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MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No. <i>26</i>	Press <i>Original</i>
~~B.P.~~ No.	Mts.
Dated <i>7 - 1 - 1957</i>	<i>1875</i>

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
7th January 1875.*

Read the following papers —

No 50 Proceedings of the Madras Government in the Revenue Department,
dated 24th November 1874, No 1,449.

ABSTRACT—*Relief measures in the Nellore District*—Placing at the disposal of the Collector the sum of Rupees 50,000 for the purpose of satisfying immediate requirements; referring, for consideration in the Public Works Department, the question of embanking the northern side of the Pennair, and observing with satisfaction the energetic efforts made by all officers to aid the sufferers.

No. 999

No. 50A *Note by the Chief Engineer for Irrigation.*

THE embanking of the Pennair from Sungum eastwards on the north or left bank, and on the south side from the flood bank which connects the head sluice of the Nellore tank supply channel with the high ground at the foot of Nursimma-konda will involve difficulties of a formidable description, and I am not at all certain at present whether it will be found to be feasible to confine such a flood as that of October last within embankments.

2. The first thing to be done is to make the best approximation possible to the actual discharge of the river. This will be no doubt a difficult matter, but some conclusion on this point will be essential to a determination of arrangements affording even a probability of success.

3. With the discharge approximately known, it will be practicable to say to what height the water would rise in a similar flood at the anicut when the length of this shall have been extended across the breach behind the north wing wall. In making the calculation the actual water levels above and below should be first taken, and then it should be assumed that the tail water would have been raised as much as the upper water had all the flood passed between the wings. In this manner maximum flood level at the anicut will be determined and actual flood level at Sungum being likewise noted, the surface fall between Sungum and Nellore can be laid down with sufficient accuracy, with such corrections as actual flood level at the gorge at Jennawada may show to be required. Means should be taken to record actual flood levels at as many points as possible between Sungum and the sea, and accurate information will be obtainable, if inquiries be made at once, either from flood marks, or from the evidence of villagers who were on ground or hills which were high enough to make them quite sure of their safety. At Sungum, Jennawada and perhaps at some few other points the villagers were safe, and will be able to give reliable evidence.

4 In the next place, even with embankments of sufficient height, their alignment will require careful consideration. The width of the river varies greatly, and to ensure the stability of the embankments their distance apart should be nearly equal throughout those parts of the river which have a nearly equal fall, and there must be no abrupt bends for flood waters to strike against or erode. Moreover, wherever, from the alignment of the river itself, it is certain or likely that there will always be sets, the points affected will need the protection of revetments.

*Proceedings of the Madras Government, Public Works Department,
7th January 1875.*

5 The outlay involved will certainly be large, and it would be unwise to incur it except upon works which can be relied on in the time of danger. Flood banks which fail just when they are most wanted are a mistake, though I am not prepared to say that it will not be worthwhile to protect this delta from floods of a severity likely to occur three or four times in twenty years, even should it be found impracticable to shut out such floods as that which has just occasioned so much suffering and damage, for these do not take place oftener than about once in twenty-five years.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.
2nd December 1874.

No. 51. ORDER THEREON, 7th January 1875, No 26

IRRIGATION, No 9.

COMMUNICATED to the District Engineer, Nellore, for early consideration of the subject of embanking the Pennair on the north, or left, bank east of Sungum, and of strengthening the south embankments from the high ground near the head sluice of the Nellore tank channel.

2. This project is undoubtedly a difficult one to deal with, but the remarks contained in the foregoing Note by the Chief Engineer for Irrigation will serve to indicate the points to be attended to in collecting the information on which a decision will have to be based.

(True Extract)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, Nellore
.. Chief Engineer for Irrigation
.. Revenue Department

Exd S. T. Austin
Spare Copies

*Proceedings of the Madras Government, Revenue Department,
24th November 1874.*

Read the following letters —

No 129 From G VANSAGNEW, Esq, Collector of Nellore, to C G MASTER, Esq, Acting Secretary to Government, Fort St George, dated Nellore, 3rd November 1874, No 2,531

I HAD the honor to address letters to you on the 27th, 28th, 29th, and 30th ultimo, and the 1st instant, without numbers, and copies of the same were despatched on the above dates to the Board of Revenue

2 Since last writing, I have received a report from the Tahsildar of Atmakur. He was not at Devaroyapally, but at Atmakur when the flood came on. Looking from the hill at Atmakur on Monday, the 26th, he saw one sheet of water from the Vasil tank-bund to Sangam hill, and nothing but the trees to be seen of the villages of Apparowpalem, Vilagudipad, and Kotagotla. Nevertheless, not only the people but the cattle in these villages are said to have escaped

3 The Tahsildar then went to Devaroyapally, and found that, although all retreat was cut off, no life had been lost of human beings or cattle, but most of the houses had collapsed. He describes the walls of the cutcherry as all cracked, and the building in so dangerous a state that he has asked permission,—especially as the officials have no houses to live in,—to vacate the building at once and rent a house for an office at Atmakur, where the new cutcherry building is in rapid progress. I am to-day authorising this step, and I beg that it may be formally sanctioned

4 The Devaroyapally people are panic-stricken, and decline to rebuild their houses on the same site. I think they are right, and will take steps to give them some higher ground. In this, as in other flooded villages, the stores of grain in pits have been destroyed.

