

(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.	740	Press	<i>Original</i>
~~B.P. No.~~		~~Mis.~~	
Dated	17 - 3 - 195		
			1875

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
17th March 1875*

No. 421.

Read the following papers —

No 83 E

MEMORANDUM

IN submitting, for the information and orders of Government, the accompanying extract from notes of inspection in the Salem District, the Chief Engineer for Irrigation requests the confirmation of the instructions given to the District Engineer to undertake the work therein noticed as urgently requisite for the prevention of further destruction of property at Periapett, a township of Vanimbady, and to employ a Surveyor for the preparation of a survey of the river including the two islands and a mile or two of the bed and banks above and below them

2. It will be requisite for the Government to determine from what funds the present comparatively small outlay, and, if it be considered that the permanent works indicated as necessary should be undertaken, the further much larger outlay, should be met. As far as the undersigned can judge whatever funds may be capable of appropriation for the benefit of towns, aided by a grant under Agricultural Miscellaneous, would seem to be the proper arrangement

CAMP AT VANIMBADI, (Signed) JOHN MULLINS, Lieut-Col, R E,
20th January 1875. Chief Engineer for Irrigation.

Extracts from Notes of Inspection in the Salem District

The freshes of October 1874 were of unusual height, and the result has been, as the Government are aware, the destruction of a large amount of property in houses and valuable cocoanut plantations or garden lands in Vanimbady, Rahimanpett, and the detached township of Periapett. Moreover as regards the latter place particularly the destruction will certainly be continued when the next freshes occur unless immediate measures be taken to avert the danger. Many of the houses destroyed and of those now threatened with destruction were or are fine substantial structures worth a good deal of money. It is not therefore a matter of a cluster of mud huts which might be rebuilt at a small expense in some safer locality, and to provide for which a very small sum would suffice.

The atlas sheet No 78 will enable the following description to be the more readily understood, and there is no larger scale survey at present available the better to exemplify the lamentable effects of the flood, but as one will be needed to enable effective works to be decided upon, the District Engineer has been authorized at once to engage a Surveyor and Lascars, and to lay down upon the Revenue Survey maps the present state of the river

Scale 16 inches to the mile

Nearly two miles above the fort of Vanimbady a channel taking off on the left bank of the main stream will be seen, probably the enlargement of this has been going on for years, but at any rate it is now the largest and deepest branch of the river. Between this and the right branch there is a large island, towards the eastern end of which there is a village marked Rymanpettah, which is really Periapett, Rahmanpett being on the other island. West of Periapett a sharp bend of the river to the northward is shown, and there must have always been a tendency here to cut away towards the south and east. Now the river channel has gone beyond a good alignment, and in so doing has swept away a large part of Periapett and a great extent of cocoanut gardens, and occupies a channel entirely clear, and to the right, of its former bed for much of its course, the bend northwards being now below the town, and this is succeeded by an abrupt bend to the east. The head of the channel passing to the south of this upper island is

greatly silted up, and much of the head of the island has been washed away. Large quantities of water passed down the branch between the two islands, and did a good deal of mischief, below the lower end of the upper island the united waters eroded the right bank greatly in several places at one of which the scarp has been brought close to some houses, and is at no great distance from the Sub-Magistrate's Cutcherry. On the right lower channel to the south-east of Vaniembady there was a three-arch bridge on the road leading from the railway station to the town; this was completely destroyed in the flood of May 1874. Good floorings and a lower apron would have saved it, as undermining from scour was evidently the cause of its fall. With the exception of a few unusually high places, both islands appear to have been submerged by the flood, and it is not to be wondered at that the inhabitants felt their position to be eminently precarious, for with the one bridge gone there were no means of escape left. The evidence of the sad effects of the flood upon property is still very patent, the beds of the rivers being strewn with cocoanut trees in all directions, and the half-washed away houses of Periapett on the river brink, with those dismantled close by to save the roof timber, &c., presenting a scene of great desolation.

The most pressing work to be done is the prevention of further erosion on the south or right bank of the river at Periapett. This can, it is thought, be effectually done if taken in hand at once.

