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# MADRAS RECORD OFFICE

## Government of Madras

Public Works DEPARTMENT

| | | |
|---|---|---|
| G.O. No. | 2663 | Press |
| ~~B.P. No.~~ | | Mis. 1874 |
| Dated | 18 - 9 - | 195—. |

***Not to be folded or roughly handled***

*Proceedings of the Madras Government, Public Works Department, 18th September* 1874.

No. 391. Read the following endorsement of the Chief Engineer for Irrigation, dated Ootacamund, 20th August 1874, No. 27 :—

From J. H. LATHAM, Esq., Chief Engineer and Manager of the Madras Irrigation and Canal Company, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Kurnool, 13th August 1874, No. 98.

*July Reports.*

I HAVE the honor to enclose copies of the Upper and Lower Sections Reports, together with my own, for the month of July 1874.

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MADRAS IRRIGATION AND CANAL COMPANY.

*Chief Engineer's Report to accompany Divisional Reports for July* 1874.

THE middle of July has been very wet. The whole month was, as usual, cloudy, healthy, and pleasant ; but the continuous breeze carried the clouds across the country too rapidly for them to fall in rain, until the 12th ; if we except one heavy rain on the fourth, which fell over the Bowanassy and Koonder valleys. During the next fortnight the breeze irregularly yielded, and has since been gentle and light It was during the subsidence that rain fell heavily, in the upper division an average of 10·14 inches, in the lower 9·50, making a general average of 9 82 inches. At Kurnool 7·78 inches only fell, half of it in one night, that of the 19th. The only heavier rainfall recorded for Kurnool in July is for 1871. Last year it was only 1·75.

2. This is the first rain which has well tested the new enlarged calingulahs. These had two feet to three feet flowing over them in the 1st section, and six feet in the 7th. All stood well, and I have not heard of the displacement of a stone. The rain also tested the canal banks by suddenly raising the water from two to three feet in the 1st section, and seven feet in the 7th, making totals of seven and eight feet in the 1st, and nine feet in the 7th. Unfortunately the unwelcome certainty of a liability to vermin holes opening just above the usual surface of the water received some decided confirmation ; two serious leaks occurring in the sixth mile, which the villagers would not turn out to attend to when called upon by the canal bankers during the rain, and which consequently ran for thirteen hours before they were attended to ; also one breach being found in the 21st mile, close to the banker's hut. The man, no doubt, was absent, and his account of it fictitious. It was not in a place that had given trouble before. There was also a leak in the bank at Kaderbagh, which stopped of itself when the water fell. When it is considered that this was all the damage done to the banks of the canal in a length of 180 miles (including the Soonkisala flood banks), it may be safely said that no Engineer in India can call them dangerous banks, without condemning also every road, railway, tanks, canal, bund, rack, and public building in the country. It is admitted that vermin [illegible] banks.

3. The most severe strain on the banks occurred in the 7th section, where three Government tanks burst a few miles above the canal when quite full, and sent their water not only down the ordinary river course but also across country, so as to turn the bank returns and overflow the banks into the canal. This drainage is all designed to be received into the canal which is open to the drainages, and has return bunds to retain the canal water when the rivers are dry. These or the canal bank on the upper side near them had, of course, to breach or be breached, when the water rose behind them. The remaining canal bank, which retains the canal water, was uninjured, though the water rose three feet above the designed full water level. This bank has therefore safely stood a foot more than the two feet test proposed by Government in 1871, and we shall *all* in future be easy about it.

4. In both the above cases Mr. Wilks in the upper division, and Mr. Dumphy in his range or sub-division, have been unremitting in their attention to the canal and irrigation. Mr. Dodson, too, has passed on the ordinary work in his charge as fast as rain would allow.

5. The Deputy Collector of Kurnool has, no less, been working in the Company's cause. He has personally visited the villages north of Nundial, chiefly in the 6th section, which were so obstinately backward last year. The immediate effect has been to induce all to try some irrigation more or less, and the ultimate effect must be a rapid spread of irrigation in these villages. He, as well as the Company's Engineers, regret the delay in sanctioning the new rules, and report much irrigation lost by the delay, and dry crop sown where otherwise wet crop would have been put in; that is unavoidable.

6 It is, as yet, too early to predict the probable cultivation.

KURNOOL,
*11th August* 1874.

