

(1) Number of pages _____

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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 2165	Press
456-57	Mis.
Dated 18. 7	1867.

Not to be folded or roughly handled

No. 456. Read the following letter from Captain J. F. FISCHER, Controller of Public Works Accounts, to the Secretary to Government, Public Works Department, dated Madras, 11th July 1867, No. 1,031 :—

1. I have the honour to return the papers which accompanied your Memorandum of the 5th instant, No. 145, and to request you will be good enough to submit the following remarks on irrigation in Bellary for the consideration of His Lordship in Council.

Enclosures 10.

2. Mr. Gordon's operations in surveying the Toongabuddra river project for supplying the plains of that district with water, have fully confirmed those conducted by me in 1858 by the orders of this Government, and it appears now to be admitted on all hands, but without one word of acknowledgment to myself, that, to get the canal out at all, it must be taken by the Nellapore and Devalapur passes towards the Darojee tank ; it is after the line has reached this point, that I consider some deviations must be made from the proposed plan.

3. At present the line is being carried with a very small fall so as to command the Town and Cantonment of Bellary, to secure a somewhat larger area of land for irrigation, and to be partly navigable ; this latter idea had better, for the present at least, be abandoned. One object of the proposed works is to increase the quantity of food in the district and the adjacent territories, not to afford facilities for getting it out of the country to the sea ; doubtless canal or river navigation affords the cheapest mode of conveyance for bulk we possess, but here our object appears to me not to be to get rid of produce, but to secure it in the most economical manner possible ; navigation adds immensely to the cost of the contemplated works in such a country as Bellary, and here in India, where reservoirs must be constructed to maintain its efficiency throughout the year as well as to supply a second crop cultivation, I cannot think it will be advisable to provide for it at such a cost as is now proposed to be incurred, and which threatens to make the project appear impracticable. The next object is to secure a larger area of land by keeping on a higher level, this I also consider entails sacrifices being made not worth the purpose ; the greater portion of the land to be irrigated lies on the right bank of the Huggri, but these papers do not show that any attempt has been made to reach them on any feasible or economical plan ; the line selected from Darojee tank will no doubt find its way into the valley of the Hindree in time, for it is following much the same line I adopted in 1858, and which was rejected for its enormous length, and this I very much fear will be the case with the one now in hand ; I believe, myself, the lands here referred to can be irrigated but in another manner, but the investigation of this requires to be undertaken on other data. As regards the supply of water to the Town and Cantonment of Bellary from the Toongabuddra river, I cannot conceive it will ever be worth while to do so at the proposed cost ; I think it would be far better to abandon the place, and take the station to the canal than drag this up to it at such a price ; besides I have already shown it can be supplied by the local drainages with water, and experience has already in some measure confirmed this opinion, for I had before leaving the place already diverted one large nullah into it, and only the other day General McLeod told me this work had fully answered all the purposes for which we had undertaken

it, and there was no distress now. Government have been pleased to sanction Mr. Porter's revision of the project I had sent in for completing this work, and should this answer the expectations held out for it, the Chuttrum nullah will fill the reservoirs every year, but should these not be realized, it will be only necessary to extend the supply channel towards Courtiny, as I had intended, and secure all the available sources of supply; to me, therefore, it does not appear at all necessary to incur such heavy expenses to overcome a difficulty which it is not essentially necessary to meet.

4. As regards the water-supply in the river itself much certainly does not appear to have been done, notwithstanding that for many years registers had been maintained at Wullabapore and Humpasaugur; in 1858, at the former place, I showed that if one foot only of water passed over the anicut, the discharge of the river was 1,300,000 cubic yards per hour, not taking into account at all the quantities running through the unfinished portion across the Koragul branch, and all the registers agreed in exhibiting that from the beginning of June to the end of November the waters stood above this level with hardly a day's intermission. Again, in 1861-62, Officer of the Department; for those months of the year I took a section of the river, and I then calculated out the greatest and least quantities of water passing down the river for each month, and reported the whole to the Chief Engineer. These records must be forthcoming, and would, if carefully examined, assist very much in solving this difficulty. As far as I can recollect, I came to the conclusion the Toongabuddra during the monsoon season was capable of supplying at least from two and a half to three million cubic yards of water per hour every day.

