

(1) Number of pages 8  
(2) Date of repair 16. 10. 82  
(3) Initials of the Referencer \_\_\_\_\_

# TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

*Revenue* DEPARTMENT

|          |       |          |
|----------|-------|----------|
| G.O. No. | 360   | Press.   |
| B.P. No. |       | Mis.     |
| Dated    | 7. 2. | 1828-197 |

Not to be folded or roughly handled.

360  
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

28th January 1883, No. 82 I.

Irr  
Acc

Read the following paper:—

No. 93. Endorsement of the Chief Engineer for Irrigation, dated Camp at Dowlaishweram, 18th January 1878, No. 16 I.

From J. D. GRANT, Esq., Officiating District Engineer, Tinnevely, to the Chief Engineer for Irrigation, dated Palamcottah 28th December 1877, No. 169.

In paragraph 7 of my letter No. 150, the 11th instant, I stated that I would report more fully on the damage occasioned by the flood of the 6th instant as soon as detailed accounts were received from all parts of the district; but no sooner was I in possession of this information than a second flood occurred on the 18th instant, and it has been necessary for me to defer my report till the result of this second disaster was known.

2. In the face of such a calamity, it is inevitable that there should be something very like a panic among all whose duty it is to report the damage, and it is only now that I feel that the whole truth is known.

3. The flood of the 6th having destroyed everything that was likely to fail, there was of course very slight additional damage occasioned by the flood of the 18th, though it was higher at some places than that of the 6th. At the Palamcottah bridge it reached on the gauge 27.80 against 26.55 on the previous occasion, while at Stretevigundum it was 9 inches lower than the flood of the 6th, and at Shermadevi and up the river exactly the same.

4. The cause of this increased depth of water at Palamcottah was probably that the rain water ran directly into the river unobstructed by the tanks, which on the previous occasion let it off gradually as they breached; at Stretevigundam the breaches in the river banks gave the water means of spreading out and thus decreased the depth on the anicut to 17 feet against 17 feet 9 inches on the 6th instant.

5. The destruction has I regret to say been most serious, and in this report I propose to confine myself to a simple statement of what has happened, leaving the consideration of the necessary remedial measures to be taken up at leisure, when the temporary repairs now in progress are complete, and when there is time calmly to review the data collected.

6. I may here mention that immediately on the occurrence of the flood, I sent orders\* to the Division Officers and Overseers to note the maximum flood level

\* Copy enclosed.  
wherever they went, and your circular No. 83 of 30th October 1877 arriving on the 10th instant, was at once distributed, so that I hope we may now approach the many questions that will require settlement with greater confidence in our data than we have hitherto been able to feel.

## TALUK.

*Murdur Anicut System.*—At the head sluice the water rose to 15½ feet on the gauge, our calculated M.W.L. being 75 and the height in 1874.

Seventy yards in length of the anicut has been carried away, the cost of repairing which will probably be Rupees 5,000.

*Melacal Channel.*—This channel taken off the right bank was breached entirely by the very large amount of surface drainage which flowed into it along its course, and for the discharge of which the present escapes are insufficient.

The cost of repairing the breaches will probably be Rupees 1,500.

The *Sethunganulloor tank* was breached in ten places from the breaching of the Melacal channel, and the cost of its repair will probably amount to Rupees 2,500. The lower tanks dependent on this channel were damaged principally by the breaching of rain-fed tanks above them; the cost of their repairs will be about Rupees 1,500.

*Murdur Keelacal.*—The head sluice of this channel was outflanked, the river passing round to the north of it, and the drainage from the extensive catchment area of the channel caused twelve breaches which will cost to repair Rupees 3,000.

*Streevigundam Periakulam Tank.*—The river breaching its bank above the Streevigundam anicut found its way into these tanks principally into the former which breached in twelve places, the largest is 160 yards long.

In the Peroor tank there are two breaches.

The cost of repairing these two tanks will be Rupees 8,000.