(Signed) J. H. LATHAM,
*Chief Engineer and Manager.*

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*Register of Rainfall during the month of July* 1874.

| Month and Date. | Soonkisala. | Kurnool. | Jupaud. | Velapanore. | Ayaloor. | Chintacoonta. | Dhoor. | Adamapilly. |
|---|---|---|---|---|---|---|---|---|
| | I. D. | I. D. | I. D. | I. D. | I. D. | I. D. | I. D. | I. D. |
| 1st July ... ... | ..... | ..... | ..... | ..... | 0 20 | ..... | 0 07 | ..... |
| 2nd ,, ... ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 3rd ,, ... ... | ..... | ..... | ..... | ..... | 1 60 | 0 44 | ..... | ..... |
| 4th ,, ... ... | ..... | ..... | 1 30 | 1 85 | 0 64 | 0 10 | 0 70 | 0 50 |
| 5th ,, ... ... | ..... | 0 18 | ..... | 0 10 | ..... | 0 24 | 0 18 | 0 63 |
| 6th ,, ... ... | ..... | ..... | ..... | ..... | 1 28 | ..... | 1 03 | 0 40 |
| 7th ,, ... ... | ..... | ..... | ..... | ..... | 0 10 | 0 10 | ..... | ..... |
| 8th ,, ... ... | ..... | ..... | ..... | ..... | 0 08 | ..... | ..... | ..... |
| 9th ,, ... ... | ..... | ..... | ..... | ..... | 0 31 | ..... | ..... | 0 50 |
| 10th ,, ... ... | ..... | ..... | ..... | ..... | ..... | 0 21 | ..... | ..... |
| 11th ,, ... ... | ..... | ..... | ..... | 0 55 | 0 10 | 0 13 | 0 06 | ..... |
| 12th ,, ... ... | 0 60 | 0 29 | 1 80 | 1 15 | 0 20 | 0 47 | 0 02 | ..... |
| 13th ,, ... ... | ..... | ..... | 0 20 | 0 10 | 0 10 | 0 51 | 0 48 | ..... |
| 14th ,, ... ... | 0 10 | 0 07 | 1 20 | 0 85 | 0 93 | ..... | 0 05 | 0 45 |
| 15th ,, ... ... | 0 40 | 0 12 | 0 17 | 0 80 | ..... | 0 95 | ..... | 0 40 |
| 16th ,, ... ... | 1 40 | 0 45 | 0 15 | 0 65 | 1 42 | 0 40 | 0 46 | 1 50 |
| 17th ,, ... ... | 0 10 | 0 60 | 0 [illegible] | ..... | 0 07 | ..... | 3 93 | 1 40 |
| 18th ,, ... ... | ..... | ..... | ..... | ..... | ..... | 1 01 | ..... | 0 30 |
| 19th ,, ... ... | 3 80 | 3 32 | 1 [illegible] | 4 55 | 2 95 | 0 89 | 2 58 | 1 30 |
| 20th ,, ... ... | 1 90 | 1 07 | 2 [illegible] | 1 15 | 1 03 | 0 20 | 0 76 | 0 80 |
| 21st ,, ... ... | 0 60 | 0 25 | 20 | 0 15 | 0 35 | 0 09 | 0 04 | ..... |
| 22nd ,, ... ... | ..... | 0 44 | 80 | 0 20 | 0 12 | 0 19 | 0 03 | ..... |
| 23rd ,, ... ... | 0 40 | 0 09 | 0 32 | 0 10 | 0 67 | 0 11 | 0 08 | ..... |
| 24th ,, ... ... | ..... | 0 06 | 0 39 | 0 15 | 0 35 | 0 11 | 0 04 | ..... |
| 25th ,, ... ... | 0 50 | 0 37 | 0 40 | 0 65 | ..... | ..... | ..... | ..... |
| 26th ,, ... ... | ..... | 0 02 | ... | ..... | ..... | ..... | ..... | ..... |
| 27th ,, ... ... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 28th ,, ... ... | ..... | ..... | ..... | ..... | ... | ..... | ..... | ..... |
| 29th ,, ... ... | ..... | ..... | ..... | ..... | 0 15 | ..... | 0 05 | ..... |
| 30th ,, ... ... | ..... | ..... | 0 [illegible] | 0 55 | 0 10 | ..... | ..... | ..... |
| 31st ,, ... ... | ..... | ..... | ... | ..... | ..... | 0 44 | ..... | ..... |
| Total... | 9 30 | 7 78 | 9 92 | 13 55 | 12 75 | 6 59 | 10 51 | 8 23 |

(Signed) A. J. DOBSON,
*Conservancy Engineer, Lower Division.*

(Signed) C. H. WILKS,
*Conservancy Engineer, Upper Division.*

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UPPER SECTIONS.

*Monthly Report for July* 1874.