5. I selected the site for the reservoir at Hospett and had the section taken, and if such works are to be constructed at all for the supply of this district, I am still of opinion this is one of the most favourable places where it could be put up. I do not believe much in reservoirs to be constructed in such hilly tracts as the tributaries of the Toongabuddra flow through: whatever gain there may be in putting up a bund of short length a great deal more is risked in the additional height which has to be given to these works, to obtain a large capacity for storing water in in these narrow and steep valleys, and every yard of lift adds very materially to the cost of such a work. At Hospett all these disadvantages disappear, the river bed immediately above the site has a remarkably small fall in it, even up to the Wurdah confluence; there is solid rock right across it for a foundation, and abundance of materials for constructing the bund and sluices with, and as these latter would form the head of the canal in the bund itself, no subsidiary works are required to convey the stored water to the channel: the valley of the river above is wide and open, hence a good water-spread can be more readily obtained with a moderate height of embankment.

6. The project, as it now stands, is to cost $1\frac{1}{2}$ million of money, and to return a nett profit of 10 per cent., if a very heavy water rate is levied, I am afraid these expectations will never be realized; the old proverb of taking the horse to the water has apparently been lost sight of. As far as my own experience goes I am convinced that not more than Rupees 5 and probably Rupees 4 an acre will not be obtained for many years from the Bellary lands. In 1859, when I had finished sundry

repairs to the Rya Calwah, the ryots agreed to take up all the lands to which we could supply water at Rupees 5 per acre, and this was granted to them by the Revenue authorities: no sooner, however, was it ascertained that the water supply was really good, than an attempt was made to raise the rates of assessment to Rupees 9 per acre, when the ryots at once threw up the cultivation, and I had to seek the intervention of the Revenue Board to have the original compact adhered to before the lands were cultivated. Now, if the ryots of this part of the country, who for ages have been accustomed to irrigation, did not find it sufficiently remunerative to themselves to give more than Rupees 5 per acre for these new lands, to which the water supply was acknowledged to be good, is it probable that the people in the poorer parts of the district, who have for years suffered from the effects of famine and bad seasons, will pay within any reasonable period of time nearly double the above rate? To fix, therefore, the project on such calculations is, I consider, to render the whole scheme futile; there is hardly a chance even after the lapse of years of obtaining anything like the results here contemplated, and as far as I can judge it is not worthwhile investigating the project further on such data.

7. I have made this report as short as I could, and have, therefore, avoided entering into the details of rates and other matters. One or two points, however, which have been omitted, may now be noted: the canal is taken with so small fall the velocity of the water in it will be very little, and it has been observed in other countries that unless a sufficient velocity is given to open channels to keep the water fresh, people in its vicinity suffer in health. I observe it is alleged navigation is not contemplated, but the idea of connecting these works with those in Kurnool for navigation has never been abandoned, or why adopt so low a velocity which entails so much expense. Next, as regards population to cultivate a large area of land, very little information appears to be available or to have been gathered; comparing the existing population of the irrigated talooks of Tanjore and the Godavary with those in the talooks proposed to be irrigated in Bellary, it would appear there is a great deficiency in these, and with the high rates of assessment proposed to be levied to make the project pay, it is not very likely people will be eager to come to the place to take up the land. I have already, on a former occasion, submitted my opinions regarding reservoirs on rivers running through black cotton plains, such as the Huggri and Hindree, and I see no reason now for altering these. With reference to the quantity of water required for irrigating an acre of land, I would beg to observe the nature of the soil requires to be taken into consideration in determining this: for Bellary the quantities discharged by some of the Toongabuddra channels in any of the past years, and used on the lands under them, if carefully calculated out, might afford some data; but in this district the water was so scandalously wasted, and the agricultural operations carried on in so lax a manner by watering all the land at once, and maintaining this supply during the whole time a crop was down, the seed was, and is, I believe, now thrown broad-cast over the whole area, and the plants thinned afterwards, instead of being grown in beds and then transplanted, the demand made upon the supplies of water became quite extravagant, and had to be checked before any improvements in the work themselves could be effected. In any large system of works, therefore, for this district, this matter will require a good deal of attention.

Proceedings of the Madras Government, Public Works Department.
18th July 1867.

No. 457.

ORDER THEREON, 18th July 1867, No. 2,165.

IRRIGATION, No. 27.

