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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

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Dated 27. 11	1868.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
27th November 1868.*

No. 583. Read the following letter from the Superintending Engineer, 7th Division, to the Chief Engineer for Irrigation, dated Bhowany, 10th October 1868, No. 127 :—

1. I have the honor, herewith, to forward for disposal by you a Memorandum on the Calingaroyen Channel, together with plans and estimates for providing it with permanent sluices. I send also, for your information, printed copies of Government Order, No. 355, of 8th March 1856, and of Government Order, No. 2,317, of 21st July 1866; also Colonel Bell's Draft Report of 14th January 1856, and copy of Colonel Cotton's Report of 12th November 1850, the latter of which should, I think, be printed for facility of record and reference.

2. Five sheets of the survey of the Calingaroyen Channel, and of its proposed extension to Noyle river, are sent, with reference to your Circular Memorandum, No. 64, of 9th September, together with plan of its head-sluice. But should the Irrigation Range, discussed between us, be established, it would, I think, be more satisfactory to have fresh surveys of our large channels and of the subsidiary works on them, or proposed for them, made out in the new office, under instructions, as to scales and other details, from your office.

Memorandum on the Calingaroyen Channel.

1. In reply to a letter and Memorandum printed with Government Order, No. 2,317, of 21st July 1866, I was ordered to submit, in a complete and detailed form, proposals for the improvement of the Calingaroyen Channel.

2. I have not been able to come to any other conclusions than those arrived at by General F. C. Cotton in 1850, by Colonel P. M. Francis in 1855, and by Mr. Grant in 1866, viz., that the thorough repair and extension of the channel as it exists should be taken in hand, rather than that time should be lost in elaborately planning a new channel on a more perfect trace; and I find all the essential improvements embodied in the papers, of which an abstract was given in my Memorandum above alluded to, and is condensed as follows, viz:—

	RS.
1. Thorough repair of embankments	25,726
2. Minor masonry improvements to bridges and aque- ducts	9,254
3. Clearing away rocky obstructions in the channel bed	3,000
4. 607 sluices	20,598
5. Extension to the Noyel river	4,342
6. Contingencies	1,978

Total amount sanctioned in G. O., No. 1,405, of 12th
August 1856 64,898

3. The crying want of the channel, from which its efficiency continues to be as greatly impaired as in the times of Generals Ludlow and Cotton and

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Colonel Francis, being permanent sluices, in lieu of three to four times as many cuts in the bank, through which so much wastage occurs as under present native management to necessitate annual remissions for failure of water at the lower end of the channel, I submit, for immediate sanction, an estimate of Rupees 50,163 for 607 sluices, whereof it is proposed to build 312 at a cost of Rupees 26,538 to be provided in the Budget of 1869-70.

4. The channel banks have, from time to time, been improved to a certain extent, but not to that contemplated, viz. a uniform top width of four yards, and a height above full channel level of two yards on the upper, one and a half yards in the central, and one yard in the lower divisions of the channel. I look upon this and the removal of obstructions in the channel bed as maintenance works to be carried out from year to year by a mileage allowance at the rate of one Anna per running yard, or Rupees 110 per mile, for which I request permission to make the following special entries in the Budget of 1869-70, under the head of "Agricultural Repairs":—

1. Calingaroyen channel, 35 miles	Rs. 6,050
2. Thalagully do. 70 do.	7,700
3. Arkenotta do. 50 do.	3,300

5. This brings me to a proposal already discussed with, and approved by the Chief Engineer for Irrigation, viz. the formation of the three main channels of the Coimbatore District into an Irrigation Range, together with the Neringjeet Channel Project, under Mr. Wilson's management, and whose simultaneous advancement to the grade of Assistant Engineer will be only a fitting reward for his able performance of all duties, and recognition of his ability and experience as an Irrigation Officer. No extra expense need be incurred, as it will suffice to reduce the class of Caroor and Collegal Range Officers from 1st to 2nd, to provide Rupees 70 for an Irrigation Range Establishment as follows, viz:—

1. Surveyor and Draughtsman	Rs. 40
1. Accountant and Writer	30
Total	70

And the extra Overseer of the Coimbatore District may be permanently attached to it. I presume also that all existing establishments for distribution of water in these channels will be put under the Irrigation Range Officer. With adequate subordinate superintendence and office establishment placed at his disposal for the special duties of the Neringjeet Project, I do not consider that the change will be too extensive for one Officer, provided that no extension of his duties be made to take in the Coorambo channels of the Cauvery, and the lowest Amravathy anicut channel, in Caroor Talook, which can best be managed by the Range Officer, with head-quarters in their immediate vicinity.