The rain has been very heavy during a great part of the month especially at Velapanore. The total for the month is as follows:—

| | | |
|---|---|---|
| Soonkisala | ... ... ... ... ... | 9·30 inches. |
| Kurnool | ... ... ... ... ... | 7·78 ,, |
| Jupaud | ... ... ... ... ... | 9·92 ,, |
| Velapanore | ... ... ... ... ... | 13·55 ,, |

2. Early in the month I made a tour through some of the villages in the old 5th section, as it had been determined to put that tract of land into a more complete state as regards efficient



channels and means for preventing damage by rains. The rain however was so constant that I was unable to do much beyond a commencement at Bunnoor, and to determine a site for the bridge over the Cumbalpully sluice outlet. The Amins, however, are all at work with the survey in preparing the village maps for the network of channels designed to supply every individual field. They are frequently delayed by the constant rains and heavy state of the roads and fields. On the 17th I returned to Kurnool.

3. On the morning of the 19th (Sunday) news arrived of a breach, and it was found that a breach averaging 66 feet wide had been made in the bank at 20 miles 54 chains. 3·32 inches of rain had fallen during the night, and raised the water to about six feet in the canal, and although the shutters had been opened at Purthapaud sluices and No. 13 calingulah, the water seems to have found a bad place hitherto unsuspected. The full height of this bank was nearly 30 feet.

4. On Monday (20th) coolies were collected and a dam made across the canal at the most convenient spot below Kurnool. This was necessary to keep up the supply as well as to prevent rain from damaging the repairs. As it had to be made against a head of water, the closing gave some trouble, and it was on this account and on account of the wet state of the breach that work only commenced fairly on Thursday the 23rd. On the following Thursday the 30th it was closed to bed level, and rapidly raised on the two following days, when the dams having been removed water was again let down. It reached the site of the breach on Saturday the 1st August, and passed on to the canal below, after filling up against the new work nearly sixteen feet in depth by the next morning. When not prevented by rain, work was continued night and day; no means were left untried to employ as much labour as could effectively be put on the work. At least one quarter of the earth had to be brought from a distance of three-eighths of a mile, and the rest from an average of more than a furlong.

A thoroughly well puddled slope of the customary width was brought up on the canal slope, and the remaining filling was carefully rammed throughout and brought up in horizontal layers.

5. The heavy rains had so filled the tanks that in the lower part of my section the water subsided very slowly, so that I am in hopes there was *no* failure below. At Kurnool complaints were made of the delay; but, as most of the seed was not sown, and only a portion of the villages ran short, very little loss was occasioned by the failure.

6. Four leaks occurred in the 1st section, but they were all quickly repaired, as well as one at Kaderbagh.

*Distribution.*

The new rules were distributed as soon as they could be obtained, but from the circumstances noted above, no time was left me to attend to them. I am happy to say that the Curnums are sending in applications daily, and in a short time we shall be able to judge of the effect of the change of system, although the delay caused by the breach has been against us.

7. There has been much fever about, but only one of the Overseers has reported sick. In consequence of other urgent work the [illegible] paid until for the 22nd to the 28th. The staff is also very small.

(Signed) C. H. WILKS,
*Conservancy Engineer.*

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LOWER SECTIONS.

*Monthly Report for July* 1874.

I HAVE again to regret that the progress of the works of repair in the Main Canal and Distribution channels has been much retarded by the heavy rainfalls of the month, more especially in the Nundial Taluq, where they caused a succession of floods not equalled since the commencement of the canal works.

2. On the 16th instant the fall of rain must have been very heavy on the hills to the east of the Caulee river; for the Government tanks belonging to the villages of Naranapuran, Thana-

lacheruvu, and Thanalapuram were breached, and their contents rushing down the valley spread over the country until stopped by the canal banks near Jutoor where a tank was formed* until rising above the top of the canal banks it breached them through five gaps, in all 202 feet long, and flowed into the canal.

* Above the upper canal bank.
(Initialed) J. H L.

3. At the same time the nullahs which enter the canal opposite calingulahs Nos. 6 and 6 A were filling that part of the canal until the water rose 9 feet above bed and rushed over their crests 6 feet deep, or to within 9 inches of the crown of the arches, and this although the calingulah crests have been lowered to within 3 feet of bed level and all their sluices were fully open—a severe test of the stability of these works which they stood well.

