M.R.O. 1—21-12-53—22-11-53

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

Con. Mty. —

G.O. No. 1879 Press Mis.

Dated 23 — 19 54

Not to be folded or roughly handled

No. 83. Read the following letter from Lieutenant Colonel F. C. COTTON, Engineers; to the Secretary to Government, Revenue Department, dated 23rd July 1858, No. 21.

SIR,

Para. 1. I regret to find that owing to my absence on leave from Madras, the papers referred to me by Mr. Bayley regarding certain improvements in the District of Ganjam, recommended by Lieutenant Phillips, (Extract Minutes of Consultation No. 920 of 14th May 1858) have remained till this time unanswered.

2. After reading what has been written on these subjects by Lieutenant Phillips, Lieutenant Blagrave the District Engineer, and Colonel Faber, I have no hesitation in saying that I agree with Lieutenant Blagrave in the support he has given to Lieutenant Phillips' proposal. I feel quite sure that the position of the embankments proposed is judicious, and that it is advisable to rescue so much land at least, from the river, I have again and again said that estimating the value of these works by the remissions of former years is an utter mistake. The crops are now in a precarious state, and the Cultivators of Ganjam are not in a condition to gamble with the river, and Stake Crops of Sugar or other valuable products, upon the chance of the surface level of the water leaving them uninjured. Rice is grown in such lands to be sometimes gathered and sometimes lost, occasionally yielding an abundant harvest, but more frequently injured by the floods. In any country this would be an unsatisfactory state of things, but where the people are as poor as they are in India, such risk is ruinous. If the District Engineer considers that the embankments are not high enough to give perfect security, they might be raised higher, but rather than delay longer, I would be content to try them of the height suggested, feeling confident that they will be of great value to the country.

3. I don't know the mouth of the Ganjam river, but I think Lieutenant Phillips is right in making some effort to improve the entrance. If his proposal is injudicious it would be advisable for the District Engineer to suggest something more likely to prove efficacious.

4. The Sluices recommended should all be built.

5. I must express my dissent from the view taken by the Collector, and backed by the Chief Engineer, that the works proposed should not be executed, because still better projects might be undertaken. This principle has been the most common excuse for doing nothing ever since I arrived in India.

No. 84. ORDER THEREON, No. 1879; dated 13th September 1858.

1. Under authority granted in Extract Minutes Consultation dated 12th February 1856, No. 190, an estimate of 64,840 Rupees was entered in the Budget of 1856-57, for embanking the Mahanuddee river at a point near Aska, where it receives its tributary the Rooshookoolea, to Kolada about 33 miles distant; and considering the case one of emergency, with reference to a representation previously received from Messrs. Binny and Co. of the losses suffered by them in common with other holders of land in consequence of the inundations of the Mahanuddee, an advance of 30,000 Rupees was authorized for constructing the embankments where they were more pressingly required, and for preparing for the Head Sluices which formed part of the work. This circumstance was at the same time duly reported to the Government of India, in a letter dated 12th February 1856, No. 190 A. In their reply of the 22nd March 1856, No. 1215, the Government of India confirmed the authority granted by this Government for the abovementioned advance of 30,000 Rupees; but at the same time communicated correspondence and papers, which had resulted in the Government of India sanctioning the abandonment of the embankments of the Damoodah river in Bengal. And in their further letter of the 11th July 1856, No. 3173, passing orders on the Public Works Budget of this Presidency for 1856-57, para. 12, they referred to the doubts they had previously expressed of the propriety of commencing a

system of embankments in the Mahanuddee ; and considering the defective information, in respect to the professional bearings of the project and the condition of the river, they withheld their sanction to any further outlay, until furnished with full and satisfactory information on the several points noticed by them, and until it could be shewn that the evils attendant on the Damoodah embankments were not likely to result in the case of the Mahanuddee. This Government in Extract Minutes of Consultation 12th August 1856, No. 1405, (para. 11), accordingly called upon the Chief Engineer to give his attention to the remarks of the Government of India, and beside supplying the details required by that authority, to obtain the opinion of Colonel F. C. Cotton who had recently inspected the river, in order that a complete report might be prepared, for submission to the Government of India.