First by laying down at such a distance from the foot of the scarp as will admit of a new slope of 2 to 1 being given to the bank, a line of durbah or nanel grass rollers made in the Tanjore* way,

* See description given in memorandum on use of nanel placed in a regular curve, bedded as low as possible in the sand, and pegged down with long stakes driven 4 or 5 feet into the bed. This line of rollers will form the toe of the slope, the top of which should be so far away from the top edge of the scarped bank as to allow of a regularly and flatly curved alignment. The slope and filling in should then be formed of the best soil available in the neighbourhood, and it must contain a good deal of clay, the filling in to be carried up from the bottom and over the whole width from scarp to face in 4 inch layers watered and well-rammed with heavy rammers, the slope is to be revetted with nanel revetment formed of rolls pegged† down with the long ends placed in the mass of the earth and between

† Small thin pegs 8 or 9 inches long each two layers. Afterwards the facing is to be watered and kept quite moist until it is clothed with a well established crop of growing nanel. As a further security, it will be desirable if practicable to place two more lines of durbah rollers outside the first roller forming the toe of the slope, and similarly staked down, or an apron of rough stone three yards wide and two feet deep would be an effective substitute, if sufficient nanel for the rollers cannot be obtained.

The new bank should extend from the upper end of the small cocoanut tope immediately above this pettah to a point some yards below the last house near the river.

Second a plantation of nanel should be at once formed commencing at a bush on the edge of the right bank at about one-third of a mile above the pettah, starting with a width of say three yards and gradually increasing the width, with a regular and even curve for the outer edge, until opposite the pettah this width will probably be 25 yards at least. This plantation to be carried on in front and beyond the new bank until it reaches a point at which the set of the river has passed to the northwards. There is a shallow stream in the river, and if the nanel be now planted it will probably thrive.

Third for the protection of the nanel plantation and the diminution of the current along the right bank, a set of cocoanut horse groyves (vaganies) should be constructed. Their direction* should be not less obtuse than 135 degrees with the axis of the current which here may be

* Pointing down stream deemed to be parallel with the line of the bank, and their length should be such as to extend to two thirds of the width of the nanel plantation; if placed at 75 yards intervals they will probably be fully effective. It is doubtful whether bamboo thorn fences will be available for fastening upon them, and this is the best material, as the current is by them materially checked, yet not so much so as to cause scour. The Superintending Engineer, Tanjore, should be applied to

for the services of three or four men well acquainted with the work to assist. Cocoanut leaf keets and brushwood will be the best substitutes for bamboo thorns.

It is believed that these simple and comparatively inexpensive works, which the District Engineer has been authorized to proceed with, will prevent any further damage from ordinary high freshes, but for the permanent safety of the towns works of much greater magnitude will be needed, and the details of these cannot be settled until the survey and levels with cross sections of the several branches at about quarter of a mile intervals have been completed. It will be necessary to establish regulating dams, with flood banks in connection therewith, for dividing flood waters approximately in proportion to the present capacity of the several channels into which the river is divided, and for preventing the Periapett branch from becoming year by year larger, and the silting up of the other branches still greater than it now is. As far as the future safety of Vaniembady and its townships is concerned this may with suitable arrangements be much more assured than was the case formerly, seeing that the total capacity of the river waterway has been greatly increased, and if each branch does its full share of the duty of carrying flood waters these will be likely to do much less harm. What is wanted is then—

1st —A proper distribution by means of regulating dams, with embankments to prevent these being turned

2nd —The laying down of a proper alignment for each branch, and the working up to this by means of nanel plantations

3rd —The protection of the river banks throughout by nanel, peykarambu, &c

4th —Probably some permanent groyves

5th —Such embankments as may be found to be requisite to prevent spill from one branch to another in the neighbourhood of the townships or elsewhere

The discharge of the Vepumpett and Natrumpully streams, both of which fall into the Palar right branch below the head of the upper island, will need to be specially taken into account, the freshes in these streams being frequent and sometimes heavy

The inhabitants of Periapett wish this branch of the river to be forced back into its old course, but this is manifestly economically impracticable, seeing that the old channel was one from which the river had naturally a tendency to depart, the limit of reformation here will be the retraction of the channel to the line which is the best for purposes of easy discharge without undue tendency to erosion

(Signed) JOHN MULLINS, Lieut-Colonel, R E,
Chief Engineer for Irrigation

No 422

ORDER THEREON, 17th March 1875, No 740

IRRIGATION, No 27

His EXCELLENCY the Governor in Council approves of and confirms the instructions given by the Chief Engineer

for Irrigation to the District Engineer, Salem, for the immediate execution of the work emergently required for the protection of Periapett from further injury. The District Engineer should lose no time in submitting an estimate for the above work.

2 The survey required for determining the works to be designed for preventing future injury to Periapett and the other townships of Vaniembady should be completed as rapidly as possible, and thereafter the Chief Engineer for Irrigation will in communication with the District Engineer settle what the details are to be, with a view to the early preparation of the plans and estimates.