4. In the meanwhile the river Palar, which is the feeder of the Nundial north tank, had burst its banks and flooded great part of the district, and was headed up at aqueduct No. 20 in the 106th mile until it rose above the parapet wall which is 7½ feet above bed, and flowed into the canal. Part of the Palar river sent a large body of water into the Ayaloor tanks, and the ryots of that village unwilling to lose the crops they had sown in their beds cut their bunds and allowed the water to rush down over the fields until intercepted by the spoil banks of the canal in the 109th mile; it rose in the vagu passing under the canal by culvert No. 20, until the pressure of the head of water greatly endangered the safety of that structure, and also flooded the whole of the Ayaloor bungalow and its compound. In order to avoid the danger of culvert No. 22 being blown up, Mr. Dumphy cut the eastern bank* of the canal just below, and allowed the flood to flow down the canal into the 8th section.

* Or upper.
(Initialed) J. H L.

5. The result of so much water entering the canal, at the Jutoor breaches, at the calingulahs and at Ayaloor, was that the water rose 7 feet above bed, and running down to lock No. 1 in the 118th mile was there headed up until it overtopped the upper gates and filled the lock, and that, although all the discharging sluices in the escape channel just above lock No. 1 were fully open, with some difficulty Mr. Dumphy succeeded in opening the valves of lock No. 1, and let the water pass down into the 9th section.

6. Just above lock No. 2, a new irrigation sluice for the village of Yalloor was being built protected by a ring dam amply strong for the 3 feet of water expected in that part of the canal; but before it rose to 6 feet of course it carried away the dam and partially destroyed the incompleted masonry work, and flowing over the fields below unfortunately injured a large extent of their crops.

7. The river Caulee at Jutoor anicut rose to 15½ feet above the head sluice cill; but, as all these sluices were shut, only a little leakage got into the canal, and all the works of the anicut, head and under sluices, have (as far as we can ascertain at present) received no injury, except a few chains of revetment lately built to protect the opposite bank of the river which has been partially carried away.

8. Throughout the whole of the 7th and 8th sections, which had to stand the severe test of this sudden flood, the only injury done to the masonry works has been the breaking up of part of the flooring at calingulah No. 2* in the 7th section, and the injury to Yalloor sluice† in the 8th section; such a result after such a trial of their stability is, I think, very satisfactory.

* A small inlet drain, 15 feet long on the crest.
(Initialed) J. H. L.

† Under construction.
(Initialed) J. H. L.

In the 8th section the slopes of the cuttings below locks 13 and 15 had been repaired just before the heavy rains of the 16th, and much of the silt taken out and rammed into the gullies was washed down again. At Oopaloor bridge, in the 145th mile, a culvert was building under the western approach; the arch had been keyed in the night before, and the centrings being still in caused the floods to rise until they cut away about one chain of the lower end of the approach, but did no injury to the masonry work. At Rajooly anicut, the water rose to 2 feet above the crest, but I examined all the works there last week, and found no injury done to any of them.

*Proceedings of the Madras Government, Public Works Department,*
18*th September* 1874.

9. In the 9th section no injury has been done to any of the works on the Main Canal, although nearly 4 inches of rain fell on the night of the 16th; but some of the irrigation channels have been slightly injured, and all the works of repair and addition which were in progress on them were greatly delayed by the continuous rainfall. All the repairs to the locks in this section have been completed; also the new sluice in the 179th mile.

*10th Section.*

10. Water was let down this section on the 23rd July, and was at the end of the canal by the 24th. I have kept it about 1 foot deep to avoid silts being washed in; as soon as the ryots ask for water it can be increased in a few hours. The Pennair has been throughout the month rising and falling rapidly; its greatest depth was on the 20th instant, when it rose 12 feet over the head sluice cill, but no injury had been done to any of the works.

*Irrigation.*

11. The commencement of irrigation this season has been delayed by the new rules not being authorized until the 3rd July, but I trust the new system of giving the water tickets through the Village Curnums will work well. In the Cuddapah District we are giving the water tickets through our Overseers and Amins as we did last season, only with the new rates. I have no doubt the total area we shall irrigate this season will be increased very largely; but I doubt whether the income realized will exceed that of this season, owing to the great reduction in the rates for fields irrigated for the first, second, and third seasons.

*Reticulation of Village Maps.*

12. The progress made in this work has not been so good as I had expected, chiefly owing to my Surveyor M. Kistnia having been absent on sick leave from 20th March to the 1st June, and having resigned his appointment on the 15th July, so that he was only at work six weeks since 20th March; but he has completed thirteen villages in Nundial and Sirwell taluqs, included in twenty-three sheets, four of which however were chiefly reticulated by the Chief Engineer when in camp. In Proddatur taluq Mr. F. Griffiths has done five villages, and all the above will be copied as soon as I can lay down on them the reticulation channels and bounds of Company's land.