*Streevigundam Anicut Project Works—South Side.*—On the night of the 6th the water rose to 17 feet 9 inches on the floor of the south head sluice, the depth in November 1874 having been 16 feet 8 inches. The sand sluices were open and both head sluices closed, but the surplus water of the tank and the river water found their way round the end of incomplete river bank, rushed across the south channel breaching it in several places but not seriously. The depth of water in rear of the head sluice was 15 feet 10 inches against 12 feet in 1874. The repair of this channel is roughly estimated to cost Rupees 1,000.

*Kadamba Tank.*—The rush of water down the south channel, the surplus of Tenkarai tank and the drainage from its catchment basin breached this tank in three places; the bund at its head sluice and near the Kadianoday calingulah was also carried away. The water now stands 6 inches on the Peroor head sluice floor, so that there is no great danger of loss of the crop. The repair of this tank will cost Rupees 2,000.

*Kadamba Tank Surplus Channel* has had its banks washed away for a distance of 1½ miles; the cost of their restoration will be Rupees 2,000.

*Pooroor Channel* is breached in one place three-eighths of a mile from its head; the cost of its repair will be Rupees 400.

*Ahtur new channel* was breached in several places and silted up as far as the aqueduct by the water of the river entering through breaches in the bank east of Alwar-Tinnevely village. These breaches, &c., will cost to repair Rupees 1,300.

The river bank over the old Ahtur head sluice breached for a length of 300 yards and destroyed 700 yards of the old Ahtur channel, silting it up to the level of the top of aqueduct, and a furlong lower down to a depth of 1½ yards.

Below the aqueduct there is great damage to the channel by breaches in the river bank. The total cost of repairing this channel will be Rupees 6,000.

The *Ahtur small tank* was also breached and will require for repair Rupees 500.

All the other tanks under the South Main Channel are breached more or less and will cost a large sum of money to repair.

*North Side—North Main Channel.*—In addition to the river water which found its way into the channel by four large breaches in the bank above the anicut, a large body of water entered by breaches below the anicut, one close to the head sluice 200

yards long, another at the 5th mile 500 yards near Mungalacurchy village, which is much

long, and a third at the 7th mile

The result of this influx of water is that the channel is breached in many places from the head sluice down to the 10th mile, and for 3 miles is filled with sand to an average depth of 2 yards. The greatest damage occurred between Mungalacurchy village (7th mile) and Siruthundu bridge (10th mile) in which section there are no less than thirty breaches aggregating in length three-fourths of a mile.

At Yeral there is great damage, the Perungolur surplus breached carrying away the bank on each side of the under tunnel for a total length of 1,000 yards, overturning the rear basin of the under tunnel and cracking the body for 12 feet in length.

The total cost of the repairs to the north main channel may be set down at Rupees 15,000.

The *Perungolur Tank Surplus Channel* part for 1½ miles in length, the cost of restoration which has been carried away in great part will be Rupees 4,000.

The *Kerkai Tank* has been very slightly damaged to the extent of perhaps Rupees 200, but it escaped at the expense of applying channel which has disappeared and to reform will cost Rupees 3,000, or for the tank and channel together Rs. 3,200.

*Aroomoogamangulum Tank*, as a matter of course, was breached by the flood of water passing across the main channel at the under tunnel, and its repair will cost Rupees 3,000.

*Paycolum Tank* is uninjured.

*Settacolum Tank* is breached near the Marathony calingulah; the cost of repairs will be but Rupees 200.

*Korumpullam Tank* is breached in three places, all near the north end and Municipality sluice; the total length of the breaches being 148 yards.

Where the breaches occurred the repairs had not been completed and was in good order; the points where danger would naturally have been apprehended did not occur. The water in the tank rose from 7-98 feet on the Ooppar Oday dam

*N.B.*—The dam is 4 feet 1 inch high. in twelve hours, notwithstanding that 20 out of 24 vents were open.

In addition to the actual breaches, the bund has been damaged by the rain which has guttered away the bank throughout its entire length, and, considering the nature of the soil, this is not surprising.

The cost of repairing this tank will be Rupees 5,600.