3 The Government entertain no doubt of their obligation to take prompt and adequate measures for the protection of this important town, but the work is one which cannot properly be charged to Agricultural funds, and these

Proceedings of the Madras Government, Public Works Department,
17th March 1875.

Proceedings will be communicated to the Financial Department for the determination of the source from which the money required is to be obtained. In the meantime current expenditure will be exhibited under "Advances, Miscellaneous Public Improvements."

(True Extract)

Colonel, R.E.,
Secretary to Government.

Palar river
at and near
Vaniembady
18th January.

503
Extract from Notes of inspection in the Salem District

The freshes of October 1874 were of unusual height, and the result has been, as the Government are aware, the destruction of a large amount of property in houses and valuable cocoanut plantations or garden lands in Vaniembady, Rahimanpett and the detached township of Periapett. Moreover, as regards the latter place particularly, the destruction will certainly be continued when the next freshes occur unless immediate measures be taken to avert the danger. Many of the houses destroyed and of those now threatened with destruction were or are fine substantial structures, worth a good deal of money. It is not therefore a matter of a cluster of mud huts which might be rebuilt at a small expense

Proceed

Proceed
mination
meantim
Public In

The above report will be
the satisfaction of the
more suitable and proper, and there is
no longer any survey at present available
while the better to exemplify the lamentable
effects of the flood. but as more
will be needed to enable effective works
to be decided upon, the District Engineer
has been authorized at once to engage
a surveyor and lascars, and to lay
down upon the Revenue Survey Maps
the present state of the river -

Scale 1/6 inches
to the mile

Nearly 2 miles above the fort of Va-
mainbadly a channel taking off on the
left bank of the main stream will be
seen. probably the enlargement of this
has been going on for years, but at
any rate it is now the largest and
deepest branch of the river. Between
this and the right branch there is
a large island, towards the eastern

map

end of which there is a village marked
Rymanpettah, which is really Periapett, the
Rahimanpettah being on the other
island. West of Periapett a sharp bend
of the river to the north ward is shown,
and there must have always been a
tendency ^{here} to cut away towards the South
and East. Now the river channel has
gone beyond a good alignment, and in
so doing has swept away a large part
of Periapett and a great extent of cocoa-
nut gardens, and occupies a channel
entirely clear, and to the right of its
former bed for much of its course, the
bend northwards being now below the
town, and this is succeeded by an
abrupt bend to the east. The head
of the channel passing to the south of
the upper island is greatly silted up,
and much of the head of the island
has been washed away. Large quanti-
ties of water passed down the branch
between the two islands, and did a
good deal of mischief; below the lower
end

end of the upper island the united waters eroded the right bank greatly in several places at one of which the scarp has been brought close to some houses, and is at no great distance from the Sub Magistrate's Cutcherry. On the right lower channel to the South East of Vaniembady there was a 3 arch bridge on the road leading from the railway station to the town: this was completely destroyed in the flood of May 1874. Good floorings and a lower apron would have saved it, as undermining from scours was evidently the cause of its fall. With the exception of a few unusually high places, both islands appear to have been submerged by the flood, and it is not to be wondered at that the inhabitants felt their position to be eminently precarious; for with the bridge gone there was no means of escape left. The evidence of the sad effects

5
effects of the flood upon property is still very patent, the beds of the rivers being strewn with coconut trees in all directions, and the half washed away houses of Periapett on the river bank, with those dismantled close by, ^{and} save the roof timber, ^{are} presenting a scene of great desolation.

The most pressing work to be done is the prevention of further erosion on the South or right bank of the river at Periapett. This can, it is thought, be effectually done, if taken in hand at once—

1st by laying down at such a distance from the foot of the scarp as will admit of a new slope of 2 to 1 being given to the bank, a line of diurbah or manel grass rollers made in the Tanjore way, placed in a regular curve, bedded as low as possible in the sand, and pegged down with long

* See description given in Memo on use of manel.

long stakes driven 4 or 5 feet into the bed. This line of rollers will form the top of the slope the top of which should be so far away from the top edge of the scarped bank as to allow of a regularly and flatter curved alignment. The slope and filling in should then be formed of the best soil available in the neighbourhood, and it must contain a good deal of clay; the filling in to be carried up from the bottom and over the whole width from scarp to face in 4 inch layers watered and well rammed with heavy rammers; the slope is to be revetted with navel revetment formed of rolls of ragged down with the long ends placed in the mass of the earth and between each two layers. Afterwards the facing is to be watered and kept quite moist until it is clothed with a well established crop of growing navel. As a further security it will be desirable

** Small the
logs 8 or 9
inches long*

6
if practicable to place two more lines of durbah rollers outside the first roller forming the top of the slope and similarly staked down, or an apron of rough stone 3 yards wide and 2 feet deep would be an effective substitute, if sufficient navel for the rollers cannot be obtained.