13. I enclose the rain registers as kept at four stations, the one at Jutoor is not included, as I doubt the accuracy of the observations made by the Tindal there.

14. In conclusion, I wish to say that I think Mr J. O. Dumphy, Assistant Engineer, has shown great energy and judgment in combatting with the difficulties of these floods, although suffering at the time from fever and rheumatism, caused, I believe, by having to live in a damp bungalow, surrounded by a flooded compound.

(Signed) A. J. DODSON,
*Conservancy Engineer.*

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SUBMITTED for the information of Government. It will be noticed with satisfaction that the very heavy rainfall of July did but little damage to the Company's Canal. The water did not rise above full supply level in the 1st Section, Soonkisala to Kurnool, 18 miles, but in the 7th Section it attained to three feet above F.S.L., and it is gratifying to find that this test was successfully stood.

2. The attention of the District Engineer, Kurnool, has been called to the state of the tanks of Naranapuram, Thanalacheruvu, and Thanalapuram, which breached and caused some damage to the canal upper bank in the 7th Section. The cutting of the bunds of the Ayaloor tanks by the ryots in order to save crops in their beds has also been brought to the notice of the District Engineer, by whom, in communication with the Revenue Officers, the matter should be inquired into. It will be necessary to ascertain whether the water in these tanks was above full supply level when the bunds were cut; possibly the crops referred to

were not in the bed proper of the tanks, but just beyond their contours. These and all other tanks above the canal should be provided as soon as possible with adequate surplus weirs.

3. A complete list of all such tanks with the information regarding them required by this office circular No. 63 has also been called for.

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

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No. 392. ORDER THEREON, 18th September 1874, No. 2,663.

IRRIGATION, No. 53.

HIS EXCELLENCY the Governor in Council has read with interest the reports of the Chief Engineer and of the Divisional Officers, Madras Irrigation and Canal Company, for the month of July. The rainfall throughout the country traversed by the canal was remarkably heavy, and it is satisfactory to find that but little damage was sustained, and that the necessary repairs were promptly executed.

2. His Excellency in Council notices with approbation the interest shown by the Deputy Collector Ramachendra Rao in the extension of irrigation.

3. Early attention should be given by the District Engineer to the state of all tanks lying above the canal. It is observed that the Chief Engineer for Irrigation has issued the necessary instructions on this subject.

(True Extract.)

Lieut.-Colonel, R.E.,
*Joint Secretary to Government.*

To the Chief Engineer and Manager of the Madras Irrigation and Canal Company.
„ District Engineer, Kurnool.
„ Chief Engineer for Irrigation.

Exd. E. C. Shunker.

Spare Copies

No 27.

Submitted for the information of Government. It will be noticed with satisfaction that the very heavy rainfall of July did but little damage to the Company's Canal. The water did not rise above full supply level in the 1st Section - Somasila to Kurnool, 18 inches, but in the 7th Section it attained to 3 feet above F.S.L, and it is gratifying to find that this test was successfully stood.

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Colutcamund
20 August 1874

Lieutenant H Holkar.
Chief Engineer for Irrigation
To The Secretary to Govt P.W.D

P. W. 1874 Dept.
Ans: Sent for Report
No: 5516

From

The Chief Engr.
for Irrigation

Dated 20th Augt. } 1874
Recd 2nd Sept. }

C. 2. 627

C. No: 2663. 18-9-74.

Note on the
Report of the work
of the Irrigation & Canal
Company for July 1874.

On 3/1

Public Works Department

Proceedings of the Madras Government

Read the following

From The Chief Engineer & Manager Madras Irrn. & Canal Co. (M.I.C. No. 98 dated 13 Augt. 1874)

Chief Engr. for Irrn. (M.I.C. No. — dated 20th Augt. 1874)

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M. 27/8.

27.8

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Wy. 20/8/74.

Genl.

391-392.

Ltr 24/8/74 Rcd 30/8/74

Lt. Col. Norris will report to the Collector Ramachendra Rao the system of irrigation.

101

34/4

To The Chf Engr & Secy to Govt in P.W.D.
— Dr. Kurnool
— Chief Engr for Irrign
— Revenue Department
S. Capies dispd 25/9/74.
× Disp. 2-8-75.

13c

5516

Govt. of 1874 Madras.

PUBLIC WORKS.

To The Secy. to Govt.

The Chief Engr. Irrigation

& The Secy. to Board

Dated

Read. Encl. 2

G. O. 18 Sept. 1874, No. 2663

Nos. 291-292.

Madras Irrigation and Canal Company.

Passing orders on Note by the Chief Engr for Irrigation on the report of the works of the Company for the months of July 1874.