2. With his letter of the 18th February 1858, No. 7478, Colonel Faber submitted letters from Colonel Cotton, Lieutenant Moberly Acting District Engineer of Ganjam, Lieutenant Blagrave subsequently District Engineer, and Mr. Knox Acting Collector with a report from Lieutenant Harrington Executive Engineer. Lieutenant Colonel Cotton strongly advocated the embankments ; Lieutenant Moberly opposed their construction, and notwithstanding faulty calculations and the adverse criticism of Colonel Cotton, Colonel Faber was of opinion that his views were entitled to attention, especially supported as they were by the later and fuller report of Lieutenant Harrington. This Officer stated that the floods were only complained of on the low lying lands, and that these floods were caused not so much by the water topping the tanks, as by rushing down the open Irrigation canals on either hand, and by the want of outfall to this water and the local drainage while the river was full ; and he was of opinion that, as the length of the river was small and its slope and that of the adjacent country very great, the submergence was of too short duration to do much injury, and that it was more than doubtful whether the fertile effect of the rich deposits left by the inundation, did not fully compensate for any damage done by it, as the cultivation, chiefly Rice and Sugar-cane, could not suffer unless several days under water, which it never was in consequence of the floods of the Mahanuddee. Lieutenant Harrington was therefore averse to continuous embankments, and proposed instead the maintenance and strengthening of small detached pieces only, with sluices to all the channels opening from or into the river, in order to prevent the flood water from rushing down them, and committing, as it now did, the only ravages complained of, viz. tearing up the channel beds and depositing sand on the fields in their neighbourhood. Lieutenant Blagrave supported Lieutenant Harrington in these views; and Mr. Knox said that the Ryots did not care for an extended embankment, but rather required banks at particular points only. Colonel Faber agreed with the majority of these Officers, and recommended sanction to the estimate prepared by Lieutenant Harrington, for earth-work in repairing and extending old Dykes, and for Sluices to the heads of the irrigating channels referred to, amounting after deductions in the Central Office to 4,080 Rupees in the aggregate.

3. With a later communication, dated 22nd March 1858, No. 8320, Colonel Faber forwarded further letters from Mr. Knox and Lieutenant Blagrave, with a report from Lieutenant Phillips, who had succeeded Lieutenant Harrington as Executive Engineer. In this report, Lieutenant Phillips minutely described the characteristic features of either bank of the Mahanuddee from the Sea to Aska, and shewed that by means of cross sections and careful enquiries, he had ascertained that only in seven places, four on the left and three on the right, did the ordinary floods overtop the banks or do any damage. The great flood that gave rise to the proposition of embanking the Mahanuddee, he said, occurred in 1853; and he added that the oldest inhabitants mentioned to him that such a flood had never before or afterwards occurred within their knowledge. It was therefore for the ordinary floods, that Lieutenant Phillips proposed to provide ; and his proposition was to throw up Dykes at the seven places where, he had ascertained, the river over-topped its banks, aggregating altogether a little more than five and a half miles in length, and to provide these with small circular Sluices, to enable the Ryots to obtain water for the fields while the river was high enough to afford them a small supply, with a small Head Sluice to an irrigating channel near Sunthashapooram, at a total cost of only 6,326 Rupees, viz., 5,826 Rupees for earth-work, and 500 Rupees for masonry.

4. Lieutenant Blagrave the District Engineer fully concurred with Lieutenant Phillips in the necessity for the works thus proposed by him ; and added that from what he had seen of the river and the calculations he had made, they appeared to him to be sufficient to effect the object for which they were designed. Mr. Knox, the Acting Collector, looked at the matter in a Revenue point of view, and declared his decided opinion, that the interest on the heavy outlay necessary to bank the whole river, would be far more than any remission likely to be called for an account of the floods. He therefore suggested that the works proposed by Lieutenant Phillips be tried in the first instance ; adding that so much remained to be done in Ganjam, and so many paying projects remained to be brought forward, that he was very averse to support any expenditure not likely to make a good return to Government and to the inhabitants. But the Chief Engineer on this occasion declared, that he could not concur with the Collector and the District Engineer, in recommending that the partial works proposed by Lieutenant Phillips should be tried, as the object was to afford protection against the effects of a recurrence of a flood like that of 1853, and not against those of ordinary seasons, which probably did more good than harm, and to guard against a flood like that referred to, Lieutenant Phillips' measures were manifestly inadequate. Then, referring to the return of remissions furnished by Lieutenant Phillips, Colonel Faber pointed out that during the last thirteen years, the remissions amounted to but 6,811 Rupees ; and that if from this 3,223 Rupees were deducted on account of the flood of 1853, against a recurrence, of which neither the proposed works nor any others would in the opinion of the District Engineer be of any avail, as also a sum of 1,416 Rupees caused by the damage done by the Goodala Nullah or Ingelly river, a tributary of the Rooshookoolea itself a tributary of the Mahanuddee, there remained but 2,172 Rupees of loss actually due in the course of thirteen years, to the ordinary inundations from the Mahanuddee below Aska, or about 167 Rupees per annum, probably less than the amount usually granted on a similar area of cultivated land any where else.