The new bank should extend from the upper end of the small coconut top immediately above the pettah to a point some yards below the last house near the river.

2nd a plantation of navel should be at once formed commencing at a bush on the edge of the right bank at about $\frac{1}{3}$ of a mile above the pettah, starting with a width of say 3 yards and gradually increasing the width with a regular and even curve for the outer edge, until opposite the pettah this width will probably be 25 yards at least. This plantation

to be carried on in front and beyond
the new bank until it reaches a
point at which the set of the river
has passed to the northwards. There
is a shallow stream in the river, and
if the navel be now planted, it will
probably thrive.

3rd For the protection of the navel
plantation and the diminution of
the current along the right bank, a
set of coconut horse groyves (vayaries)

should be constructed. Their direction
should be not less obtuse than 135
degrees with the axis of the current

which here may be deemed to be
parallel with the line of the bank,
and their length should be such as
to extend to two thirds of the width

of the navel plantation - if placed at
75 yards intervals they will probably
be fully effective. It is doubtful
whether bamboo thorn barriers will
be available for fastening upon them.

pointing
down stream

10
and this is the best material, as the
current is by them materially checked,
yet not so much so as to cause scour. The
Superintending Engineer, Tanjore, Indi-
should be applied to for the services
of 3 or 4 men well acquainted with
the work to assist. Coconut leaf-
hedges and brushwood will be the
best substitutes for bamboo thorns.

It is believed that these sim-
ple and comparatively inexpensive
works, which the District Engineer
has been authorized to proceed with,
will prevent any further damage
from ordinary high freshes, but for
the permanent safety of the towns
works of much greater magnitude
will be needed, and the details of
these cannot be settled until the
survey and levels with cross sections
of the several branches at about 4
mile intervals have been completed.

It

to be carried on in front and beyond
the new bank until it reaches a
point at which the set of the river
has passed to the northwards. There
is a shallow stream in the river, and
if the navel be now planted it will
probably thrive.

3rd For the protection of the navel
plantation and the diminution of
the current along the right bank, a
set of coconut horse groynes (vaganies)
should be constructed. Their direction
should be not less obtuse than 135
degrees with the axis of the current
which here may be deemed to be
parallel with the line of the bank,
and their length should be such as
to extend to two thirds of the width.
If the navel plantations - if planted at
75 yards intervals they will probably
be fully effective. It is doubtful
whether bamboo thorn hedges will
be available for fastening upon them,

pointing
down stream

and this is the best material, as the
current is by them materially checked,
yet not so much so as to cause scour.

The Superintending Engineer, Tanjore,
should be applied to for the services
of 3 or 4 men well acquainted with
the work to assist. Coconut leaf-
hedges and brushwood will be the
best substitutes for bamboo thorns.

It is believed that these simple
and comparatively inexpensive
works, which the District Engineer
has been authorized to proceed with,
will prevent any further damage
from ordinary high freshes, but for
the permanent safety of the towns
works of much greater magnitude
will be needed, and the details of
these cannot be settled until the
survey and levels with cross sections
of the several branches at about $\frac{1}{4}$
mile intervals have been completed.

It

It will be necessary to establish regulating dams, with flood banks in connection therewith, for dividing flood waters approximately in proportion to the present capacity of the several channels into which the river is divided, and for preventing the Periapett branch from becoming year by year larger, and the silting up of the other branches still greater than it now is. As far as the future safety of Vaniembady and its townships is concerned this may with suitable arrangements be much more assured than was the case formerly, seeing that the total capacity of the river water way has been greatly increased, and if each branch does its full share of the duty of carrying flood waters these will be likely to do much less harm. What is wanted is then:

- 1st a proper distribution of means of regulating dams, with embankments to

to prevent these being turned.

- 2^d the laying down of a proper alignment for each branch, and the working up to this by means of nanel plantations.
- 3^d the protection of the river banks throughout by nanel, peyharumbu, &c.
- 4th probably some permanent groynes.
- 5th Such embankments as may be found to be requisite to prevent spill from one branch to another in the neighbourhood of the townships or elsewhere.

