned scheme would b
practicable and fruitf
the intended result. Re
was had to this scheme ch

because the required current can be established without trying to remove the large quantity of sand at the mouth of the river. That the present scheme requires no precautions (except the simple provision of sluices) against the effect of natural forces, is an advantage it has over the scheme of connecting the river with the sea by a channel.

1169/13

The only other plan for cleansing the Coorum that can be thought of, seems to me to be the system of pumping out the water from the river. The chief objection to such a scheme is the heavy annual expenditure on account of establishment &c for carrying it out. The present scheme

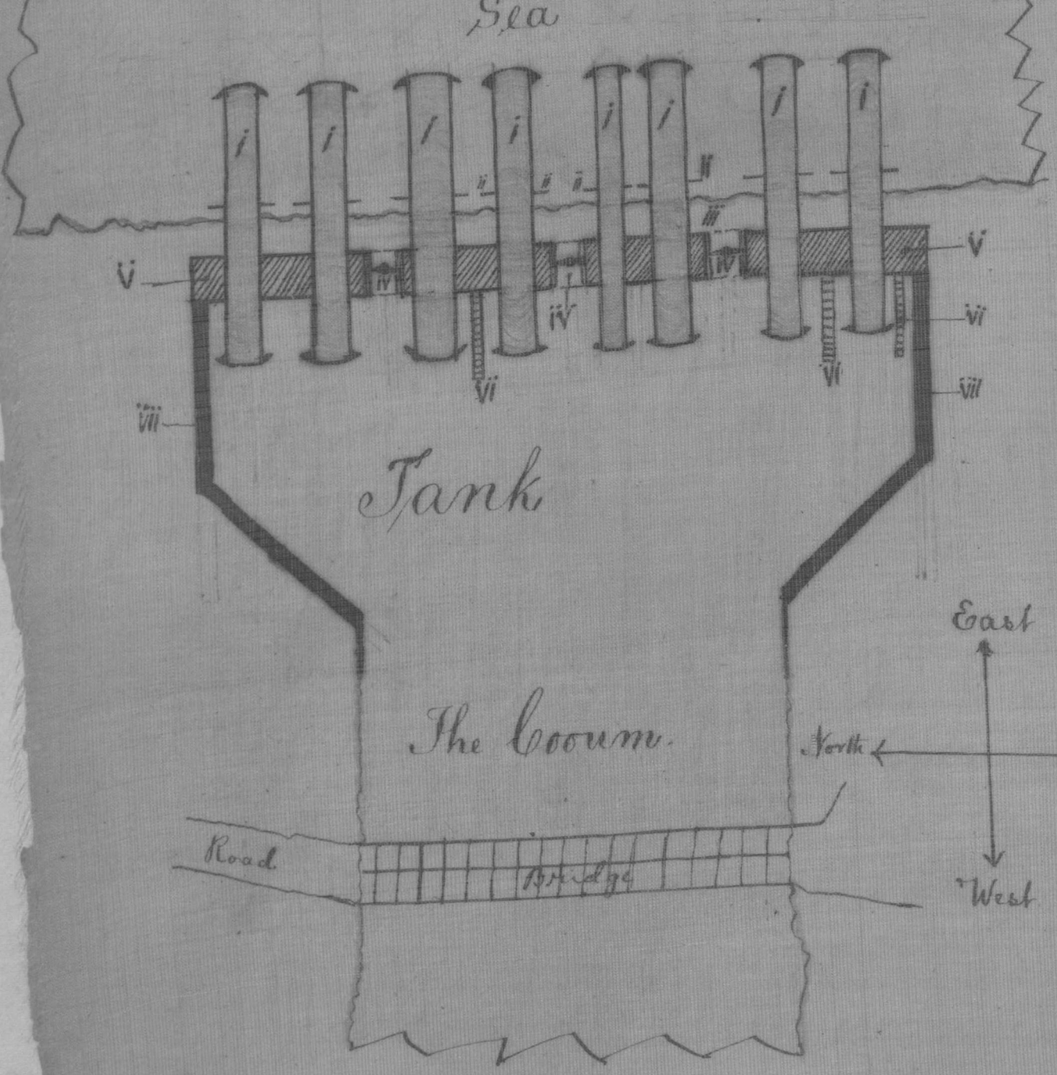
scheme, however, does not entail any annual expenditure in the shape of a large establishment or of repairs.

No 2. Shaik Ali Sahadar street, Perambur Madras 4th April 1893. } Vellal Narayana Menon.