5. These facts, proceeded Colonel Faber, and a careful consideration of the subject, with the clearer light thrown upon it by the recent investigations of the local Officers, satisfied him, that in consequence of looking upon the great flood of 1853 as a common one, instead of one so rare as to occur perhaps not more than once in a life time, the dangers from the Mahanuddee had been greatly exaggerated; and that losing sight of the great benefit derived by the land from the river's overflow, the necessity of shutting it in with embankments had been too hastily assumed, without consideration of the great difficulty and cost of their construction, or of the little advantage to be gained from them. He added that the advantage had now been shewn to be quite incommensurate with the great cost of constructing and maintaining the vast system of embankments and sluices, that would be required thoroughly to control the river and the drainage from the lands ; and that while discountenancing the partial measures proposed, he quite agreed with the Collector that there were many paying projects in Ganjam deserving of more attention than this. Colonel Faber therefore recommended that beyond maintaining and perhaps strengthening the Dykes already made near Aska and certain other localities, the question of embanking the Mahanuddee and its tributaries be for the time at least set aside, and that the amounts entered for the purpose in the Budgets of 1856-57 and 1857-58, be now withdrawn from the future expenditure of the Ganjam District.

6. These several papers having been referred* to Colonel F. C. Cotton, for such remarks as he might wish to offer, in support of the views he had expressed in favor of embanking the Mahanuddee, that Officer now submits the letter which is recorded at the head of these Proceedings. Colonel Cotton observes that, after reading what has been written by the several Officers alluded to above, he has no hesitation in agreeing with Lieutenant Blagrave in his support to Lieutenant Phillips' proposals, and that he feels sure that the position of the different embankments is judicious, and that " it is advisable to rescue so much land at least from the river." He remarks that he has repeatedly asserted that estimating the value of these works by the remissions of former years, is an utter mistake ; that the crops are now in precarious state ; and that the cultivators of Ganjam are not in a condition to gamble with the river, or stake crops of Sugar,

* E. M. C. 7th April 1858, No. 601.
do 14th May " " 920.

or other valuable products, upon the chance of the surface level of the water leaving them uninjured. He adds that, if the District Engineer considers that the embankments are not high enough to give perfect security, they might be raised higher; but that rather than delay any longer, he would be content to try them of the height suggested; feeling confident that they will be of great value to the country. He concludes by expressing his dissent from the view taken by the Collector, backed by the Chief Engineer, that the works proposed should not be executed, because still better projects might be undertaken.

7. The Government have had the whole subject under their careful review; and they feel that the question is so purely a professional one, involving as it does many scientific points of enquiry, that they cannot decide with confidence in the matter, more especially as their professional advisers are themselves divided in opinion on the subject. But looking to the fact that the majority of the Officers engaged in the investigation are averse to the complete system of embankments: that the occurrence of floods, like that against which alone it is sought to provide, is of very rare contingency, perhaps once in a life time; that the remissions, even including the losses consequent on the great and rare flood of 1853, give a very small yearly average, viz., 167 Rupees per annum; that the effects of the ordinary inundations are more calculated to do good than effect harm; this Government deem it expedient to dismiss for the present the projects entered in the Budget, for embanking the Mahanuddee and Loherkundy rivers in Ganjam, as noticed in the margin,* subject to the ultimate decision of the Government of India, to whom the whole question will now be reported. It is remarked that Colonel Faber is averse not only to the complete system of embankments, but also to the partial and detached Dykes proposed by Lieutenant Phillips; but taking into consideration the opinion of the local Officers, who have immediately investigated the question and have ascertained for themselves the condition of the river, and that even Colonel Cotton has now signified his acquiescence in their proposals, the Government approve the construction of the detached embankments suggested by Lieutenant Phillips, at the aggregate expenditure noticed by Colonel Faber, viz., 6,326 Rupees. Government note that the local Officers recommend that the proposed work should be early undertaken, in order that it may be completed before monsoon sets in; and observing that the sum of 9,780 Rupees is available out of the advance of 30,000 Rupees sanctioned on the 12th February 1856, for the Mahanuddee embankments, as Colonel Faber states* that an outlay of 20,220 Rupees has been laid out on that project from that source, they grant sanction for the sum of 6,326 Rupees out of the above balance, and authorize the immediate execution of the partial works proposed by Lieutenant Phillips.

* No. 1 of 1856-57, or 11 of 1858-59.
Embanking the Mahanuddee from Aska to Kalada, 33¼ miles 64,840 Rupees.

No. 1 of Budget Statement No. 2 of 1857-58. or 322 of 1858-59.
Embanking the Loherkundy, from Kolundah to its junction with the Mahanuddee, 9 miles, 21,850 Rupees.

* Vide Chief Engineer's letter 22nd March 1858, No. 8320, end of para. 7.