The *Ooppar Oday embankments* are breached in twenty places and will cost Rupees 2,000 to repair.

The damage to the minor distributaries on the north side may be put down at Rupees 2,500.

Most of the rain-fed tanks in Tenkarai taluk have breached and the closing of their breaches will cost probably Rupees 12,000.

The breaches of the river banks from Murdur anicut to the sea will cost about Rupees 3,000.

The damage to roads will cost probably not less than Rupees 15,000.

The total cost of setting to rights the damage in the Tenkarai taluk will amount in all to Rupees 1,38,000.

## TINNEVELLY TALUK.

*Kodagan Channel System.*—The river at the Kodagan channel rose to a height of 19-50 feet, being 1-50 feet above the level of the shutter platform.

|                   |     |     |        |
|-------------------|-----|-----|--------|
| Calculated M.W.L. | ... | ... | 177-00 |
| Actual M.W.L.     | ... | ... | 178-50 |
| — in 1874         | ... | ... | 173-35 |

The bank at each end of the sluice was washed away and the flood bank was breached, though it was not topped by the flood.

*Kodagan Channel.*—In November this channel bank was breached in six places; while this was under repair of December 6th occurred, re-opened these breaches and increased the number of sixteen; again while repairs had been commenced the second flood of the 18th came upon us, destroyed the small quantity of work done, and produced two fresh breaches. The cost of these repairs will amount in all to Rupees 1,200, which sum includes the cost of repairing the few tanks under this channel which have breached.

*Palim Channel System.*—The water rose to 18.20 feet at the head sluice, our calculated M.W.L. being 17.70 above the floor; above the head sluice the flood bank was breached, the water rising to within 1 foot 6 inches of its top.

Below the head sluice there are all 78 breaches of which 17 are large.

The worst as might be expected is at the point where the Pachiar river crosses and where the bank between the calingulabs has been entirely swept away. It is, I think, fortunate that we have not constructed any masonry work there on the data formerly in our possession, as it inevitably have been too small.

Except the breaches at the head sluice, the other breaches were caused by the immense quantities of surface drainage entered the channel from the large drainage area all along the channel.

It does not appear that any tanks under this channel have been seriously damaged, so that the whole cost of repairs to this system may be put at Rs. 6,500.

*Tinnevely Channel System.*—The flood rose at the head sluice to 150.00, our calculated M.W.L. being 147.75, and M.W.L. observed in 1874, 144.20.

The flood bank has been greatly damaged, but the head sluice has received no injury.

The channel is breached in 23 places by the river water breaking into it, by the water pouring down from breaches in the Kodagan channel, and by the water of the Kuriselcolum Oday. The total cost of repairs to this channel and its tanks will amount to Rupees 3,500.

*Pachiar Irrigation.*—Here some damage has occurred, but comparatively not of any importance; the Poonagoody tank was not breached, but there are breaches in nearly all the minor tanks, the total cost of whose restoration will be about Rs. 2,000.

Throughout the taluq many rain-fed tanks and tanks fed by Chittar river have been breached, and the total cost of restoration of the Irrigation works will be Rupees 15,000.

In addition the cost of repairing the damaged roads will be not less than Rupees 3,000, so that the aggregate cost of repairs in the Tinnevely taluq is estimated at Rupees 18,000.

#### AMBASAMUDRUM TALUQ.

*Cannadian Channel.*—The flood at the head sluice rose to 221.00 M.S.L., 16.00 above the floor, calculated M.W.L. being 223.84; the river there did not find its way into the channel, but owing to the very heavy rainfall and the breaching of the rain-fed tanks the channel was breached in 40 places.

At the junction of the Koriar river, the channel for 300 yards was silted up with sand 9 feet deep, notwithstanding that the sand vents were fully open.

In no case did the river break in, the damage was entirely caused by the volumes of water poured down by the small rains and by the breaching of the numerous rain-fed tanks.

Only three irrigation sluices have been destroyed and a few covering stones of the anicut carried away.

The cost of repairing this channel will be Rupees 2,000.

