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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

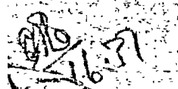
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G.O. No. 655 Press Mis.

1-3

Dated 8 4 1857

Not to be folded or roughly handled



Fort Saint George, Public Works Consultation of 21st April 1857.

Read the following.

No. 1. Extract from the Proceedings of the Acting Superintending Engineer, Northern Circle, in charge of the Central office of Public Works, dated 11th February 1857, No. 10200.

Read the following letter from Captain G. C. COLLYER, Superintending Engineer, Central Circle; to Colonel C. E. FABER, Chief Engineer, dated Hospett, 27th January 1857, No. 10.

SIR,

In continuation of my letter No. 9, dated 22nd Instant, I have the honor to report my arrival at Hospett.

2. I marched from Bellary to Camlapore by the road leading above the Darojee tank by Gaddaganore and Parpenaikenpolliem, that I might examine one of the valleys through which it seems to have been imagined that a Canal might be cut from some place on the Toombuddra, to water a portion of the Bellary District, and I went to Camlapore to examine the other supposed to be practicable valleys, and the existing Toombuddra channels.

3. I have had the advantage of the main facts established by Lieutenant Tyrrell's levels to assist me in my examinations, but I have not seen his report; I have read Colonel A. Cotton's letter, suggesting the project of a navigable and irrigation Canal in the Bellary District; Captain Walker's report in a letter No. 467, dated 16th October 1855 and also Major Lawford's in the 2nd vol. of the Engineer Transactions.

4. It may here be as well to state that Colonel Cotton in his letter merely outlines a project which had suggested itself to him from an examination of the maps of the country.

5. I read Colonel Cotton's letter as a mere suggestion, and its practicability depends upon the method of its being carried out. If as Captain Walker seems to suggest it should be carried out in all the integrity of its requirements from Wallabapore, it is simply financially impracticable; but if a modification of the scheme, viz. a navigable Canal from the Wurdah to Ramsagur, and a navigable and irrigation channel thence crossing the Huggry some-where near Vulloor be cut; the project is I believe perfectly feasible.

6. Captain Walker in his letter above alluded to fixes upon certain points as starting points; first, the confluence of the Wurdah with the Toombuddra so as to gain the valley of the Nareehully at the western gorge by which it intersects the Ramanmully range, then a project of Colonel Henderson's starting from above Hurryhur, but both of these are, he shews, utterly impracticable from the great height of the lowest saddle above the point selected.

7. He next assumes Wullabapore on the Toombuddra as the starting point, and Yaparal on the Huggry as the place at which that river should be crossed; and from which the channel could be taken into the Pennair across the ridge dividing that river from the Huggry at some place between Gundakul and Koloor; he points out that the difficulties of soil &c. are great, especially between Camlapore and Darojee.

8. Assuming Wullabapore as the starting point, a line was traced by Hospett, Wudderhully and Goodaganore, but it was found to be quite impracticable; the lowest saddle of the valley at Wudderhully being 190 feet above datum; another line has been tried by Cunnavay, Timmapore, I have examined the valleys between Gundlekerry, Venkatapore, Booksagra and Cunnavay, Timmapore, the valleys are shut up with rock, tossed into every imaginable state of confusion above ground; and below, it is for the most part solid granite; to make even a small navigable channel would I believe cost lacs of Rupees between these places, and there is an abrupt fall from Cunnavay, Timmapore saddle into the plains; the fall being represented as 69 feet in about 1½ miles, this might of course be overcome by locking down it, but a large irrigation drain thence would be starved of water and from the fact of the ground being again still higher at Davasundra, the channel would be forced down a little to the north of that place.

I. Resolved that Office

9. On the supposition that these insurmountable obstacles were not in existence, the entire ground between Camlapore, Kalacutta, Ramsagur annicut and Timmapore, Cunnavay is a complete sea of rock, confusion worse confounded and the land capable of cultivation is already entirely cultivated by the Toortcalwah which taken off the Toombuddra at Kaliguttah twists in every conceivable contortion through the rocks and ruins of Humpy and going past Vencatapore and below Booksagra falls into the Ramsagur channel near its entrance.