8. Under this resolution, items No. 1 of the Budget of 1856-57 or No. 11 of that of 1858-59, and No. 1 of Budget Statement No. 2 of 1857-58, or No. 322 of that of 1858-59, will be left out of future Budgets; and Colonel Faber's letters dated 18th February 1858, No. 7478. and 23rd March 1858, No. 8320, with correspondence enclosed, and Colonel Cotton's present letter dated 23rd July 1858, No. 21, will be submitted for the information of the Government of India with reference to para. 12 of Colonel Baker's letter of the 11th July 1856, No. 3173.

(Signed) T. PYCROFT,
Chief Secretary.

No. 85. Ordered in consequence that the following letter be dispatched.

From T. PYCROFT, Esq., Chief Secretary to the Government of Fort Saint George; to Lieut.-Colonel R. STRACHEY, Officiating Secretary to the Government of India, D. P. W., dated 13th September 1858, No. 1880.

SIR,

1. I am directed by the Madras Government to submit for the information and orders of the Government of India, the accompanying correspondence, containing the reports and views of the professional Officers of this Government, on the question of embanking the Mahanuddee river and its tributaries in the District of Ganjam; information in respect to which, was called for in para. 12 of Colonel Baker's letter of the 11th July 1856, No. 3173, conveying the orders of the Supreme Government, in the Budget of Public Works proposed for this Presidency for 1856-57.

From Chief Engineer, 18th February 1858, No. 7478.
Giving cover to the following.
Letter from Colonel Cotton, 13th May 1857, No. 15.
Do. Lieut. Moberly, 15th May „ „ 477.
Do. Colonel Cotton, 10th July „ „ 17.
Do Lieut. Blagrave, 2nd Janv. 1858, „ 11.
Do. Mr W. Knox, 8th „ „ „ 14.
Report of Lieut. Harrington, Executive Engr., 12th Dec. 1857.
From Chief Engr., 22nd March 1858, No. 8320.
Giving cover to the following.
Letter from Mr. W. Knox, 1st March 1858, No. 85.
Do. Lieut. Blagrave, 24th Feby. „ „ 150.
Report of Lieut. Phillips, Executive Engr., dated 28th Janv. 1858.
From Colonel F. C. Cotton, 23rd July 1858, No. 21.

2. In Mr. Bourdillon's letter of the 13th February 1856, No. 190, A., it was reported that an estimate of 64,840 Rupees was ordered to be entered in the Budget of 1856-57, for embanking the Mahanuddee river at a point near Aska, where it receives its tributary the Rooshookoolea, to Kolada about 33 miles distant; and that considering the case one of emergency, with reference to a representation previously received from Messrs. Binny and Co., of the losses suffered by them in common with other holders of land, in consequence of the inundations of the Mahanuddee, an advance of 30,000 Rupees was authorized by this Government for constructing the embankments where they were more pressingly required, and for preparing for the Head Sluices which formed part of the work. In their reply of the 22nd March 1856, No. 1215, the Government of India confirmed the authority granted by this Government for the abovementioned advance of 30,000 Rupees; but at the same time communicated correspondence and papers, which resulted in the Government of India sanctioning the abandonment of the embankments of the Damoodah river in Bengal. And in their further letter of the 11th July 1856, No. 3173, passing orders on the Public Works Budget of this Presidency for 1856-57, para. 12, they referred to the doubts they had previously expressed of the propriety of commencing a system of embankments in the Mahanuddee; and considering the defective information, in respect to the professional bearings of the project and the condition of the river, they withheld their sanction to any further outlay, until furnished with full and satisfactory information on the several points noticed by them, and until it could be shewn that the evils attendant on the Damoodah embankments were not likely to result in the case of the Mahanuddee. This Government accordingly called upon the Chief Engineer to give his attention to the remarks of the Government of India, and besides supplying the details required by them, to obtain the opinion of Colonel F. C. Cotton who had recently inspected the river, in order that a complete report might be prepared, for submission to the Government of India.

3. On reference to the accompanying correspondence, it will be observed that with his letter of the 18th February 1858, No. 7478, Colonel Faber submitted letters from Colonel Cotton, Lieutenant Moberly, Acting District Engineer of Ganjam, Lieutenant Blagrave, subsequently District Engineer, and Mr. Knox, Acting Collector, with a report from Lieutenant Harrington Executive Engineer. Lieutenant Colonel Cotton strongly advocated the embankments; Lieutenant Moberly opposed their construction, and notwithstanding faulty calculation and the adverse criticism of Colonel Cotton, Colonel Faber was of opinion that his views were entitled to attention, especially supported as they were by the later and fuller report of Lieutenant Harrington. This Officer stated that the floods were only complained of on the low lying lands, and that these floods were caused not so much by the water topping the banks, as by rushing down the open irrigation Canals on either hand, and by the want of outfall to this water and the local drainage while the river was full; and he was of opinion that as the length of the river was small, and its