*Natheyuny Channel.*—This channel has never been systematically repaired, and in the late floods the channel was breached in seven places, water passing completely round the head sluice, which is but slightly injured.

The cost of repairing the damage will amount in all to Rupees 500.

*Codamalalaghien Channels.*—The damage to these channels is slight, the masonry works and tanks are safe, and the total cost of repairs will not exceed Rupees 400.

The greater number of the rain-fed tanks are breached, and many small river channels, but it is needless to particularize them as their names are not known to you.

The roads have suffered very much, the arches of the bridge over the Tambra-poorny at Ambasamudrum are irretrievably damaged and some minor bridges destroyed.

The cost of restoring damages may be taken at Rupees 30,000, of which Rupees 15,000 represents the damage to irrigation works.

*Nanguneri Taluq.*—This unfortunately has suffered from the effect of three severe floods, and in many cases been closed five successive times.

It is needless to detail the tanks which have suffered and few have escaped.

*Nanguneri Periakulam*, recently breached by the people to save the village, and after inspection I am satisfied the precaution was wise. The water rose to 2.00 over the new calingulah, in addition flowed 2 feet deep through three breaches aggregating 100 yards in length.

The *Vallyour large tank* was breached for a length of 50 yards, and the *Vizianarayanam tank* for a length of 20 yards or so.

The *Nanguneri Channel* at Kalkad was most seriously breached and the closed breach was re-opened by the flood of the 18th December.

Roads everywhere are a mere wreck, and the repairs to this taluq will cost at least Rupees 30,000, of which at least Rupees 20,000 will be required for Irrigation works.

The other taluqs of the district suffered much less than those I have mentioned above, but none has entirely closed, and rain-fed tanks everywhere have been breached in large numbers.

I have obtained assistance from neighbouring districts and am closing breaches everywhere as quickly as can be; but in the still greater flood is imminent. I have belief current everywhere that a third flood, Tinnevely and Kodagan channels, the however succeeded in opening the Palim, Murdur channels will be open in four days at most, but the breach in the anicut is still beyond our power to close, as there is 5 feet of water rushing through it.

When the channels are opened, I hope however to get it closed. Mr. Hughes is on the spot and is prepared to close the breach as soon as the water subsides, having palmyrahs, sand-bags, &c., ready.

The *Streevigundam south channel* will be opened in three days, and the north channel as far as Keelpadagai in a week.

After 1st January 1878.

After 1st January 1878.

I have sent Assistant Engineer Mr. Messher to take a section of the flood from Papanassum to the sea, his limited experience and ignorance of the language preventing my employing him otherwise.

I have seen all of the important works, and am satisfied that there is no fear of loss of crop through want of water, unless indeed the predicted flood occurs and destroys all the work we have had so much trouble hitherto to execute.

The total cost of restoring all the damaged works throughout the district as near as can be judged will amount to Rupees 2,50,000, of which Rupees 2,00,000 will be required for Irrigation works.

As the recent flood appears to be in the highest on record, Division Officers and Overseers are requested to note at as many points as possible the height of the water, and the hour at which it attained a maximum.

These points should be so noted that they can be hereafter unmistakably identified and when time permits connected with M.S.L.

At all important anicuts, the height of water flow over should be recorded, and the maximum depth of water that passed over the tanks should be ascertained wherever possible.

As no information on the subject is available, doubtful information, the name of the person who observed the marks should be given, and the thing said to show whether the information is reliable.

So good an opportunity of obtaining reliable information on this subject seldom occurs and it is particularly desired that the present one, and as accuracy is of great importance, the sooner the made the better.

PALAMCOTTAH,  
8th December 1877.

(Signed) J. D. GRANT,  
Offg. District Engineer.

SUBMITTED for the information of the Government in continuation of this office No. 284 I of the 31st ultimo.

Mr. Grant's report is well drawn up and conveys a very good idea of the damage done and of its causes, together with an approximate estimate of the cost of repairs, which is expected to amount to Rs. 1 lakhs for irrigation, and half a lakh for other works.