10. I have in company with Lieutenant Fisher examined the valleys above mentioned. I have examined the Ramsagur channel at its head; I have walked up the Toort channel to Kalyguttah, I have examined the Gunlekerry; the land between it and Camlapore tank and thence to Hospett. I have had levels taken from Booksagur to Camlapore: and I have ascertained that a channel may be cut from a short distance above Hospett into Camlapore, a continuation in fact of the Buswanah channel and there is a ruined channel from the Moodulcutta annicut which according to Lieutenant Blagrave's levels (see Captain Walker's Report in a letter No. 467, dated 16th October 1855,) crosses the Chinna Huggry about Timburhully and may eventually be led into the *Buswanah channel.

* It will be taken above it.

11. I was not aware of this till it was brought to my notice by Lieutenant Fisher, and I agree with him in thinking that Moodulcotta, or perhaps some place between it and the confluence of the Wurdah and Toombuddra should be the point fixed for the commencement of a navigable Canal eastward and which may be carried out as follows; a navigable Canal with a width of 12 yards to be taken from Moodulcotta or from the junction of the Toongabudra and Wurdah rivers to go eastward, above Calvay, near Bussapore, Humpsagur and Timbechully, above Bellahoonshy into the Baswanah Calvay near Bennakpore then by Hurralyhully and Bussapore to Hospett thence by Anvantaseyana tank below the Pagoda and then across towards Inglegy and into the Camlapore tank, the bank of this tank requires to be raised, it has above 1½ miles of superficies and if raised to hold 5 yards deeper of water, will contain 22½ millions additional cubic yards of water, from Camlapore tank thus raised there will be a maximum cutting of 30 feet for a distance of about 800 yards, which will lead into the Gundiakerry tank, which must be restored and locked down into; and from it again locks must be used to get down to the level of Venkatapore, thence the channel will be taken into the Ramsagur channel. It is at this place that the river can first command the plains and it is from this site I would propose to cut the grand irrigation and navigation channel which will it is believed going due east by Nelloody and Kuddaguttah cross the Chinna Huggry near Vulloor.

12. This 12 yards irrigation channel as above sketched out would be as the crow-flies about 48 miles i. e. from Moodulcotta.

13. The first section of the Canal from Moodulcotta to Wullabapore may command 15 square miles of cultivable land, rejecting 10 as rocky and 5 as uncultivable from salt, &c. and from other causes or 7,500 acres which at 9 Rupees would give 67,500 Rupees under the 9 existing channels, the rates are from 9 to 25 Rupees an acre.

14. The revenue under the Buswanah Calvah is 703 acres yielding 11,120 Rupees, but only 540 are ever cultivated, leaving 163 bunger. It is calculated that there may be 250 acres between Hospett and Camlapore, which would at the same rate yield Rupees 2,250; under the Camlapore channel and tank there are 801 acres of land bunger, but though this comes in as part of the navigation and forms a reservoir for lockage, its irrigation supply is provided from another source. Between Camlapore and Goondlekerry there will probably be 100 acres of cultivable land yelding 900 Rupees and between Venkatapore, Booksagra and Ramsagur 300, which will however be provided with water from the Toort Calwah.

15. The other source of supply to these lands is the Toombuddra itself from which channels held up by annicuts are cut to these lands, which must be preserved and put into proper order and upon which I shall write a separate report.

16. I propose to limit the channel to 12 yards in width with a fall of 6 inches a mile, and to be kept at that by locks, the depth of water to be 4' 6" on lock sills. The slopes of the sides must be regulated by the nature of the soil, probably they will along the 48½ miles now under consideration not average more than an angle of 45° degrees, and the excavated earth must be used to form a good road.

17. The irrigation sluices will be so regulated that there shall be as few as possible and of a construction that will permit the regulation of the efflux of water.

18. From Moodulcotta to Anantasagara, and just above Camlapore the channel in addition to its water for navigation must carry enough to irrigate about 9,000 acres. This however must have the confirmation of the Collector and the investigation of the District Engineer, who must determine from actual examination of the soil, whether the water for irrigation should be carried by an additional width of channel or by an additional depth.