Figure I { Front-view from above of the horizontal siphon of the whole construction }

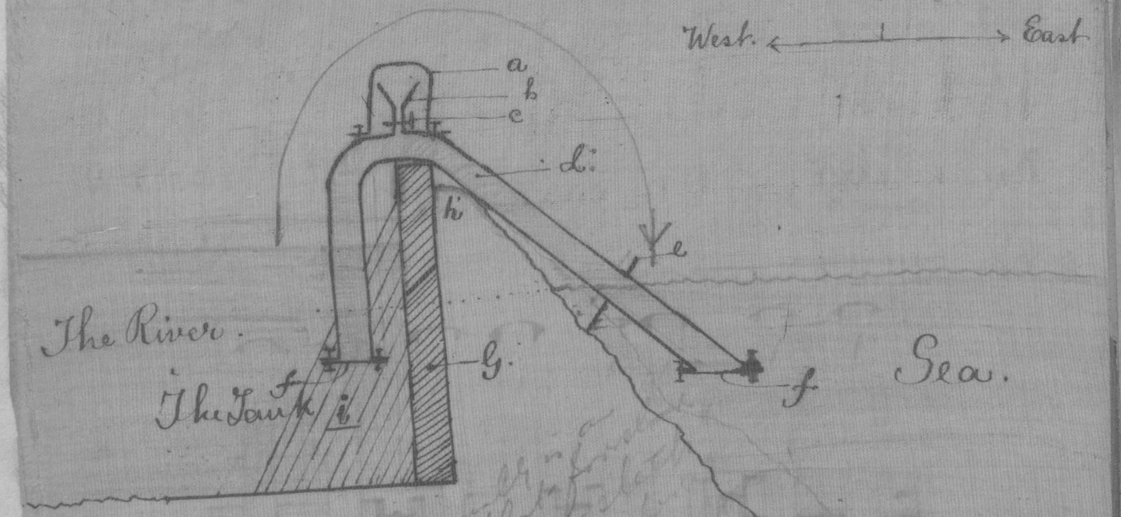
15

i = Siphon
ii = Pillars to support the longer legs of the Siphons.
iii = Sandy portion between the river & the sea
iv Sluices in the wall.
v. The wall which is the eastern bank of the tank
vi Slanting columns for strengthening the wall.
vii Northern & Southern banks of the tank.



Vellat Narayana Menon.

Figure II { Side-view of a ~~horizontal~~ vertical
Section of the Siphon +
the other parts of the construction }



a. The cup-like cover of the funnel.
b The funnel
c The Stopcock.
d Siphon
e Iron pillar
f. Iron plate for temporarily shutting the mo. th of the siphon for filling it with water.
g. The wall or the eastern bank of the tank.
h. Sandy portion between the river & the Sea.
i Slanting column to support the wall.

The sluices and the ~~east~~ northern & southern banks of the tank are not shown in this figure.

Vellat Narayana Menon.

Petition from V. Narayana
Iruvan, Madras.

1169/19

Dated 4 april 1893.

Transferred to the Secretary to Government, Public Works Department, for disposal.

(By Order.)

Keeran
a/ Private Secretary.

Government House,
Friday,
6 april 1893.

P. W. CURRENT No. 3317

Memo No 4624 e 3 5. 11. 92
" 2 e 3 4. 6. 92
" 5270 e 3 25. 11. 92
P. Bus 75 3 w 3 14. 3. 93
Memo No 85 & D 3 10. 5. 93
P. Bus 1349 w 3 15. 8. 93

(1893) DEPARTMENT.

From

THE PRIVATE SECRETARY TO THE
RIGHT HONORABLE THE GOVERNOR,

To

THE SECRETARY TO GOVERNMENT,
Public Works
DEPARTMENT.

Dated 6
Received 7 } April 1893.

ENCLOSURE. 1

Subject.

TRANSFERS a petition from V. Narayana Menon, suggesting certain Schemes for cleaning the Cooum River.

1893
P.W.D.
No. 20
Note — P. 2

With reference to the suggestions made in the accompanying letter and enclosures from Mr Vellal Narayana Menon in connection with the Cooum the following remarks are offered.

The assumption appears to be that the object to be aimed at is getting the water out of the Cooum during the dry months whereas precisely the opposite is what is required. The water of the Cooum is not at fault, it is rather the want of it. The stench from the river arises from the great accumulations in it

of sewage matter,
which are still being
constantly added to;
when those accumulations
are exposed, or the water
is so low that they are
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arises from them the
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which poison the air
of Madras; the water
in the river should there-
fore be kept as high,
not as low, as possible.

2d Mr C. N. Menon's
Syphons though intended
by him for the discharge
of water from the
Cooum into the sea
Could be arranged to
discharge water from
the sea into the Cooum
when the former was
the higher, but this
Could be effected
more cheaply by
simple pipes.