6. Till the organisation above advocated be introduced, I would defer planning and estimating for the bridge-work required across the channel and along its bank, and for alterations to existing aqueducts. Still more would I defer the extension of the channel to the Noyel river, till it is seen how effectually the new

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sluices shall have economised the existing supply of water. My own belief is that, conjointly with better management, it will prove to suffice not for a mere extension from the present channel terminus, but for taking a high level branch off at a point further up, so as considerably to enlarge the proposed irrigable area north of the Noyel.

BHOWANY,
10th October 1863.

(Signed) G. W. WALKER, Colonel, R. E.,
Superintending Engineer, 7th Division.

No. 84.
MEMORANDUM.

THE Government in their Order, No. 2,317, dated 21st July 1866, called upon the Superintending Engineer of the 7th Division to submit a complete report on the proposed improvements of the Calingaroyen Channel. A project had been drawn up by Captain (now General) F. C. Cotton in the year 1850 for the improvement of this important channel. It comprised the strengthening of the banks, removing the rocky obstructions, about fifty bridges, and upwards of 600 irrigation sluices. The estimates, which amounted to Rupees 1,05,000, were subsequently reduced by Captain Francis to Rupees 64,898 by a modification of the plans of the sluices, and the latter amount was sanctioned by Government for entry in the Budget of 1856-57; but financial difficulties prevented the works from being put in execution. The condition of the channels was thus described in the report of this Government to the Government of India: "Not only were the banks much worn away, so as to make it necessary to admit only a diminished supply of water; but under the lax system of management which had prevailed, individual ryots had been permitted to go on making openings for themselves to take water, till there were no fewer than two thousand such openings, all of them much larger than necessary. As a consequence, there was enormous waste of water, and the quantity admitted into the channel irrigated a much smaller extent than it was capable of watering. It has been ascertained by actual measurement, that from the head of the channel at Bhowany, and the aqueduct at Errode, about ten miles distant, a quantity of water is

wasted sufficient to irrigate 10,000 cawnies of land, whereas the whole extent actually watered by the channel in its course of fifty-two miles, is not above 5,000 cawnies. There is no doubt, therefore, that the measures now proposed for strengthening the embankment, and substituting efficient sluices for the present wasteful openings, will greatly increase the irrigating power of the channel. The present proposed extension will command at least 300 cawnies of additional land, the revenue from which will be about 3,000 Rupees, and the economising of water will also save the large remissions annually necessary on some of the lower lands, thus there will be a total direct increase of revenue of about 5,000 or 6,000 Rupees."

2. Colonel Walker now reports that he has not been able to come to any other conclusions than those arrived at by his predecessors, viz., that the repair and extension of the channel as it exists should be taken on hand, rather than that time should be lost in designing a new channel on a more perfect trace; and he submits for sanction estimates and plans for the 607 sluices originally proposed, but with rates altered to those now in force. The banks of the channel have been improved

to a certain extent; and it is proposed to bring them up to the proper standard by means of an annual maintenance grant of Rupees 110 per mile; but Colonel Walker is of opinion that the working of the channel cannot be put on a proper footing until the present wasteful system of distributing the water, is put a stop to by the substitution of masonry sluices for the existing palmyrah spouts and openings at the heads of the field channels.

3. From the accompanying plans and sections, it appears that the channel is extremely tortuous, and that the tract of land between it and the Cauvery, which it irrigates, is nowhere so much as two miles in width, while in many places there is an interval of only two or 300 yards between the channel and the river. The channel follows pretty closely the southern limit of a strip of alluvial land which extends along the margin of the river. Beyond this the ground rapidly rises, and the soil is gravelly with rock cropping up here and there. The fall of the channel is extremely irregular, ranging from six and a half feet per mile to almost nothing; the average fall along the whole length of channel now open, viz., fifty-five miles being about one and three-quarters feet per mile; and at various points where the change of fall is abrupt, the surface of the water must be raised considerably to allow of the required supply being carried forward; or, if the embankments are not sufficiently high for this purpose, (as would appear to be the case) part of the water must be turned off to waste. The channel is particularly defective in this respect in the vicinity of Errode, and at the forty-fourth mile, at both of which points considerable drainages are carried across the channel, and at which falls of six and a half and five feet per mile are followed by a dead level in one case, and by a fall of nine inches per mile in the other.