slope and that of the adjacent country very great, the submergence was of too short duration to do much injury, and that it was more than doubtful whether the fertile effect of the rich deposits left by the inundation, did not fully compensate for any damage done by it, as the cultivation, chiefly Rice and Sugar-cane, could not suffer unless several days under water, which it never was in consequence of the floods of the Mahanuddee. Lieutenant Harrington was therefore averse to continuous embankments, and proposed instead, the maintenance and strengthening of small detached prices only, with sluices to all the channels opening from or into the river, in order to prevent the flood water from rushing down them, and committing, as it now did, the only ravages complained of, viz. tearing up the channel beds and depositing sand on the fields in their neighbourhood. Lieutenant Blagrave supported Lieutenant Harrington in these views; and Mr. Knox said that the Ryots did not care for an extended embankment, but rather required banks at particular points only. Colonel Faber agreed with the majority of these Officers, and recommended sanction to the estimate prepared by Lieutenant Harrington, for earthwork in repairing and extending old Dykes, and for Sluices to the heads of the irrigating channels referred to, amounting after deductions in the Central Office, to 4,080 Rupees in the aggregate.

4. With his second communication, dated 22nd March 1858, No. 8320, Colonel Faber forwarded further letters from Mr. Knox and Lieutenant Blagrave, with a report from Lieutenant Phillips, who had succeeded Lieutenant Harrington as Executive Engineer. In this report, Lieutenant Phillips minutely described the characteristic features of either bank of the Mahanuddee from the Sea to Aska, and shewed that by means of cross sections and careful enquiries, he had ascertained that only in seven places, four on the left and three on the right, did the ordinary floods overtop the banks or do any damage. The great flood that gave rise to the proposition of embanking the Mahanuddee, he said, occurred in 1853; and he added that the oldest inhabitants mentioned to him that such a flood had never before or afterwards occurred within their knowledge. It was therefore for the ordinary floods, that Lieutenant Phillips proposed to provide; and his proposition was to throw up Dykes at the seven places where, he had ascertained, the river overtopped its banks, aggregating altogether a little more than five and a half miles in length, and to provide these with small circular sluices, to enable the Ryots to obtain water for the fields while the river was high enough to afford them a small supply, with a small Head Sluice to an irrigating channel near Sunthashapooram, at a total cost of only 6,326 Rupees, viz. 5,826 Rupees for earthwork, and 500 Rupees for masonry.

5. Lieutenant Blagrave, the District Engineer, fully concurred with Lieutenant Phillips in the necessity for the works thus proposed by him; and added that from what he had seen of the river and the calculations he had made, they appeared to him to be sufficient to effect the object for which they were designed. Mr. Knox, the Acting Collector, looked at the matter in a revenue point of view, and declared his decided opinion, that the interest on the heavy outlay necessary to bank the whole river, would be far more than any remission likely to be called for on account of the floods. He therefore suggested that the works proposed by Lieutenant Phillips be tried in the first instance; adding that so much remained to be done in Ganjam, and so many paying projects remained to be brought forward, that he was very averse to support any expenditure not likely to make a good return to Government and to the inhabitants. But the Chief Engineer on this occasion declared, that he could not concur with the Collector and the District Engineer, in recommending that the partial works proposed by Lieutenant Phillips should be tried, as the object was to afford protection against the effects of a recurrence of a flood like that of 1853, and not against those of ordinary seasons which probably did more good than harm and to guard against a flood like that referred to, Lieutenant Phillips' measures were manifestly inadequate. Then, referring to the return of remissions furnished by Lieutenant Phillips, Colonel Faber pointed out that during the last thirteen years, the remissions amounted to but 6,811 Rupees; and that if from this 3,223 were deducted on account of the flood of 1853, against a recurrence of which neither the proposed works nor any others would in the opinion of the District Engineer be of any avail, as also a sum of 1,416 Rupees caused by the damage done by the Goodala Nullah or Ingelly river, a tributary of the Rooshookoolea itself a tributary of the Mahanuddee, there remained but 2,172 Rupees of loss actually due in the course of thirteen years, to the ordinary inundations from the Mahanuddee below Aska, or about 167 Rupees per annum, probably less than the amount usually granted on a similar area of cultivated land any where else.