The discharge of the Vepumpett and Nattrumpully streams, both of which fall into the Pular right branch below the head of the upper island will need to be specially taken into account, the freshes in these streams being frequent and sometimes heavy. The inhabitants of Periapett wish this branch of the river to be forced back into its old course, but this

this is manifestly economically un-
-practicable, seeing that the old
channel was one from which the
river had naturally a tendency to
depart. the limit of reformation
here will be the retraction of the
channel to the line which is the
best for purposes of easy discharge
without undue tendency to erosion

Voluntarismus der Moral
Aufsagen der Moral

P. W. 538/75
1

N^o 83 E.

Memorandum

In submitting for the information and orders of Government the accompanying extracts from Notes of inspection in the Salem District, the Chief Engineer for Irrigation requests the confirmation of the instructions given to the District Engineer to undertake the work therein noticed as urgently requisite for the prevention of further destruction of property at Periapett, a township of Tanjambady, and to employ a Surveyor for the preparation of a survey of the river including the two islands and a mile or two of the bed and banks above and below them.

2. It will be requisite for the Government to determine from what funds this present comparatively small outlay, and, if it be considered that the permanent works indicated as necessary should be undertaken, the further much larger

larger outlay, should be met. As far
as the undersigned can judge whatever
funds may be capable of appropriation
for the benefit of towns, aided by a
grant under Agricultural Miscellaneous,
would seem to be the proper arrangement.

Camp at
Vandimbady
20th January 1875

Voluntaries Land & R.R.
Chief Supt. for Irrigation

To
The Secretary to Government
P. W. D.

Defⁿ 9 10
P. H. Dept

Proceedings of the Madras Government
Read the following

From the Chief Engineer for Irrigation } C.R. No 83 E. d/20 Jan'y/75

His Excellency the Governor in Council approves of and confirms the instructions given by the Chief Engineer for Irrigation to the District Engineer, Salem, for the immediate execution of the work emergently required for the protection of Periapett from further injury. The District Engineer should lose no time in submitting an estimate for the above work.
The survey required for

Md
26/2

None
P. M. 1875 10th Jan

No 83 E
From
The Chief Engineer for Irrigation
To the Secretary to Govt
S. 572

Dated 20th Jan'y 1875
Received 27th 1875
Enclosure 1.

Submits for order on
Exhibit per notes of
action in the Salem District

No 421
S.O. No 140. 17-3-75

Feb 25-2-75
Oct 1-75 1875-2-75

for determining the works
to be designed for preventing
future injury to Periapett
and the other townships of
Vanambady should be com-
pleted as rapidly as possi-
ble, and thereafter the
Chief Engineer for Irrigation
will in communication with
the District Engineer settle
what the details are to be,
with a view to the early
preparation of the plans and
estimates.

3. The Government enter-
tain no doubt of their ob-
ligation to take prompt
and adequate measures
for the protection of this
important town, but the
work is one which cannot
properly be charged to
Agricultural funds, and
these Proceedings will be
communicated to the Financial
Depto

10
Department for the deter-
mination of the source from
which the money required
is to be obtained. In the
mean time, current expendi-
ture will be exhibited
under "Advances, Miscellaneous
Public Improvements".

16/2/50

W. R.

To
The District Engineer Salem ✓
" Chief Engineer for Irrigation ✓
" Controller of P.W. Accounts ✓
" Financial Dept. ✓
" Revenue — — — ✓
" Accountant General Madras ✓

70
Sept 22-3-95

Public Works Department

Letter from the Chief Engineer for Irrigation
No. 83 C. dated 20 January 1895.

For Orders.

For Imperial orders & approved orders with the Atlas
by pedestrians. I am at a loss at sheet mentioned.

Find a great deal of work is not
the town work for the benefit of
the town.

Board of Public Works
might like to see the
minutes - M. Secretary of Government

1/2 I.D.S. he must be confirmed, and the promotion
under suggested should be
sanctioned.

apply for money -
It is State work
to protect life
& property

For

Let us
must have
approximately
estimates
of No. 2.

538 ✓

Govt. of 1875; Madras.

PUBLIC WORKS.

20

Chief Engineer
Salem

Dated

Recd

Encl

G O. 17/2/22 1875, No. 740

Nos. 42/-422

Chapett (Salem Dist)

Approving and confirming
the instructions given by
the Chief Engr for Irrigation
for the immediate execution
of the work emergently re-
quired for the protection of
— from further injury
and, requesting the Dist. Engr.
to submit, at once, an estimate
for the work &c.