4. Allowing that various improvements may have been effected since Colonel Cotton's report was submitted, the amount of work still required to be done is not likely to be under what is provided for by Captain Francis's estimates submitted in 1855, of which a summary is given by Colonel Walker in the above Memorandum. As it now appears that the sluices, which were then estimated to cost 20,593, would, at present rates, cost 50,163 Rupees, it may be assumed that the total outlay required to place the channel in proper order will not be much under 1,50,000 Rupees. This amount may even be insufficient, for several masonry works, not provided for in the estimates, would appear to be requisite, for overcoming the irregularities of fall above described.

5. I conclude that Government will not be willing to incur so large an outlay, unless it can be shown that the revenue will be improved by it. The reports on this part of the subject in my possession are of old date. Colonel Ludlow in 1854 furnished a statement of the nunjah cultivation under the channel for a period of thirty years, from which I learn that the average assessment was 85,363 Rupees, the loss from remissions and other causes, Rupees 5,660, and the expenditure on repairs, Rupees 1,705 per annum. It would appear necessary that the particulars of revenue and loss occasioned by an insufficient supply of water should be furnished up to date, and that the estimate of the increase of revenue to be derived from the improvements of the channel should be revised. I have been informed that there are four rates of assessment prevailing, namely, 24, 22, 20, and 12 Rupees

per cawny, and I conclude that the gradation is due not so much to the difference of quality in the soil, as to the inequality of the water supply at different points between the head and terminus of the channel. Should this surmise be correct, any improvement of the channel, which should result in an equalisation of the supply of water to lands now assessed at different rates, might reasonably be followed by an equalisation of the assessment; and thus there would appear to be some hope of making out a good case for the proposed works. But it would, in my opinion, be premature for Government to sanction the considerably large outlay proposed by the Superintending Engineer. Not only does the number of sluices appear to be excessive, being at the rate of one to every 150 yards, but it would be impossible to place them at the proper levels until after it is decided to what extent the fall of the channel is to be rectified. While, however, I think it likely that the number of sluices may be reduced, I should explain that the interval between them must be inconsiderable, in consequence of the narrowness of the strip of country between the channel and the river, and of the cultivation extending every where close to the channel bank.

6. Instead of spending a large sum in improving the Calingaroyen Channel, there is the alternative indicated by the Superintending Engineer of forming an entirely new line through the higher ground to the southward. Though a considerable time would necessarily be occupied in the investigation of this project, still it is better that there should be delay, rather than that there should be a chance of carrying out work, which, if the new project were even sanctioned, might prove to have been unnecessary. The ground is certainly not of a promising character, for it rises so rapidly from the present line of channel that a new line with an uniform fall of one foot per mile would gain but an almost inappreciable extra width of land for cultivation in the first twenty-five miles of its course, and from the twenty-fifth to the fifty-fifth mile the average width gained would probably not exceed half a mile, equivalent in area to about 300 acres to the mile. Moreover, rock would be encountered in the cuttings in various places. The project would nevertheless seem worthy of investigation. If it were found to be of a favorable character, as regards its remunerative results, and compared with those to be derived from the contemplated outlay on the old channel, it would have the advantage over the latter in allowing of the water being distributed much more simply and efficiently than would be possible under existing arrangements, for the old channel might then be divided into isolated sections, each three or four miles in length, which length would be supplied by a single sluice on the new channel.

7. On the above considerations, I would recommend that Mr. Wiffen be placed in charge of the irrigation channels under the Bhowany river in addition to the Nerinjepet Channel Project, as proposed by the Superintending Engineer; and that as soon as possible after he has completed the estimates for the latter work, he should turn his special attention to the Calingaroyen Channel, and prepare plans and estimates for the works necessary to turn the supply available at its head to the best account for irrigating the land commanded by it.

8. As regards Colonel Walker's proposal to enter maintenance allowances for the three principal channels from the Bhowany in the Budget for the ensuing year,

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I would beg to state that I see no objection on principle to this arrangement, and would recommend it for the approval of Government, subject to any future modification which further investigation may show to be necessary.

9. It would appear from the report already quoted that the average assessment of the Thadapully and Arkencottah channels, for a period of thirty years, amounted to Rupees 85,922 and 19,793, and the loss by remissions to Rupees 18,149 and 4,456, respectively per annum.

FORT ST. GEORGE,
29th October 1868.

(Signed) J. C. ANDERSON, Colonel, R. E.,
Chief Engineer for Irrigation.

No. 584.

ORDER THEREON, 27th November 1868, No. 3712.

IRRIGATION, No. 26.

