

(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.	1305.	Press
B.P. No.		Mis.
127.5129.		
Dated	9. 5.	1873.

Not to be folded or roughly handled

Read the following papers:—

No. 127. From Major J. O. HASTED, R. E., District Engineer, Kistna District, to Lieutenant-Colonel J. MULLINS, R. E., Chief Engineer for Irrigation, dated Camp at Masulipatam, 13th March 1873, No. 45:—

With reference to your memorandum No. 117, dated 24th ultimo, I have the honour to report that I gather from the records of this Office, the drainage improvements which were discussed and decided on in December 1870 related to the complete drainage of those portions of the Eastern and Western Deltas which are under the influence of ancient water, and it was proposed to cut out the drainage channels so as to discharge from $\frac{1}{2}$ to 1 inch of rainfall over the whole drainage area in 24 hours.

2. Designs and estimates for drainage works in accordance with this scheme have been prepared for the Western Delta, and submitted with the Western Delta Project. It does not appear that any new drainage works have been sanctioned or undertaken in this delta since December 1870.

3. Designs and estimates for drainage works in the Eastern Delta are now under preparation and will be included in the Eastern Delta Project, the necessary levels for the principal drainages have, I have just been informed, been plotted, and the estimating will be done as early as possible. The only new drainage work undertaken lately in this delta is a cut from the Shovagunga sluice into the tidal creek, near the Fort, Masulipatam; on

Estimate Rupees 21,360, sanctioned in G. O., No. 1,928, of 14th June 1869. this work an expenditure of Rupees 10,574-6-3 has already been incurred.

and I hope that a very considerable part of the work would have been completed by the end of the month, but I now am informed that the work has been much hindered by water. Probably the very wet season we have had has made the excavation of this channel a work of greater difficulty than it would be in an ordinary season, but I know it can only be carried on in the dry weather, and I hope before next monsoon we shall be able to complete it.

4. I am unwilling to offer my own opinion on the points referred to by the Collector and Board of Revenue at present, as the Irrigation season was over before I joined the district. I may state however that I consider the drainages are among the first works of those projected that should be put in hand, as they will undoubtedly benefit existing cultivation and lead to its extension, but even when completed they will go but a little way to prevent such flooding and loss as has occurred from the excessive rainfall in last year.

No. 185.

No. 128. *Note by the Chief Engineer for Irrigation.*

On the receipt of G. O., No. 478, of the 14th February last, the District Engineer, Kistna, was requested to furnish the information called for in the latter part of paragraph 1 of that order, and his reply is now submitted for the information of Government. There is one project intimately connected with drainage which he has omitted to notice, and that is the Budam Project, which was sanctioned in the Order as per margin, and

No. 2,598, dated 31st October 1870. has been partially carried out, but which has made far less progress than was desirable as noticed in G. O., No. 277,

dated 28th January 1873. This estimate, amounting to Rupees 46,420, provides for the removal of a dam across the Toongabudra, which greatly obstructs drainage, and for the supply of the lands dependent on this dam from the ancient channels.

2. I regret that my note of the 8th January last was not considered sufficiently explicit. My memorandum No. 7, of the 11th January 1871, contains a sketch of the delta works generally, and refers to the drainage of nearly every part, with an outline of the works proposed, which was drawn out in consultation with the then Superintending Engineer.

3. The works which of late years have been in progress in the delta are shown in the Progress Report, and it will be noticed that they were originally sanctioned for execution from the ordinary grant, one by one, to meet the more pressing demands on account of irrigation. Subsequently the charge was allowed to be met from Loan Funds, and completion estimates for both sections of the delta were called for, and have ever since been under preparation. The old estimates contained very little provision for drainage works, the completion estimates will provide for a system which is intended to secure the drainage of every part of the delta on a scale somewhat similar to that sanctioned for the Godavery.

4. The pressing need for better drainage has long been recognized, and no doubt much would have been done before this time had a special establishment been employed in the preparation of the completion estimates, or had the staff of the delta been formed and maintained on a suitable scale. Instead, however, of the staff being strengthened, it has of late been reduced, and the inevitable result will be waste of time and money. Neither the planning nor the execution of work can be satisfactorily and efficiently carried on without a sufficient number of competent officers.