19. Before proceeding further with my remarks, I may here observe that the total Ayacut of the Toombuddra channels commencing with Wallabapore and ending with the Toort Calvah is 5,191 acres, it is believed that, that there may possibly be 1,000 acres of convertible poonjah under these channels giving a total 6,000 acres, to this add the 9,000 I have above alluded to and a total of 15,000, is all that is likely to be capable of being by any possibility cultivated between Moodulcottah and Ramsagur, and I think this fact alone is enough to limit the channel to a canal of navigation and irrigation for the above lands and not to cut a large channel to irrigate the plains north of Timmapore and Devasundra south of which there is no possibility of reaching; even as it is, the channel is forced very close to the river at Ramsagur literally within 200 yards of it, and it will be necessary either to blast off 60 or 80 yards of the projecting spur at Z or place the annicut below it.

20. It has I believe been proposed to use the river between Wallabapore and the Wurdah as part of the navigation, but to this I object; up to Ramasarabunda it is rocky below Moodulcottah, there is a rapid but even were it not so, it seems to me to be a more satisfactory and economical plan to take the navigation at once out of such a river as this, and I believe eventually Lieutenant Fisher will find it better to start from the confluence of the Wurdah as it is rocky, up to that place from Moodulcottah.

21. Before finally dismissing the discussion as to the line of channel now proposed and its proximity to the river; it must be pointed out that though there are no mountains between Moodulcottah and Bellahoonshy yet the land is so high that the channel is forced down as stated in para. 8 and that it is taken on as high a level as the features of the country will permit. The same observation holds good with reference to the country on the left bank of the river; channels will be forced down there, as here, by Honoormullay by Soovapoorum and by Sevapoor; Singoogoondahbeing the first spot at which there is any chance of a channel of magnitude being taken off, a channel from which commands Juntakaloor crossing an affluent of the Toombuddra above Hebbal.

22. Major Lawford considers the drainage area of the Toombuddra as 7,000 square miles before it reaches Wallabapore, and estimates the annual average fall of rain at 48 inches; this Captain Walker considers as too much and gives 36 inches as the fall, but increases the area to 12,000 square miles a mean of the two will give 9,500 miles, he considers 36 inches as an overrated fall of rain per annum and takes 24 inches as the water supply; he then states that he believes the supply amounts to 2,828,850 cubic yards per hour if equally distributed over the whole year. This distribution is to be made by the construction of reservoirs; being unacquainted with the country west of the Chinna Huggry, I am of course unable to say where reservoirs to be fed by the Toombuddra or Wurdah can be constructed; but below this none can be constructed and supplied by the river, between Bellahoonshy and Ramsagur of sufficient magnitude materially to affect the District; though some considerable tanks could be constructed and existing ones improved between Moodulcottah and Hospett; nor do I think that any reservoir of importance I mean of sufficient importance to bear upon the question can be constructed in the valleys formed by the northern spurs of the Roman Mullays.

23. I am of opinion however that below Ramsagur tanks may be constructed, existing tanks improved, and the irrigation carried on during the months of January, February, March

and April. When the river is comparatively without supply, I say comparatively for the river is never totally dry in the driest season ever known, there is not less than two feet of water in depth and 100 yards in breadth flowing past Humpsagur and for 8 months of the year the annicuts are more or less overtopped; this being the case as shewn from the registers taken at the Wullabapore standard pillar since 1846, I think that the question of reservoirs need not for the present be taken much into account, there is sufficient water for 8 months for all the requirements of a canal as above proposed and there is sufficient for the remaining 4 months to keep up the navigation.

24. In the present state of the examinations and in the absence of complete levels, sections &c. it is quiet impossible to give any thing but a rough idea of the cost of the 48 miles of navigation and irrigation channel between Moodulcottah and Ramsagur, a distance of say 60 miles but taking the section of the canal at 14+3= 42 yards at 2 annas a running yard and allowing for rock &c. it will not cost less than

	Rs.
A mile, for earth work 60 miles at 11,000 a mile	11,000
For locks, 12 locks at 12,000 Rupees each	6,60,000
For annicut 90,000	1,11,000
Aqueduct across Chinna Huggry	90,000
30 Irrigation sluices each 150	23,000
Camlapore tank	4,500
Gundlykerra	23,000
Masonry falls 12 at 1,500	20,000
	18,000
	9,97,500
Superintendence and Contingencies	99,250
	10,96,750

I must not be considered as committing myself to that sum as the cost, I send it as some sort of guide to the probable expenditure.