5 I have not received full official information yet from the easternmost villages of the northern delta. Mr Plunkett will be through them to-day, but I saw a peon last night, who had just come in from Utukur, one of these villages, and he reported the people and cattle safe, and had heard no rumour of loss of life in other villages thereabouts. This relieves my mind of a great load

6 I have definite reports from the Allur Deputy-Tahsildar of the state of Parlapally and Vidivalur, two villages lying near the Maldevi river, three and six miles east of the Allur road. In the former, he states that ninety-three ryots lost their houses, and that their stored grain and about 500 head of cattle and sheep were also lost, and in the latter 411 houses were destroyed, the people taking shelter (along with numerous snakes) in the trees on the 25th and 26th. He does not mention the cattle

7. He found the people in a deplorable case, and gave them some money for their immediate necessities.

8 Mr Plunkett has started the restoration of the great northern road, which work will afford relief to numbers of people for some time to come, there being but little vestige of the road for several miles

9. Many other villages must have suffered much as the above two have done, and in several I have heard of great loss of cattle.

10 On the whole, the way that our masonry works have stood in all directions is matter for congratulation. The bridges over the Beraperu, the Pyderu, and the Maldevi are all safe, and many other works that one would almost have expected to be

carried away. The large Allur tank is safe; but the Ramanna tank to the north of it is breached apparently by excessive local rain. Fifteen tanks,—some large ones,—in the Kavali Taluq have breached from the same cause. The large Kovur tank is so badly cut up that Mr. Plunkett calculates it would take Rs. 8,000 to close the breaches, and doubts, if even that expenditure would make it a permanently effective work in future. Mr. R. Smith has directed the Range Officer to inspect it as soon as possible. Meanwhile, a ring-bund is under construction.

11. I am very anxious to learn what pecuniary grants may be made for the rebuilding of houses, both in the Municipality and in the villages. Mr. Plunkett has asked for instructions. The Kavali Tahsildar proposes Rs. 5 where the materials have been swept away, and 2½ where the house has merely fallen, and Rs. 1 for huts of Yenadies. He says a thatched house of 2 ankanams (an ankanam is eight square feet) costs Rs. 25, and a tiled one Rs. 50 to build. I think pecuniary aid should be given to really poor people, and it will have to be left to the Collector and his Assistants to decide who fall within that category.

12. I do not think I have mentioned before that the flood maintained its maximum height of 27½ feet at Nellore for ten hours on Monday, the 26th. Mr. R. Smith has good hope of a stone groyne he is throwing out from the northern bank to join the anicut. I have not heard what progress has been made in shutting out the river at Sangam, but work is progressing satisfactorily at all important points on the southern side. If the weather only holds up for a week or two, I think we shall be able to encounter an ordinary flood successfully.

No. 130 From G VANSAGNEW, Esq., Collector of Nellore, to C. G. MASTER, Esq., Acting Secretary to Government, Revenue Department, Fort St. George, dated Nellore, 10th November 1874, No. 2,626

I HAVE not written on the subject of the flood since the 3rd instant. I have now received the Proceedings of Government of the 4th and 6th instant, acknowledging the receipt of all my letters, except the last. I have been waiting, hoping to be able to furnish the Government with complete information regarding all the inundated villages, but I find it will take some time longer before I shall be in a position to do so. To-morrow I will submit some special cases. To-day I have been out till one o'clock, and am too tired to go to office where the papers are, and I merely propose to give the Government a general view of the present state of affairs. Mr. Mackenzie and Captain Christie are quite well again, and the former is now at Kovur north of the river, having relieved Mr. Plunkett who, after a tour through the eastern villages which entailed many physical hardships on him, was thoroughly knocked up. Only six deaths are known to have occurred. It is marvellous how the people managed to save their lives everywhere, for the flood was beyond all experience running from six to twelve feet in height through the villages. Nor is the loss of cattle and sheep nearly so great as might have been expected. Some men and some cattle made extraordinary escapes. One man was carried off and drifted against a high clump of prickly-pear on the verge of the great river itself. He climbed on to the top of the prickly-pear, and stayed there starving for 2½ days.