2. The inspection notes of the tanks towards the end of 1874 indicated the probability of damage to many of the tanks which have suffered. The occurrence of a second flood of such extent in December was an unlooked for aggravation of the difficulties which the earlier flood had caused, but the resulting loss was confined to the washing away of the little work done during the few days' interval.

3. The work to be done to prevent in the future such a wretched waste of money as the greater part of the expenditure to be incurred on repairs will represent, will demand much careful consideration, and for the present work should be confined to that necessary to secure the cultivation and revenue of the current year. Directly this has been accomplished, the District Engineer should set systematically to work to provide for the future safety of individual tanks and connected works.

4. Those parts of the river flood banks which are not affected by land drainage can be restored and improved as soon as the proper top level and section have been determined. The points to be specially attended to are—

1st.—The use of suitable soil so that there may be little or no risk of breaching from leakage.

2nd.—The thorough consolidation of the earthwork and effective junctions with old earthwork.

3rd.—The protection of such parts of the banks as may be exposed to sets and erosive action. Navel requirements will be for this purpose very valuable, and with a good amount of navel beyond will probably generally be sufficient.

The river banks where liable to be threatened in rear must be left as they are until the tanks, channels, &c., above them have been investigated and the requirements of safety ascertained.

It will be seen that a great deal of the damage in the Tenkarai taluq was caused by the river breaching in and out, a prevalent cause of mischief, while the rest was due chiefly to the flood water discharged by rain-fed tanks above, of which large numbers breached.

5. Recommendations for the strengthening already been made, and the undersigned considers that the following additions should be made to the district grants for 1878-79:—

Executive Establishment have the following additions should

|                                        | RS.      |
|----------------------------------------|----------|
| Revenue— (Extensions and Improvements) | 10,000   |
| (Maintenance and Repairs)              | 30,000   |
|                                        | 40,000   |
| Ordinary Agricultural—                 |          |
| Minor New Works                        | 60,000   |
| Repairs                                | 100,000  |
|                                        | 1,60,000 |

or a total of 2 lakhs. This will enable some progress to be made, and probably in six or eight months the estimating for the requirements of the works generally will have made sufficient progress to allow of a proximate idea of the total expenditure that will be required being formed.

6. Care should be taken that no breached tank is restored and improved unless its retention be clearly necessary. The concentration of storage will in some cases be advantageous, and in every way desirable.

(Signed) JOMULLINS, Colonel, R.E.,  
Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

No. 94.

ORDER THEREON, 28th January 78, No. 82 I.

THE Chief Engineer for Irrigation will be for such further transfers\* of funds to Tinnevely under Ordinary

\* In addition to the Rupees 40,000 provided for Agricultural Repairs, as may be necessary, in G.O., No. 44 I, dated 16th January 1878, by utilizing the unexpended grants in the districts.

2. The recommendations made by the Chief Engineer in paragraph 5 of his endorsement are approved, and provision will be made in the Budget for the amounts therein mentioned, the Government of India being specially asked to increase the grant to the extent necessary for this purpose.

3. Work to be done at present to Irrigation works should be confined to such as is required to secure the current season's cultivation and revenue, but as soon as the requirements of particular works and groups works have been ascertained, and the estimates sanctioned, the repairs and improvements therein provided for will have to be proceeded with as rapidly as may be practicable.

(True Extra)

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

To the District Engineer, Tinnevely.  
" Chief Engineer for Irrigation.  
" Public Works Department.  
" Examiner of Public Works Accounts.  
" Revenue Department.

Exd. E. C. Shunker.  
Spare Copies

IRRIGATION  
ACCOUNT.

Govt. of (1878) Madras.  
PUBLIC WORKS.

THE DISTRICT ENGINEER,  
TINNEVELLY.  
&c., &c., &c.

Dated January 28th.

Issued

Recd. 6<sup>th</sup> February. End.

G. O., 28th January 1878, No. 82 L.

JANUARY.

Nos. 93-94.

Floods of December 1877 in the Tinnevely  
District.—Orders on detailed report  
the —

7340  
Comm. to the  
Board of Revenue  
by H. M. S. C.