1. With his Memorandum above recorded, the Chief Engineer for Irrigation submits a report by the Superintending Engineer of the Calingaroyen Channel

ing Engineer of the 7th Division on the improvement of the Calingaroyen Channel in the Coimbatore District.

2. The condition of this channel, and the measures that appeared to be necessary for more largely developing its usefulness, were brought under the notice of Government by Captain (now General) F. C. Cotton so far back as November 1850. He showed that the work had been allowed to fall into considerable decay, and that, in consequence of individual ryots having been permitted to take water by means of cutting openings in the banks, there was a large waste of water, and consequently a proportional diminution of the area irrigated. As a remedy, it was proposed to strengthen and raise the channel embankments, to provide a number of small masonry sluices in substitution of the cuts made from time to time by the ryots, and to extend the channel to the Noyel river in order to bring under irrigation a large extent of land for which ample water would, by these improvements, be made available. An estimate of Rupees 61,805 for carrying out these proposals was approved by the Government in the Budget of 1856-57, but, owing to the restrictions imposed by the Government of India upon expenditure in the following year, the project was held in abeyance until, in July 1866, the Superintending Engineer, having again brought it forward for consideration, he was requested to submit it, after revision, in a complete form.

3. The report which the Superintending Engineer now furnishes is in compliance with those instructions. Giving it as his opinion that the channel is badly designed, Colonel Walker is nevertheless unable to come to any other conclusion than that arrived at by his predecessors, that it will be better to improve and extend the present channel than to attempt to remake it on a new alignment, and he accordingly resubmits Colonel Francis's proposals for the construction of 607 masonry sluices on revised estimates amounting to Rupees 50,163. Colonel Walker would leave the remodelling of the embankments, and general improvement of the channel to be worked out gradually under a maintenance grant, which he suggests should be allotted, not only to this, but to the Thadapully and Arkencottah channels, at the rate of Rupees 110 per mile.

4. In reviewing Colonel Walker's recommendations, the Chief Engineer for Irrigation points out that as the channel skirts the narrow strip of alluvial land

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which borders the river to a breadth ranging from two miles to a few hundred yards it is naturally very tortuous, and that, having been made to follow very much the natural fall of the country, it has a very irregular slope, the bed having in some places a fall of six and a half feet per mile, and in others being level. The result is that at the foot of the rapid falls it has been necessary to provide escapes, through which a great deal of water, that might be carried onward down the channel, is returned to the river.

5. To correct this state of things, it will be necessary to rectify the slopes, and to raise and strengthen the embankments at the low parts to such an extent as to involve a very great outlay. Colonel Anderson is of opinion that not less than Rupees 1,50,000 will be required, and he hesitates to recommend so large an expenditure without some better assurance than has yet been furnished that it will make some return. He therefore suggests that, before any determination is come to, statements should be obtained from the Revenue authorities of the particulars of revenue under the channel, and of the loss occasioned by an insufficient supply of water, and that a thorough investigation should be made of the channel in order to ascertain whether it will be economically practicable to make an entirely new canal on a higher level, or, if not, to obtain data from which a correct estimate may be prepared of the cost of putting the present channel into a thoroughly effective state.

6. For the better carrying out of these investigations, and for the more careful supervision of the important irrigation works under the Blawany, Colonel Anderson supports the Superintending Engineer's recommendation to constitute the Calingaroyen, the Thadapully, and the Arkencottah channels a separate Irrigation Range, and to attach to it the Neringjeepet Ancient Project.

7. The Government concur with the Chief Engineer. They do not doubt that the improvement of the Calingaroyen channel in the manner proposed would be very beneficial; but while all the money they have at their disposal for irrigation purposes can be advantageously and profitably laid out, they are not disposed to sanction the expenditure of so large a sum as Rupees 1,50,000 on the channel without full information of the probable effect of the outlay on the extension of cultivation, and on the returns to be expected.

8. The plans and estimates received from the Superintending Engineer of the 7th Division will be returned to him, and he will take immediate measures for establishing the new Irrigation Range in the manner he has suggested, forwarding a statement showing the distribution of Officers, subordinates and office establishments in the Coimbatore District under the present and proposed arrangements, and the talooks attached to each Range.

9. As the ground to the westward of the channel is probably rugged and with a rapid rise, it does not seem likely that a new channel, parallel to the present one, with a more favorable and regular fall, can be economically excavated in that direction, but the point is worth examination, and ought to be carefully determined in the preparation of the plans and estimates for all the works which may be necessary to turn the supply of water entering the head of the channel to the best account for irrigating the land commanded by it. In submitting those plans and estimates, Colonel Walker will be careful to furnish full returns showing the parti-

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culars of revenue, the loss occasioned by an insufficient supply of water, and the increase likely to be derived from the improvement of the channel.