6. These facts proceeded Colonel Faber, and a careful consideration of the subject, with the clearer light thrown upon it by the recent investigations of the local Officers, satisfied him, that in consequence of looking upon the great flood of 1853 as a common one, instead of one so rare as to occur perhaps not more than once in a life time, the dangers from the Mahanuddee had been greatly exaggerated; and that losing sight of the great benefit derived by the land from the river's overflow, the necessity of shutting it in with embankments had been too hastily assumed, without consideration of the great difficulty and cost of their construction, or of the little advantage to be gained from them. He added that the advantage had now been shewn to be quite incommensurate with the great cost of constructing and maintaining the vast system of embankments and sluices, that would be required thoroughly to control the river and the drainage from the lands; and that while discountenancing the partial measures proposed, he quite agreed with the Collector that there were many paying projects in Ganjam deserving of more attention than this. Colonel Faber therefore recommended that beyond maintaining, and perhaps strengthening, the Dykes already made near Aska and certain other localities, the question of embanking the Mahanuddee and its tributaries be for the time at least set aside, and that the amounts entered for the purpose in the Budgets of 1856-57 and 1857-58, be now withdrawn from the future expenditure of the Ganjam District.

7. These several papers having been referred to Colonel F. C. Cotton for such remarks as he might wish to offer, in support of the views he had expressed in favor of embanking the Mahanuddee, that Officer submitted the letter which forms the last of the series now forwarded. In this letter Colonel Cotton states that, after reading what has been written by the several Officers alluded to above, he has no hesitation in agreeing with Lieutenant Blagrave in his support to Lieutenant Phillips' proposals, and that he feels sure that the position of the different embankments is judicious, and that "it is advisable to rescue so much land at least from the river." He remarks that he has repeatedly asserted that estimating the value of these works by the remissions of former years, is an utter mistake; that the crops are now in a precarious state; and that the cultivators of Ganjam are not in a condition to gamble with the river, or stake crops of Sugar, or other valuable products, upon the chance of the surface level of the water leaving them uninjured. He adds that, if the District Engineer considers that the embankments are not high enough to give perfect security, they might be raised higher, but that rather than delay any longer, he would be content to try them of the height suggested; feeling confident that they will be of great value to the country. He concludes by expressing his dissent from the view taken by the Collector, backed by the Chief Engineer, that the works proposed should not be executed, because still better projects might be undertaken.

8. This Government have had the whole subject under their careful review; and they feel that the question is so purely a professional one, involving as it does many scientific points of enquiry, that they can hardly decide with confidence in the matter, more especially as their professional advisers are themselves divided in opinion on the subject. But looking to the fact that the majority of the Officers engaged in the investigation are averse to the complete system of embankments; that the occurrence of floods, like that against which alone it is sought to provide, is of very rare contingency, perhaps once in a life time; that the remissions, even including the losses consequent on the great and rare flood of 1853, give a very small yearly average, viz. 167 Rupees per annum; that the effects of the ordinary inundations are more calculated to do good than effect harm; this Government have deemed it expedient to dismiss for the present the projects entered in the Budget, for embanking the Mahanuddee and Loherkundy rivers in Ganjam, as noticed in the margin,* subject to the ultimate decision of the Government of India, to whom they now submit the whole question.

*No. 1 of 1856-57, or 11 of 1858-59.
Embanking the Mahanuddee from Aska to Kolada, 32¼ miles, 61,840 Rupees.
No. 1 of Budget Statement No. 2 of 1857-58, or 322 of 1858-59.
Embanking the Loherkundy from Kolundah to its junction with the Mahanuddee, 9 miles, 21,850 Rupees.

9. It will be remarked that Colonel Faber was averse not only to the complete system of embankments, but also to the partial and detached Dykes proposed by Lieutenant Phillips; but taking into consideration the opinion of the local Officers, who had immediately investigated the question and had ascertained for themselves the condition of the river, and that even Colonel Cotton himself signified his acquiescence in their proposals, the Government approved the con-

struction of the detached embankments suggested by Lieutenant Phillips, at the aggregate expenditure of 6,326 Rupees; and noting that the local Officers recommended the early commencement of the proposed work, in order that it might be completed before the monsoon set in, they have authorized its immediate execution; sanctioning its cost out of a balance of 9,780 Rupees, available from the advance of 30,000 Rupees sanctioned on the 12th February 1856, for the Mahanuddee embankments, upon which an outlay of 20,220 Rupees has been laid out.

No. 21

Fort St. George,
dated 23d July, 1858

From Lieut.-Colo. F. C. Cotton Engineers
To The Secretary to Government, Revenue Depart.

Sir,

Para 1st. I regret to find that owing to my absence on leave from Madras, the papers referred to me by Mr. Bayley regarding certain improvements in the District of Ganjam, recommended by Lieutenant Phillipps (Extract Minutes of Consultation No. 920 of 11th May 58) have remained till this time unanswered.

2d. After reading what has been written on these subjects by Lieutenant Phillipps, Lieut. Blagrave the District Engineer, and Colonel Faber, I have no hesitation in saying that I agree with Lieut. Blagrave in the support he has given to Lieut. Phillipps' proposal. I feel quite sure that the position of the embankments proposed is judicious, and that it is advisable to rescue so much land at least, from the River, I have again and again said that Estimating the Value of these works by the remissions of former years is a utter mistake. The Crops and now in a precarious state, and the Cultivators of Ganjam are not in a condition to gamble with the River, and stake Crops of Sugar or other valuable products, upon the chance of the surface level of the water leaving them uninjured

I arrived in India.