I saw him this morning, and he is not much the worse. Fifteen head of cattle washed away from a village on the north, found their way alive to the south bank of the river. They were sent into Nellore, and the owner came for them, but there was a bill of Rs. 8 against them for keep and expenses, and the owner who had lost everything had it not to pay. I thought it would be cruel to sell one to cover expenses, and, therefore, ordered the money to be paid on account of Government and made over the cattle to the owner. About sixty villages must have been completely flooded, and the damage and losses are tremendous. Mr. Plunkett writes "It is the same story all round,—houses gone, crops gone, tanks gone, and much arable land silted up and covered over with sand. Some of it is lost altogether, while the rest is not likely to be fit for cultivation again except after some expense, and not for another year or two." I saw the water-mark on the trees this morning on the road north of the river nine and ten feet above the level of the road. Relief in money had to be given to the starving poor people in many villages visited by Mr. Plunkett and the Kavali and Udayagiri Tahsildars and the Ullur Deputy-Tahsildar, but this will not come to a large sum. They had my authority to give it wherever absolutely necessary. I have ordered building materials, including palm-yras, to be given free without delay. Much of the work on the roads and tanks is also of the nature of relief work, for women and children and inefficient men are allowed to work for daily cooly whom the Department Public Works would not ordinarily admit on their works. I mention this particularly at Mr. R. Smith's request, and it is a matter entitling Local and Municipal Funds to consideration in the adjustment of charges. The anicut is now bare to half way between the first and second retaining walls, and, on the whole, it has stood admirably, thanks to the magnificent concrete with which, after much experiment, Mr. Smith had coated the whole apron. There is but one serious breach below the first retaining wall towards the south bank in the precise spot where there was the deepest and most serious breach in 1870. Mr. Smith accepts this as positive proof that the section of the anicut was insufficient, and that the enlargement now necessitates on the north side was essential to the permanent safety of the structure. He is also quite satisfied that the concrete saved the whole from destruction. The erosion of the north bank has quite ceased, and the stone groyne to meet the anicut is progressing so far satisfactorily. This is a matter of great importance in regard to irrigation later on in the season, for, of course, the set of the water is all to the open breach. During the past week every attention has been given to restoring irrigation to the southern delta, and I believe with entire success. If we can keep up the present supply of water, there ought to be no general loss of crop. The breach in the Nellore tank-bund will, I hope, be filled up in time to allow of the tank receiving a fresh supply, should the river fresh, as may be expected, towards the end of the month. The work of shutting out the river where it broke in at Sangam and all along the southern embankment is progressing rapidly, as well as the closing of the breaches in the Kanigiri and Duvur tanks. After what has happened, I beg the Government will issue orders for the immediate undertaking of the northern embankment independent of the rest of the Sangam project in which it has been included. It seems obvious, moreover, that if the river is embanked on the north, and is deprived of the enormous spill it has hitherto had all over the country there, the defences on the south must be very materially increased. It must be remembered that the breach north of

*Proceedings of the Madras Government, Revenue Department,
24th November 1874.*

the amount must have affected the height of water over it. If 6 inches are added on this account, this flood may be set down at 3 feet $4\frac{1}{2}$ inches higher than that of 1852.

P S—An ankanum is not 8 square feet as I accidentally wrote, but 8 square yards

No 131 From G VANSAGNEW, Esq, Collector of Nellore, to C G MASTER, Esq. Acting Secretary to Government, Revenue Department, Fort St George, dated Nellore, 11th November 1874, No. 2,631

I HAVE the honor to acknowledge the receipt of the order of Government, dated 6th instant, No 1,406, and, with reference to paragraph 5 thereof, I beg to submit the following reports showing the loss caused by the flood in certain villages. Similar reports for all the inundated villages have been called for, and, on receipt thereof, a report, giving the details in a tabular form, will be submitted for the consideration and orders of Government

2 Very few persons have yet attempted to rebuild their houses. I have issued orders at once to give the wood materials required, including palmyra trees, free of cost, still I fear many people will not be able to undertake the rebuilding without pecuniary aid. If Government will pass speedy orders in respect to these villages, it will be a guide to me in submitting proposals for the villages to be reported on hereafter

Kavali Tahsildar's report, dated 4th November 1874, on the villages of Kovur, Padugupadu, Potneddipalem, and Patur in the Nellore Taluq

To be returned

Do

Kavali Tahsildar's report, dated 8th November 1874, on Pallapadu and Iskapa-lem in the same taluq

Do

Allur Deputy-Tahsildar's report, dated 7th November 1874, on Utukur in the same taluq

No 132 ORDER THEREON, 24th November 1874, No 1,419.