10. The consideration of the question of a maintenance allowance for the channel will be deferred, pending the submission of the estimates now called for.

(True Extract.)

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

To the Superintending Engineer, 7th Division.
.. Chief Engineer for Irrigation.

" Controller of P.W.D.

Exd. F. R. Pantleuan.

N. H.

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The Government in their order No. 2317 dated 21st July 1866 called upon the Superintending Engineer of the 7th Division to submit a complete report on the proposed improvements of the Keelingaroyed channel. A project had been drawn up by Captain (now General) F. G. Cotton in the year 1850, for the improvement of this important channel. It comprised the strengthening of the banks, removing rocky obstructions, about 50 bridges, and upwards of 600 irrigation sluices. The estimates, which amounted to Rupees 1,05,000, were subsequently reduced by Captain Francis to Rupees 64,898 by a modification of the plans of the sluices, and the latter amount was sanctioned by Government for entry in the Budget of 1856-57; but financial difficulties prevented the works from being put in execution. The condition of the channels was thus described in the Report of this Government to the Government of India: "Not only were the banks much worn away, so as to make it necessary to admit only a diminished supply of water; but under the bad system of management which had prevailed, individual

individual Ryots had been permitted to go on making openings for themselves to take water, till there were no fewer than two thousand such openings all of them much larger than necessary. As a consequence there was enormous waste of water and the quantity admitted into the channels irrigated a much smaller extent than it was capable of watering. It has been ascertained by actual measurement that from the head of the channel at Barany and the aqueduct at Barado about 10 miles distant, a quantity of water is wasted sufficient to irrigate 10,000 Canies of land, whereas the whole extent actually watered by the channel in its course of 55 miles is not above 5,000 Canies. There is no doubt therefore that the measures now proposed for strengthening the embankment, and substituting of permanent sluices for the present wasteful openings, will greatly increase the irrigating power of the channel. The present proposed extension will command at least 300 Canies of additional land, the revenue from which will be about 3000 Rupees; and the economizing of water will also save the large sum of 100,000 annually necessary as rent of the lower lands. Thus there will be a total direct increase

Barany = 1,320

increase of revenue of about 5,000 or 6,000 Rupees".
2. Colonel Walker now reports that he has not been able to come to any other conclusions than those arrived at by his predecessors, viz: that the repair and extension of the channel as it exists should be taken on hand rather than that time should be lost in designing a new channel on a more perfect trace; and he submits for sanction estimates and plans for the 607 sluices originally proposed, but with rates altered to those now in force. The banks of the channel have been improved to a certain extent; and it is proposed to bring them up to the proper standard by means of an annual maintenance grant of Rupees 110 per mile; but Colonel Walker is of opinion that the working of the channel cannot be put on a proper footing, until the present wasteful system of distributing the water is put a stop to, by the substitution of masonry sluices for the existing palmra-sprouts and openings at the heads of the field channels.

3. From the accompanying plans and sections it appears that the channel is extremely tortuous, and that the tract of land between it and the leauvery, which it irrigates is no where

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channel, that a new line with a uniform fall of 1 foot per mile, would gain but an almost inappreciable extra width of land for cultivation, in the first 25 miles of its course, and from the 25th to the 55th mile. The average width gained would probably not exceed half a mile equivalent in area to about 300 acres to the mile. Moreover rocks would be encountered in the cuttings, in various places. The project would nevertheless seem worthy of investigation. If it were found to be of a favorable character, as regards its remunerative results, and compared with those to be derived from the contemplated outlay on the old channel, it would have the advantage over the latter in allowing the water being distributed much more simply and efficiently than would be possible under existing arrangements. For the old channel might then be divided into isolated sections each 3 or 4 miles in length, which length would be supplied by a single sluice on the new channel.

7. On the above considerations, I would recommend, that Mr. Gifford be placed in

17
in charge of the irrigation channels under the Bawany River in addition to the Cheringpet Channel project, as proposed by the Superintending Engineer; and that, as soon as possible after he has completed the estimates for the latter work, he should turn his special attention to the Bealungaroy Channel; and prepare plans and estimates for the work necessary to turn the supply available at its head, to the best account for irrigating the land commanded by it.

8. As regards Colonel Walker's proposal to enter maintained allowances for the 3 principal channels from the Bawany, in the Budget for the ensuing year, I would beg to state that I see no objection on principle to this arrangement, and would recommend it for the approval of Government subject to any future modification which further investigation may show to be necessary.