25. The profits to be realized from this section of the project are in the first place 8,000 acres of land at 9 Rupees equal to Rupees 72,002+ the actual traffic on the road and all that is to be realized by the connection of the plains to be irrigated from Ramsagur with the Western Coast.

26. The report upon this latter part of the project must be delayed till I am in possession of levels which I have requested Mr. Fisher to have taken.

27. I hope to be able to report further upon the Darojee tank and upon a proposal for conveying water thence to Bellary or at least as far in that direction as the water supply will justify the construction of a channel. The area draining into it is about 250 square miles so that an immense body of water is annually lost.

I shall forward a report upon the Toombuddra channels in a few days.

Resolved to forward to Government, copy of the foregoing letter No. 10 dated 27th January 1857, from the Superintending Engineer Central Circle.

(A true Extract.)

(Signed) C. C. JOHNSTON, Captain,

Acting Superintending Engineer Northern Circle.

5A

No. 2. Extract from the Proceedings of the Acting Superintending Engineer, Northern Circle, in charge of the Central office of Public Works, dated the 11th February 1857, No. 10210.

Read the following letter from Captain G. C. COLLYER, Superintending Engineer, Central Circle; to Colonel C. E. FABER, Chief Engineer, dated Bellahoonshy, 28th January 1857, No. 11.

SIR,

I had the honor to send to you a report dated the 27th Instant in which I reported upon the main features of the Navigation I proposed, after writing that report the District Engineer received the levels of the country between Wullabapore and Darojee, taken by Lieutenant Tyrrell, and I am glad to see that from Hospett to Camlapore the ground is more favourable than I had anticipated, as I find that there is a cutting for a short distance of 19 feet only instead of 27 as I had made it by my Aneroid.

2. I feel satisfied in my own mind moreover, that little if any thing in the way of wet cultivation will be sacrificed by the arrangement proposed in the above letter, and for this reason the land at Canaway, Timmapore, is stated to be 184 feet below Walabapore, whereas if the levels be correct, Ramsagur annicut is but 179 feet below the same place, thus dominating the above plain by 5 feet. I do not hold myself responsible for these levels but even if they be incorrect, it is quite certain, that a belt of from 3 to 7 miles broad of excellent land can be watered from a channel taken off at Ramsagur, between the Toombuddra and the Huggry. Where the channel will go across the latter I cannot at present say. Some very heavy cutting in rock will be required at the head of the main irrigation channel, whether it be fixed at Ramsagur, or at the site of the present Kumply channel, but if it be found necessary to place it at the latter site, the annicut will have to be built one or two feet higher, to compensate for the difference of level.

3. I see no real difficulty now in the matter, though there is a great deal of rock, and I feel very sure that every attention will be given by Lieutenant Fisher to the full and thorough drawing up of this project, in its details of construction, &c.

4. The red line on the accompanying sketch shews as near as may be the line of Navigation.

5. Immediately above Hospett, there is a stupendous bund forming a tank called after the Rajah of Humpy, Rayarakery, the bank is 60 feet high and 40 yards broad at top, it is in good order, and so are the sluices. It requires a Calingulah only to complete it. And I have no doubt but that it might be repaired up to present level for Rupees 5,000.

6. At present no water is allowed to be retained in it, because its bed is cultivated and is particularly profitable to the cultivators, who only pay 700 Rupees of rent for it. The Catchment basin is 30 square miles=90,000,000 of superfical yards. The sides of valley are precipitous and of iron stone and I think taking Captain Walker's rain fall, which he states to be 24 inches. It may fairly be assumed that 16 inches of it can be stored giving 40,000,000 cubic yards of water, which is sufficient for 8,000 acres at 5,000 yards per acre.

Resolved that Office

7. The tank A, is situated just above the proposed Navigation, and the attention of the Collector should be directed to this in a revenue point of view, and the attention of the District Engineer to its value as a reservoir, to assist the Canal should it be required for lockage.