Miscellaneous

THE Governor in Council resolves to place at the disposal of the Collector of Nellore, without delay, the sum of Rupees 50,000 for the purpose of satisfying immediate requirements in such a mode as Mr VansAgnew may think best. He relies upon the Collector exercising discrimination in its allotment and giving only to such as really require help.

2 The grant of wood free for the rebuilding of houses swept away was quite proper. Every exertion must be made to get the people housed before the next monsoon, and in rebuilding care must be taken that elevated sites should be selected and that sanitary considerations are regarded.

3 As much grain appears to have been lost, work must be found wherever possible for the able-bodied poor, and the sick and aged must be fed

*Proceedings of the Madras Government, Revenue Department,
24th November 1874.*

4 The Collector will bear in mind that the two great objects in view are the relief of the poor and the reconstruction of houses. In reporting on his method of applying the present grant he will state what further measures, if any, he would recommend.

5 The question of immediately embanking the northern side of the Pennair (which involves the strengthening of the southern embankments), irrespective of the Sangam project, will be considered at once in the Public Works Department

6 The renting of a house for an office at Atmakur is sanctioned

7 His Excellency the Governor in Council observes with much satisfaction the energetic efforts which have been, and are still being, made by all officers to aid the sufferers from this great calamity. It is a matter of great congratulation that so little life has been lost.

(True Extract.)

G. Master
Acting Secretary to Government

To the Collector of Nellore.

„ the Board of Revenue

„ the Accountant-General

„ the Public Works Department

„ the Financial Department

Ltd F R Bantleman

50 Oct 1874

1000 *N^o 999*
Note by the Chief Engineer for Brigation

2 The first thing to be done is to make the best approximation possible to the actual discharge of the river. This will be no doubt a difficult matter but some conclusion on this point

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2

Region	Year	Population	Area	Population Density
North America	1990	230,000,000	24,000,000 km ²	9.6/km ²
Europe	1990	510,000,000	10,000,000 km ²	51.0/km ²
Asia	1990	3,200,000,000	44,000,000 km ²	72.7/km ²
Africa	1990	530,000,000	30,000,000 km ²	17.7/km ²
South America	1990	230,000,000	17,000,000 km ²	13.5/km ²
Oceania	1990	30,000,000	10,000,000 km ²	3.0/km ²
World	1990	5,300,000,000	149,000,000 km ²	35.6/km ²

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point will be essential to a determination of arrangements affording even a probability of success.

3 With the discharge approximately known, it will be practicable to say to what height the water would rise in a similar flood. at the ancient when the length of the shall have been extended across the breach behind the North wing wall. In making the calculation the actual water levels above and below should be first taken, and then it should be assumed that the tail water would have been raised as much as the upper water had all the flood passed between the wings. In this manner maximum flood level at the ancient will be determined and

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Camp at  Whimundin St John
2nd December 1874. Chief Engineer for Brighton

To The Secretary to Govt. M.S.

P. H. Dept
Proceedings of the Indian Government.
Read the following:
from Sp. Rep. Dept. (H.R. No. 1449 of 21 Nov. 1874)
The Chief Engineer }
for Immigration } (H.R. No. 999 of 2nd Dec. 1874)
- 20 -

2. This project is undoubtedly a difficult one to deal with, but the remarks

J. M. 1844 Robert
 1800 50 50 for August 15
 1844 99 99
 of
 from
 the Chief Engineer for
 the
 to the Secretary of Govt
 P. M. D.

The Chief Engineer for
the Oregon Navigation
Co. the Secretary of Govt
P. M. B.

of embanking of the Down

Power for the purpose

of protecting the borders

from heavy loads.

Yellow, brown, —

90-269-1-95

2057.

Nov 12-62-76

contained in the
foregoing note by
the Chief Engineer for
Irrigation will serve
to indicate the points
to be attended to
in collecting the
information on which
a decision will have
to be based.

Approved by 3/12/75

To The District Engineer with
5 copies of the original 11496
- Chief Engineer for Irrigation
with 2 copies of A.C. }
- Rev. Dept. ✓

Sep 28/11/75.

7687-7457

Govt. of 1875 Madras.

PUBLIC WORKS.

Mr. Supt. Engr
Hydore

De'td

Recd

Encl

G. O. 7 Jan 1875 No. 25

Nos. 50-51

Pennair Embankment

~~Papers~~ Papers on the
subject of embanking
the Pennair on the north,
or left bank East of Sun-
gum & of strengthening
the South Embankment
from the high ground near
the head sluice on the Kallak-
kank Channel Comd to the
S. Engr. Nellore for early
consideration -