9. It would appear from the report already quoted, that the average expenditure of the Shadapully and Arcuncotta Channels, for a period of 30 years, amounted to Rupees 85,922, and Rupees 19,793 and the loss by remissions to Rupees 18,149 and 14,456, respectively per annum.

Fort St. George
29th October 1868.

S. Anderson
Lieut. Engineer for Irrigation

To
The Secretary to Government M.D.

19
 Superintending Engineer's Office - 7th Divⁿ
 Bhowany 10th October 1868

No 127
 From,

Colonel G. W. Walker R.E.
 Superintending Engineer
 7th Division

To,

Colonel J. C. Anderson R.E.
 Chief Engineer for Irrigation

Sir,

I have the honor herewith to forward for disposal by you a Memo. on the Balingaryen Channel, together with Plans and Estimates for providing it with Permanent Sluices. I send also for your information Printed Copies of G.O. No 355 of 8th March 1856, and of G.O. No 2317 of 21st July 1866; also Colonel Bell's Draft Report of 14th January 1856, and Copy of Colonel Cotton's Report of 12th November 1850, the latter of which should I think be printed for facility of record and reference:-

5 Sheets of the Survey of the Balingaryen Channel and of its proposed extension to Royal River are sent with reference to your Circular Memo. No 64 of 9th September, together with Plan of its Head Sluice. But should the Irrigation Range discussed between us be established it would I think be more satisfactory to have fresh surveys of our large Channels and of the

Enclosed 13.
 1. Memo. with
 2. Plans, 20th
 3. 2nd Ed. 1856
 4. 18 March 1856
 5. 21st July 1866

Also to be sent to the
 Chief Engineer for Irrigation
 in connection
 with the
 Balingaryen Channel
 and its extension to
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the subsidiary works, on them, or proposed for them, made out in the new office under instructions, as to scales and other details, from your office:-

I have the honor to be
Sir,

Your Most obedient Servant
G. Walker Colonel R.E.
Superintending Engineer

A.

Memo on the Calingeroys Channel.

In reply to a letter and Memo printed with G. O. No 2314 of 21st July 1866; I was ordered to submit in a complete and detailed form proposals for the improvement of the Calingeroys Channel.

2. I have not been able to come to any other conclusions than those arrived at by General F. C. Cotton in 1850, by Colonel D. Mc. Francis in 1855, and by Mr. Grant in 1866, viz. that the thorough repair and extension of the Channel as it exists should be taken in hand, rather than that time should be lost in elaborately planning a new Channel on a more perfect tract. And I find all the essential improvements embodied in the papers of which an abstract was given in my Memo above alluded to, and is condensed as follows viz.

1. Thorough Repair of embankments	Rs. 25,726
2. Minor Masonry Improvements to Bridges and aqueducts	Rs. 9,254
3. Clearing away rocky obstructions in the Channel Bed	Rs. 3,000
4. 607 Sluices	20,598
5. Extension to the Nagel River	Rs. 4,342
6. Contingencies	1,978
Total Amount sanctioned in G. O. No 1405 of 12 th August 1856	Rs. 64,898

3. The crying want of the Channel, from which its efficiency continues to be as greatly impaired as in the

to the Chief Engineer
for Navigation

to the Chief Engineer
for Navigation

to the Chief Engineer
for Navigation

to the Chief Engineer
for Navigation

to the Chief Engineer
for Navigation

times of General Ludlow and Cotton and Colonel Francis, being Permanent Sluices in lieu of 3 to 4 times as many cuts in the bank through which so much wastage occurs as under present native management to necessitate annual remissions for failure of water at the lower end of the Channel. I submit for immediate sanction an estimate of Rs. 50,168 for 60 Sluices, whereof it is proposed to build 47 3/4 at a cost of Rs. 26,558 to be provided in the Budget of 1869/70. The Channel Banks have from time to time been improved to a certain extent, but not to that completed vizt. a uniform top width of 4 yards, and a height above full Channel level of 2 yards on the upper, 1 1/2 yards in the central, and 1 yard in the lower Divisions of the Channel. I look upon this and the removal of obstructions in the Channel Bed as Main-tenance works to be carried out from year to year by a Mileage Allowance at the rate of one anna per running yard or Rs. 110 per mile; for which I request permission to make the following special entries in the Budget of 1869-70, under the head of "Agricultural Repairs".

1. Lalingaroyen Channel 55 miles. Rupees 6050 ..
2. Thadapully do. 70 do. do. 7700 ..
3. Arkencotta do. 20 do. do. 3300 ..