I have the honor to be,
Sir,
Your most obedient Servt

Fort St. George,
23d July 1858

Fred Mollon Lieut.t Colo
Engineer &

From Lieut.t Colonel F. C. Cotton
To The Secretary to Government
Revenue Department

uninjured. Rice is grown in such lands to be sometimes gathered and sometimes lost; occasionally yielding an abundant harvest, but more frequently injured by the floods. In any Country this would be an unsatisfactory state of things, but where the people are as poor as they are in India, such risk is ruinous. If the District Engineer considers that the embankments are not high enough to give perfect security, they might be raised higher, but rather than delay longer, I would be content to try them of the height suggested, feeling confident that they will be of great value to the Country.

3d. I do not know the Mouth of the Gayjam River, but I think Lieutenant Phillipps is right in making some effort to improve the entrance. If his proposal is injudicious it would be advisable for the District Engineer to suggest something more likely to prove efficacious.

4th. The Sluices recommended should all be built

5th. I must express my dissent from the view taken by the Collector, and backed by the Chief Engineer, that the work his proposed should not be executed, because still better projects might be undertaken. This principle has been the watch word common excuse for doing nothing ever since

J

P.W. 9.

Extract from the Minutes of Consultation Under Date the 13th August 1858.

Read the following Letter from Lieut. Col. H. N. Cotton. Moulmein 23 July 1858.

1. Under authority of Bengal Act No. 19 of 1850, an Act. 12th February 1850, No. 190, an Act. making up £4,840 0 0 was entered in the Budget of 1858/59, for embankments. The Commissioner of Tenasserim, when in Moulmein, was requested, by the Chief Commissioner, to select, and cause to be constructed, such embankments, and drains, as he might consider necessary for the protection of the cultivation in the neighbourhood of Moulmein. In compliance with this request, Captain Latter, Executive Engineer, Moulmein, reported from Sleepy Hollow, on the 6th January 1858, that Major Fytche, Commissioner of Tenasserim, had selected the following works, as those which required to be undertaken immediately, in order to protect the cultivation from the inundations of the Salween River, during the ensuing rains.

P. Works. No. 1629.

1858 Despatched to Govt. 15th September. Encls. 5 Recd. 4-10-58. With Memo. and Draft Estimate No. 1879. 13th September 1858.

With reference to Colonel Fytche's Minute of 20th regarding certain improvements in the District of Tavoy and Mergui. Under that Minute Major Latter, Executive Engineer, supplied the Lieut. Governor with estimates for carrying out the works which he considered necessary.

C.D. 18 May 58 No. 39-46

Rs. 29,000 Rs. 1,000 Rs. 30,000

15 Sept 58

1858.

27 Aug - 4 Sept

and for preparing for the head sluices which formed part of the work. This circumstance was at the same time duly reported to the Govt of India, in a letter dated 12th February 1856, No. 190 A. In their reply of the 22d March 1856, No. 1215, the Govt of India confirmed the authority granted by this Govt for the abovementioned advance of 30,000 Rs; but at the same time communicated correspondence & papers, which resulted in the Govt of India sanctioning the abandonment of the embankments of the Damoodah river in Bengal. And in their further letter of the 11th July 1856, No. 273, passing orders on the Public Works Budget of this Presidency for 1856/57, para 12, they referred to the doubts they had previously expressed as to the propriety of commencing a system of embankments in the Mahanuddee; and considering the defective information, in regard to the professional bearings of the project and the conditions

sanction to any further outlay, until furnished with full and satisfactory information on the several points noticed by them, and until it could be shewn that the evils attendant on the Damoodah embankments were not likely to result in the case of the Mahanuddee. This Govt in Pub. Mins. Cons. 12th August 1856, No. 1405, (Paras 11), accordingly called upon the Chief Engr to give his attention to the remarks of the Govt of India, and besides supplying the details required by that authority, to obtain the opinion of Col P. C. Cotton who had recently inspected the river, in order that a complete report might be prepared, for submission to the Govt of India.