5. The completion estimates for the western section of the delta, amounting to Rupees 33,61,200, were received in this office last February, and they are awaiting examination; those of the eastern section are under preparation, but some time will elapse before they are ready, although at the end of 1870 it was supposed that much less time than has since elapsed would have sufficed.

6. It may perhaps be useful to notice here that the waters from two kinds of drainage have to be dealt with. On the northern side of the Eastern Delta the Ellore Canal crosses the drainage from an extensive tract of upland. Similarly, on the west and north of the Western Delta, upland drainage is crossed by the Commamoor Channel. In these cases provision must be made for the passage of all flood waters, except in very extraordinary years indeed, as fast as they come down, and certainly for a greater rainfall than that of 1872. Works, however, of this class will only protect the canals on which they are constructed; they indeed only pass on water to the delta proper, and then it has to be got rid of by outfalls communicating directly or indirectly with the sea. Had the drainage works of the Ellore Canal been perfect, or had the Commamoor Channel been completed as intended, the lands near the Colair on the one side of the delta, and those of the Bapulta Taluq on the other, would not have been in the slightest degree benefited. Again, the delta is cut up into comparatively small areas by the several canals, and the arrangements for the drainage of these individual areas have to be separately

planned. In some cases there is no special difficulty in planning works which will be fairly efficient. In others, I am afraid, a mitigation of the evils hitherto experienced will alone be practicable. In the low lying parts of the several smaller areas water will accumulate and will take time to drain off. So far as the capacity of artificial drains is concerned, it is intended to provide these on a scale which will admit of about $\frac{1}{4}$ ths of an inch of rainfall drainage from the whole area passing off in 24 hours. This may seem a small allowance, but in the first place it will be a very great improvement upon the present condition of the country; secondly, a long time must necessarily elapse before works on this scale can be completed, during which experience will be gained as to what further provision, if any, will be required; while, thirdly, it must not be forgotten that most of the artificial works will have to discharge into the minor rivers and streams, which are themselves liable, after heavy falls of rain, to become full to overflowing, and then the low lying lands are incapable of relief. Inundations in the neighbourhood of the Colair Lake are, I fear, unavoidable; indeed the more efficient drainage intended to be introduced into the Eastern Delta will send water, though to an inappreciable extent, faster into the lake. As far as I am aware the outfall from this great expanse of shallow water by the Oopootairu cannot be much, if at all, improved; the level of the water could be lowered to some extent, and at various times it has been proposed to drain the lake, but in all probability the inconveniences resulting from inundations would then be aggravated, for the lands now permanently submerged would be cultivated, and they would still remain liable to temporary inundations, which would last long enough sometimes to destroy the crops. If I understand paragraph 12 of the Collector's letter that officer proposes to replace a dam across the outlet from the lake, which was removed in order to make this outfall more efficient; if so, it will hardly be advisable to obtain a slight temporary benefit now at the expense of inevitably greater inconveniences hereafter. If with a free outfall the Colair lake rose to so high a level as to occasion extensive inundations, matters will not be improved by partly closing the outfall.

FORT ST. GEORGE,
24th March 1873.

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

No. 129.

ORDER THEREON, 9th May 1873, No. 1,305.

IRRIGATION, No. 7.

THE Government are glad to find that the drainage of the Kistna Delta has been taken up in a comprehensive manner, and it is their desire that, when the completion estimates have been sanctioned, special attention should be given to the pushing forward of the works of this class in preference to works for the extension of irrigation, though much will have also to be done to the latter to secure the objects referred to in the latter

part of paragraph 2 of the Memorandum* by the Chief Engineer for Irrigation of the 11th January 1871, No. 7. The present District Engineer is alive to the necessity for improving the means of drainage, and the Government

* G. O., 10th March 1871, No. 722.

Proceedings of the Madras Government, Public Works Department,
9th May 1873.

will look to him, in communication with the Chief Engineer for Irrigation, so to arrange for each season's expenditure that works having this object in view may make as rapid progress as possible.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

To the District Engineer, Kistna.
" Chief Engineer for Irrigation.
" Revenue Department.

Exd. S. T. Austin.

No 45

District Engineer's Office
Kistna

Camp Masulipatam
13th March 1873.