The Government are much obliged
to Captain Fischer for his remarks on
"Irrigation in Bellary," which will
be taken into consideration in connection with the Upper Bellary Project.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To Captain Fischer, s. e.

Exd. S. T. Augustin:

N^o 1031.

Office of the Controller of
P. W. Accounts
Madras 11th July 1867.

From
The Controller of P. W. Accounts
To The Secretary to Government
Public Works Department

Sir, I have the honor to return the
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Daraja tank: it is after the line has reached this point that I consider some deviations must be made from the proposed plan.

3. At present the line is being carried with a very small fall so as to command the town and Cantonment of Bellary to secure a somewhat larger area of land for irrigation, and to be partly navigable: this latter idea had better, for the present at least, be abandoned. One object of the proposed works is to increase the quantity of food in the District and the adjacent territories, not to afford facilities for getting it out of the country to the sea, doubtless the cheapest mode of conveyance for bulk we possess, but here our object appears to me, not to be, to get rid of produce but to secure it in the most economical manner possible: navigation adds immensely to the cost of the contemplated works in such a country as Bellary and here in India where reservoirs must be constructed to maintain its efficiency throughout the year as

well as to supply a 2^d crop. cultivation, I cannot think it will be advisable to provide for it at such a cost as is now proposed to be incurred and which threatens to make the project appear impracticable. The next object is to secure a larger area of land, by keeping on a higher level, this I also consider, entails sacrifices being made not worth the purpose, the greater portion of the land to be irrigated lies on the right bank of the Tunggri, but these papers do not show that any attempt has been made to reach them on any feasible or economical plan, the line selected from Daraja tank will no doubt find its way into the valley of the Tunggri in time, for it is following much the same line I adopted in 1858 and which was rejected for its enormous length, and this I very much fear will be the case with the one now in hand; I believe myself the lands here referred to can be irrigated, but in another manner but the investigation of this requires to be undertaken on other data. As

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5. I selected the site for the reservoir at Woxpeth, and had the section taken, and if such works are to be constructed at all for the supply of this District I am still of opinion this is one of the most favorable places where it could be put up. I do not believe much in reservoirs to be constructed in such hilly tracts as the tributaries of the Soongabuddra flow through: whatever gain there may be in

in putting up a bund of short length a great deal more is risked in the additional height which has to be given to these works to obtain a large capacity for storing water in in these narrow and steep valleys and every yard of lift adds very materially to the cost of such a work. At Woxpeth all these disadvantages disappear, the river bed immediately above the site has a remarkably small fall in it even up to the Wurdah confluence, there is solid rock right across it for a foundation and abundance of materials for constructing the bund and sluices with, and as these latter would form the head of the Canal in the bund itself no subsidiary works are required to convey the stored water to the channel: the valley of the river above is wide and open hence a good water spread can be more readily obtained with a moderate height of embankment.

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135
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for this District this matter
will require a good deal of
attention.

I have the honor to be,
Sir

Your most obedt servant

Wm. H. Richd. Captain R.E.

Controller of P.W. Accounts.

2165
No. 2165

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 18th July 1867

Read the following

From the Controller of P.W. Accounts (Here enter No. 103/dated 11th July 67)

The Government
are much obliged to
Captain Fischer for
his remarks on "pro-
-gation in Bellary",
which will be taken
into consideration in
connection with the
Upper Bellary Project.

To
Captain Fischer
R. C. ✓

Sept 19/76

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W.H.

To the Controller of P.W. Accounts.

The Controller of P.W. Accounts.
He is hereby to
be informed that
the P.W. Accounts
for the year 1866-67
are now ready for
audit.

Dated 11th July 1867.

No. 1031.

Submitted this
Remains on migration
in Bellary for the
consideration of the
Board of the Governor
in Council.

No. 2165-18th July 1867

No. 155

155 July 1867 A.L. 1872

Pub: Works 1867 Department

Pro: of Govt. for July

No. 2165

Pro: of the Madras Govt.

D^d 18th July 1867

Thanking Captain,
Fischer R. E. for his remarks
on Irrigation Works in Bellary
and intimating that they will
be taken into consideration in
connection with the Upper
Bellary Project.

No. 456-457

5th July 1867. A. 15th

145-6 May 1867
Pub. Works 1867 Depart.

Pro: of Govt. for July

No. 2165

Pro: of the Madras Govt.

D^y 18th July 1867

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