5 This brings me to a proposal already discussed with and approved by the Chief Engineer for Irrigation, vizt. the formation of these 3 Main Channels of the Coimbatore District into an Irrigation Range, together with the Sringerisputt Channel

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Project, under Mr. Wiffen now engaged on the latter, and whose simultaneous advancement to the grade of Assistant Engineer would be only a fitting reward for his zealous performance of all duties and recognition of his ability and experience as an Irrigation Officer. No extra expense need be incurred, as it will suffice to reduce the classes of Baroos and Col-legal Range Officers from 1st to 2nd, to provide Rs. 70 for an Irrigation Range Establishment as follows: vizt.

1 Surveyor and Draftsman	Rupees 40 --
1 Accountant and Writer	do 30 --
<u>Total Rupees 70 --</u>	

and the extra Querser of the Coimbatore District may be permanently attached to it. I presume also that all existing Establishments for distribution of water in these Channels will be put under the Irrigation Range Officer. With adequate subordinate Superintendence and Officer Establishment placed at his disposal for the special duties of the Sringerisputt Project I do not consider that the charge will be too extensive for one Officer, provided that no extension of his duties be made to take in the forams of the Cauvery, and the lowest Amravati Ancient Channel, in Baroos Talug, which can best be managed by the Range Officer with Head Quarters in their immediate vicinity.

6. Till the organization above advocated be introduced I would defer planning and estimating for the Bridge work required across the Channel and along its banks, and for alterations to existing aqueducts. Still more would I defer the extension of the Channel to the

Koyel River, till it is seen how effectually the new sluices shall have economized the existing supply of water. My own belief is that, conjointly with better management, it will prove to suffice not for a mere extension from the present channel terminus, but for taking a high level branch off at a point further up, so as considerably to enlarge the proposed irrigable area north of the Koyel -

Supy Engineer's Office
7th Div
Bhuvani, 10th October 1868
M. Walker Colonel R.E.
Superintending Engy 7th Div

To the Chief Engineer for Irrigation with letter
No. 127 of 10th October 1868 -

In selection from the
M. Walker's letter to
the Chief Engineer for
Irrigation in which
he mentions the
Koyel River, Bhuvani,
10th October 1868.

10th Oct 1868

Memorandum on
the taking over of the
Koyel, from the
Bhuvani, 10th Oct 1868.

Survey of the Koyel, 1868.

10th Oct 1868

Public Works Department
No. 3712

Proceedings of the Madras Government
Under date the 27th November 1868
Read the following

From the Chief Engineer } H.E. dated 29th Oct 1868
for Irrigation } No. 84

With his Memorandum

from above recorded the
Chief Engineer for Irrigation
submits a report by the Supy.
Engineer of the 7th Division on
the improvement of the
Kalyanarayan Channel in the
Coimbatore District.

The condition of this
Channel, and the measures
that appeared to be necessary
for more largely developing
its usefulness, were brought
under the notice of Government

by

N. W. L.

10th Oct 1868

by Capt. (now General)
F. C. Cotton so far back
as November 1850. He
showed that the work had
been allowed to fall into
considerable decay, and
that in consequence of
individual Ryots having
been permitted to take
water by means of cutting
openings in the banks,
there was a large waste of
water, and consequently
a proportional diminution
of the area irrigated. As
a remedy, it was proposed
to strengthen and raise the
Channel embankments,
to provide a number of
small masonry sluices
in substitution of the cuts
made

made from time to time by
the Ryots, and to extend the
Channel to the Noyl river
in order to bring under irri-
gation a large extent of land
for which ample water would,
by these improvements, be
made available. An esti-
mate of Rs. 14,898 for car-
rying out these proposals
was approved for entry
in the Budget of 1856-7, but
owing to the restrictions
imposed by the Govt of
India upon expenditure
in the following year, the
project was held in abey-
ance, until in July 1856,
the Superintending Engineer
again brought it forward
for

For consideration, he
was requested to submit
it, after revision, in a
complete form.

The report which
the Engineer now
furnishes is in com-
pliance with those in-
structions. Giving it
as his opinion that the
Channel is badly de-
signed, Col. Walker is
nevertheless unable to
come to any other con-
clusion than that ar-
rived at by his pre-
decessors that it will be
better to improve and
extend the present
Channel than to at-
tempt to remake it

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it on a new alignment,
and he accordingly re-
submitted Col. Francis'
proposals for the con-
struction of box masonry
sluices, with revised esti-
mates amounting to
Rs. 50,168. Col. Walker
would leave the re-
modelling of the embank-
ments, and general im-
provement of the Channel
to be worked out gradually
under a maintenance
grant, which he suggests
should be allotted not
only to this, but to the
Thadapally and Ar-
Kencottah Channels,
at the rate of Rs. 110 per
mile.