From

The District Engineer
Kistna District
To The Chief Engineer
for Irrigation

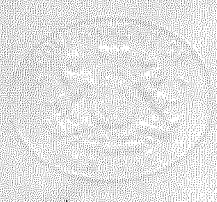
Sir, With reference to your Memo
No 117 dated 24th ultimo, I have the
honor to report that I gather from
the records of this Office, the drainage
improvements which were discussed
and decided on in December 1870, re-
lated to the complete drainage of
those portions of the Eastern and Western
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of ancient water, and it was proposed
to cut out the drainage channels
so as to discharge from $\frac{4}{5}$ to 1 inch
of rain fall over the whole drainage
area in 24 hours.

2. Designs and estimates for
drainage works in accordance

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lead to its extension, but even
when completed they will go
but a little way to prevent
such flooding and loss as has
occurred from the excessive
rainfall in last year.

I have the honor to be
Sir,
Your most obedient servant
John Stobbs Esq. Major R.E.

District Engineer, Madras



No. 185

Note by the Chief Engineer for Irrigation

Enclosure
one

On the receipt of G.O. No. 178 of
the 14th February last, the District
Engineer Krishna was requested to
furnish the information called for
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No. 2598 dated
31 October
1870.

From
The District
Engineer, Madras
To 4.5.1873

To
The Chief Engineer
for Irrigation

Dated 13th March 1873
No. 19

Transmitting certain
information regarding
the drainage of the
to the Chief Engineer
for Irrigation
Madras.



drainage, and for the supply of the lands dependent on this dam from the Ancient Channels.

2. I regret that my note of the 8th January last was not considered sufficiently explicit. My Memorandum of the 11th January 1871, contains a sketch of the Delta works generally, and refers to the drainage of nearly every part, with an outline of the works proposed, which was drawn out in consultation with the then Superintending Engineer.

Recd. Memorandum
Govt. - 10th March
1871 - No 722.

3. The works which of late years have been in progress in the Delta are shown in the Progress Report, and it will be noticed that they were originally sanctioned for execution from the ordinary grant, one by one, to meet the more pressing demands on account of irrigation. Subsequently the charge was allowed to be met from Loan funds, and completion estimates for both sections

of the Delta were called for, and have ever since been under preparation. The old estimates contained very little provision for drainage works; the completion estimates will provide for a system which is intended to secure the drainage of every part of the Delta, on a scale somewhat similar to that sanctioned for the Godavary.

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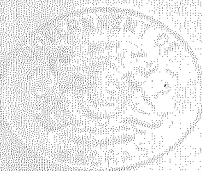
Dec 1871

P. M. 2185/93.

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Small areas by the several canals, and the arrangements for the drainage of these individual areas have to be separately planned. In some cases there is no special difficulty in planning works which will be fairly efficient. In others I am afraid a mitigation of the evils hitherto experienced will alone be practicable. In the low-lying parts of the several smaller areas water will accumulate and will take time to drain off. So far as the capacity of artificial drains is concerned, it is intended to provide these on a scale which will admit of about $\frac{4}{5}$ of an inch of rain fall drainage from the whole area passing off in 24 hours. This may seem a small allowance, but in the first place it will be a ^{very} great improvement upon the present condition of the country, secondly a long time must necessarily elapse before works on this scale

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closing the outfall.

Fort Saint George)
24th March 1873

John Lindley Lieut Col. R. E.
Chief Engineer for Irrigation

To, The Secretary to Government
Public Works Department.

P. W. 1873 Department
Proc of Govt for May
From No 2183

The Chief Engineer for
Irrigation
To The Secretary to Govern-
ment Pub Works
Department

Dated 24th March
Received 4th April 1873

No 185
Enclosure one.

Note on the drain-
age of the Kistna
Delta.

No 1305-9th May/73.

No 3 May
6/4/73

No 128

No 1305 P. W. D.
Proceedings of the Madras Govt.
Read the following:-

From

The Chief Engineer

for Irrigation

(H. E. No 185) 20th Mar/73

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x G.O. 10th March 1871 No. 432

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in view may make
as rapid progress as
possible.

Wm. 3/4/73

G.M.W.

to the District Engineer
" Chief Engineer for Irrigation
" Revenue Department

Recd. 17-5-73.

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1/2 2183.

Gobt. of 1873 Madras.

PUBLIC WORKS.

To the District Commr
Kistna

Dated

Recd.

Encl. 1

G. O. of Secy to Govt. No. 1305

Nos. 127 & 129

Kistna Delta. Paper
orders on Note by the
Chief Secy for Irrigation
in the drainage of
the Kistna Delta.

10-127-29.