8. There is another small drainage of about 15 miles situated conveniently for a reservoir A^2 for lockage down into Camlapoor, I have only looked at the ground. I have taken no levels, but I believe a tank for 20,000,000 cubic yards can be formed across the high road below Inglegy, in which case the high road must be altered, and another lockage reservoir on the same stream, at A^3 only requires repairs.

9. The valleys down from Nellapore towards Goondlekerry, and also from Cunnaway, Timmapore towards Booksagra, and Vencatapoorum, are so abrupt in their longitudinal section having falls of about 28 feet a mile and no breadth whatever, that it is of no use attempting to construct reservoirs there, I however do not believe that they are absolutely required.

Resolved to forward to Government, copy of the foregoing letter No. 11, dated 28th January 1857, and of the Sketch map received from the Superintending Engineer, Central Circle.

(A true Extract.)

(Signed) C. C. JOHNSTON, Captain,

Acting Superintending Engineer, Northern Circle.

No. 3.

ORDER THEREON, No. 655; dated 8th April 1857.

1. The Acting Superintending Engineer Northern Circle, in charge of the Central office of Public Works submits for the information of Government, two reports from the Superintending Engineer Central Circle upon Colonel A. Cotton's projected Navigable and Irrigation Canal in the Bellary District, drawn up in accordance with the orders contained in Extract Minutes Consultation of 7th January 1857, No. 33, paras. 4 and 5.

2. Resolved that copies of the above reports be forwarded to Colonel A. Cotton, for any remarks he may wish to make; and that the originals be re-transmitted to the Chief Engineer's office in order that Colonel Faber (who was absent on leave at the time the papers passed through his office) may give the Government the benefit of his professional opinion.

(Signed) H. FORBES,

Acting Secretary to Government.

Fort Saint

7. The tank A, Collector should be di Engineer to its value

8. There is anot voir A^2 for lockage d levels, but I believe a Inglegy, in which case stream, at A^3 only req

9. The valleys dot mapore towards Boo having falls of about 9 construct reservoirs th

Resolved to forv January 1857, and o Circle.

No. 3.

1. The Acting S Public Works submit Engineer Central Circ the Bellary District, dr sultation of 7th Januar

2. Resolved that remarks he may wish office in order that Col his office) may give the

P.W.D. 74

No 655

Extract from the Minutes of Cons 8th April 1857

Under date the 3rd March 1857

Read the following papers.

1. Lr: Prof. Ch. Engr: dated 11 Feb 1857 No 1200
2 do. do. do No 1024 ; with a sketch map.

1. Resd. Sy. Supt. Engr: & Circle in charge of the Central Office for submission for the information of Govt. two reports from the Supt Engr Central Circle upon Col. A. Cotton's projected navigable and irrigation canal in the Bellary Dt, drawn up in accordance with the orders contained in Govt. Lr. dated 7 Jan 1857 No 33 para. 4 & 5.

2. Resolved that Office,

The above papers referred to M. A. Scott for any remarks he may wish to make; & that the original may be transmitted to the Chief Engineer Office in order that Col. Baker may see, observe on same at the time of the paper passed through his office / may give the Gov. the benefit of his professional opinion.

J. D. B. A. Hatch 18

Copies to the Chief Engr with Orig. Sketch Dispatch

1 " Col. A. P. Cotton with Copies of the Papers & Sketch

1st Corps 18th Dec/55 No 112 and 122 & 123 —
do 29th Jany/56 — 8 & 10 —
do 16th Dec/56 — 57 & 58 and 113 & 114 —
do 19th Augt/56 — 18 —
do 5th Feby/57 — 6 & 8 —
do 20th Jany/57 — 27-28 —

Public Works 1857 Dept.
No 40 Corr. 21st April

No 1 to 655.

Return to letter of 21st inst.

Dept. 8th April/57.

Lt Col Engrs 8th April/57

Con Supt Engr 14th May

Forwarding copies of the reports regarding the navigation of Macalister Canal in the Bellary District to Colonel A. Cotton for any remarks he may wish to make, and that the originals be retransmitted to this Office in order that Col. Cotton may give the Govt the benefit of his professional opinion.

No 1 to 3.