3d It must not

be forgotten that
the admission of Sea
water into the Cooum
is not Considered by
Medical Authorities
to be at all times an
unmixed advantage.
Dr. Cornish, then Surgeon
General, wrote thus in
1870 with reference to
admitting seawater
into the Cooum:-

"The Remedy* suggested
was tried on one occasion
within the Surgeon-Generals
Recollection, but instead
of abating the nuisance
daily increased. On
this occasion (1870) the
sea water was let in
at a time when the
sea was full of Species
of Oscillatoria producing
the phenomenon of
phosphorescence. These
minute Creatures died
by Myriads under the
Changed Conditions of

the

*See para 11 of Mr Jones' report with D.M.G. No 349 M. dated March 1871.

their existence and pro-
duced so fearful a
stench that many
persons having to pass
near the river on 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
remove the offensive
matter."

(4) The truth is that
nothing will much
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affairs except the total
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though it would be
a very expensive, under-
taking the latter can

1167
22
Pl 4

best be accomplished by
the natural forces called
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Of course the removal
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5. I may say that I
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proposals which have been made to purify the Cooum by the action of the tides; their range is so small at Madras that any scour which could be created by their agency would not affect the river for any considerable distance from its mouth and would leave its foulest parts unattacked.

C.E.:W

19/4/93

P. W. Department.

1169/93

19/4/93

Read the following:—

Letter from Pallal Narayana Iyengar. dt 4/4/93

Note by A/ Chief E-in-C 19/4/93

Mr Watkins not here but the party is reply this petition

Wpo
Wapers

FOR ORDERS.

I submit it will be sufficient to merely acknowledge receipt of Mr Narayana Iyengar's letter. It will be for any note placed on record in connection with the Cooum Question on which I have never hesitated to say officially to Govt what I have written in para 4 of my Note. I do not see any reason to enter into correspondence with Mr Coodes, who's report I cannot [illegible] would [illegible] before I retire.

18/4/93

11 & 24

— Note —

With reference to the Observations made in the accompanying letter enclosing form Mr Pollak Harayama Mines in connection with the Concession the following remarks are offered —

1. The observation to be first object to be aimed at is getting the water out of the Concession during the dry months, whereas principally the object is what is required. The water of the Concession is not at fault, it is rather the want of the Steam from the river and so from the Pumping

of sewage matter with which they still keeping constantly added to, when there accumulations are exposed or the water is so low that they are uncovered at low tide, arise from them the foul exhalations with which the air & consequently the water in the river should therefore be kept as low, as pure as possible.

(2) Mr. J. H. Greene's proposal though intended by him for the discharge of water from the Cesspool into the sea could be arranged to discharge water from the sea into the Cesspool, when the former was too low, but this could be effected by more cheaply by simple pipes.

1189/1/8

be forbidden that the admission of sea water into the Cesspool is not considered by medical authorities to be at all times an unmixed advantage. Mr Cornish then Messrs Rendel proposed in 1870 with reference to admitting sea water into the Cesspool

"The remedy + + + the offensive matter"

4 The truth is that bottling will much improve the state of affairs inside the risk total exclusion from the river of all sewage and the removal of that already deposited in it. The former would not be a very difficult &

I formerly colored full from 3 to 6 by "I" with pl. 437 d 22/5/91

+ 3 of course from the Cesspool in connection with it.

it would be a very
expensive undertaking
to alter can be
be accomplished
by natural forces
called into play
when the river is
in heavy flood,
with severe
mechanical
assistance. it may
at the same time
some considerable
time must elapse
before it would
then be accomplished,
but preclude the
sewage from the running into
the Common till
it is certain, before
the lapse of any
year, it cease to
be offensive - of
course the mud
of the sewage accumulation
must be carried
out by dredging or artificial
means. Even but
the effect which

processes would
probably be
abandoned.

5 I may say that
I have no faith
in the proposals
which have been made to purify
the Common
by the action of
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that any power
or that could
be called by their
agency would
not affect the
river for any
considerable distance
from its mouth &
would leave
its foulest parts
untouched -

F.

C No 3317

1169 a

Copy of letter to Capt Pitchers dated 1st March 1869 — Re Simple connection between the two Electric Systems by means of pipes under the River proposed — I ordered that the Contractors had an idea of this work —

The communication should be effected

1169

Duel
7.4.69

1169 a/69

W
BM

Revd 27 April 1893

PUBLIC WORKS DEPARTMENT.

169/98

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

Petition from Vellal Narayana Menon d/4 April 1893.
Note by the Acting Chief Engineer P.W.D. d/ April 1893.

A Copy of the Chief Engineer's Note will be Communicated to Vellal Narayana Menon in reply to his petition

24.4.93

25.4.93

DESPATCHED
12 MAY 93

To
Vellal Narayanan
Coorg. Architect &c
S. E. II Circle.
P. & M. Departt.

40—800-23-3-93.

C.N.o. 3317

Govt. of Madras.
PUBLIC WORKS.



Dated

Rect. Encl.

G.O. 27 dated 1893. No. 1165

Coovum River

=

Note by the Acting Chief Engineer &c. &c. in connection with the purification of the —— communicated to Vellal Narayan Menon.

14954

G.O. 27/4

9.3.93