Lu

In reviewing Col. Walker's recommendations, the Chief Engineer for Irrigation points out that, as the channel skirts the narrow strip of alluvial land which borders the river to a breadth ranging from two miles to a few hundred yards, it is naturally very tortuous, and that, having been made to follow very much the natural fall of the country, it has a very irregular slope, the bed having in some places a fall of $1\frac{1}{2}$ feet per mile, and in others being level. The result is that at the foot of the

Rapid Falls it has been necessary to provide escapes, through which a great deal of water that might be carried onward down the channel is returned to the river.

To correct this state of things, it will be necessary to rectify the slopes, and to raise and strengthen the embankments at the low parts to such an extent as to involve a very great outlay. Colonel Anderson is of opinion that not less than Rs. 1,50,000 will be required, and he hesitates to recommend so large an expenditure without some better assurance than has yet been

been furnished that it
will make some return.
He therefore suggests that
before any determination
is come to, statements
should be obtained from
the Revenue Authorities
of the particulars of
revenue under the
channel, and of the loss
occasioned by an in-
sufficient supply of
water, and that a thorough
investigation should
be made of the channel
in order to ascertain
whether it will be eco-
nomically practicable
to make an entirely
new Canal on a higher
level, or if not, to obtain
data

Jan 11 1881

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data from which a cor-
rect estimate may be
prepared of the cost of
putting the present Chan-
nel into a thoroughly ef-
fective state.

For the better carry-
ing out of these investiga-
tions, and for the more
careful supervision of the
important irrigation works
under the Khoranp. Col.
Anderson supports the
Asst Engineer's recommend-
ation to constitute the
Kalingarayan, the Thada-
pally and the Arkencottah
Channels a separate
Irrigation Range, and to
attach to it the Serinjepet
Channel project.

The

The Govt. concur
with the Chief Engineer.
They do not doubt that the
improvement of the Salu-
garayen Channel, in the
manner proposed, would
be very beneficial; but
while all the money they
have at their disposal
for irrigational purposes
can be advantageously
and profitably laid
out, they are not dis-
posed to sanction
the expenditure of so
large a sum as Rs. 1,50,000
on the Channel without
full information of the
probable effect of the
outlay on the extension
of cultivation, and on
the

35
the returns to be expected.

The Plans and
estimates received from
the Superintendents of the
7th Division will be re-
turned to him, and he
will take immediate
measures for establish-
ing the new Irrigation
Range in the manner
he has suggested, for-
warding a statement
showing the distribution
of Officers, Subordinates
and Office Establishments
in the Coimbatore District
under the present and
proposed arrangements,
and the salaries attached
to each Range.

As the ground

As the westward of the
 with Channel is probably
 they dugged and with a rapid
 rise, it does not seem
 likely that a new Chan-
 nel, parallel to the pre-
 sent one, with a more
 favorable and regular
 fall can be economi-
 cally excavated in
 that direction, but
 as the point is worth ex-
 amination, and ought to
 be carefully determined
 in the preparation of
 the plans and estimates
 for all the works which
 may be necessary to
 secure the supply of
 water entering the head
 of



of the Channel to the
 best account for ir-
 rigating the land com-
 manded by it. In sub-
 mitting those plans
 and estimates, Colonel
 Walker will be careful
 to furnish full returns
 showing the particulars
 of revenue, the loss occa-
 sioned by an insufficient
 supply of water, and the
 increase likely to be
 derived from the im-
 provement of the Chan-
 nel.

The consideration
 of the question of a
 maintenance al-
 lowance for the
 Channel will be
 de-

deferred pending the
submission of the
minutes now called
for.

[Handwritten signature]

To The Sup^{ts} 7th Division
- Chief Engineer for
Lieutenant - Victor Albrecht
a controller of M.A.
+ a Revenue Agent

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Recd 230/11/68
+ - 2/12/68

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Cue 4279
Court of 1868 Madras.

PUBLIC WORKS.

*Memorandum of
the 10th Division*

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Part 1

Part 1

G. O. 27th Nov 1868 No. 27th

Nos. 582-584

Colingaroyen channel - *Refer to*
in papers relative to the improve-
ment of the Colingaroyen channel
in the Coimbatore District.