2. With his letter of the 18th Feb 58, No. 7478, Col Fabre submitted letters from Col Cotton, Lieut Moberly Acting Assistt Engr of Jajpore, Lieut Blagrave Subsequently same, Lieut Blagrave, and Mr. Knox Acting

Colr. with a report from Lieut Harrington Executive Engr. Dt. Col Cotton strongly advocated the embankments; Lieut Moberly opposed their construction, and notwithstanding faulty calculations and the adverse criticism of Col Cotton, Col Faber was of opinion that his views were entitled to attention, especially supported as they were by the Caber and fuller reports of Lieut Harrington. This Officer stated that the floods were only complained of on the low lying lands, and that these floods were caused not so much by the rivers topping the banks, as by rushing down the open irrigation canals on either hand, and by the want of outfall to the rivers and the local drainage while the river was full; and he was of opinion that, as the lengths of the rivers was small and its slope and that of the adjacent country very great, the submergence was of too short duration to do much

the whole river, would be far more than any reimpersion likely to be called for on account of the floods. He therefore suggested that the works proposed by Lieut Philipps be tried in the first instance, adding that so much remained to be done in Sanjam, and so many paying projects remained to be brought forward, that he was very averse to support any expenditure not likely to make a good return to Govt and to the inhabitants. But the Chief Engr on this occasion declared, that he could not concur with the Col & the District Engr, in recommending that the partial works proposed by Lieut Philipps should be tried, as the object was to afford protection against the effects of a recurrence of a flood like that of 1853, and not against those of ordinary seasons, which probably did more good than harm, and to guard against a flood like that referred

to, Lieut Philipps's measures were manifestly inadequate. Then, referring to the returns of remissions furnished by Lieut Philipps, Col Faber pointed out that during the last thirteen years, the remissions amounts to but 6,811 Rs, and that if from this 3223 Rs were deducted on account of the flood of 1853, against a recurrence of which neither the proposed works nor any others would in the opinion of the District Engr be of any avail, as also a sum of 1616 Rs caused by the damage done by the Goodala Nullah or Ingly River, a tributary of the Roodkee Koolee itself a tributary of the Mahanuddee, there remained but 2172 Rs of loss actually due in the course of thirteen years, to the ordinary inundations from the Mahanuddee below Asika, or about 167 Rs per annum, probably less than the amount usually granted on a similar area of cultivated land any where else.

5. These facts, proceeded Col Faber, and a careful consideration of the subject, with the clearer light thrown upon it by the recent investigations of the local officers, satisfied him, that in consequence of looking upon the great flood of 1853 as a common one, instead of one so rare as to occur perhaps not more than once in a life time, the dangers from the Mahanuddee had been greatly exaggerated; and that losing sight of the great benefit derived by the land from the river's overflow, the necessity of shutting it in with embankments had been too hastily assumed, without consideration of the great difficulty and cost of their construction, or of the little advantage to be gained from them. He added that the advantages had now been shewn to be quite

inconsiderable with the great cost of constructing and maintaining the whole system of embankments and slices, that would be required thoroughly to control the river and the drainage from the lands; and that while discountenancing the partial measures proposed, he quite agreed with the Col.r that there were many paying projects in Sanjam deserving of more attention than this. Col Faber therefore recommended that, ~~the~~ beyond maintaining and perhaps strengthening the dykes already made near Aska and certain other localities, the question of embanking the Mahanuddee and its tributaries be for the time at least set aside, and that the amounts entered for the purpose in the Budgets of 1856/57 and 1857/58, be now withdrawn from the future expenditure of the Sanjam District.

6. These several papers having been referred to Col. F.C. Cotton for such remarks as he might wish to offer, in support of the views he had expressed in favor of embanking the Mahanuddee, that officer now submits the letter which is recorded at the head of these Proceedings. Col Cotton observing (~~remarked~~) that, after reading what has been written by the several officers alluded to above, he has no hesitation in agreeing with Lieut Haycraft in his support to Lieut Phillipps proposals, and that he feels sure that the position of the different embankments is judicious, and that "it is advisable to rescue as much land at least from the river." He remarks that he has repeatedly observed that estimating the value of these works by the remittens of former years, is an utter mistake, that the crops are

* E. M.C. 7th April 1858, N. 601.
— " — 14th May 1858, N. 920.

now in a precarious state, and that the cultivators of Jamaica are not in a condition to gamble with the river, or stake crops of sugar, or other valuable products, upon the chance of the surface level of the water leaving them uninjured. He adds that, if the District Engr considers that the embankments are not high enough to give perfect security, they might be raised higher, but that rather than delay any longer, he would be content to try them of the height suggested; feeling confident that they will be of great value to the country. He concludes by expressing his dissent from the view taken by the Colr, backed by the Chief Engr, that the works proposed should not be executed, because still better projects might be undertaken.

7. We first have had the whole subject under their careful review; and they feel that the question is so purely a professional one, involving as it does many scientific points of enquiry, that they cannot decide with confidence in the matter, more especially as their professional advisers are themselves divided in opinion on the subject. But looking to the fact that the majority of the officers engaged in the investigation are averse to the completion of a system of embankments; that the occurrence of floods, like that against which alone this might to provide, is of very rare — occurrence, perhaps once in a contingency, perhaps once in a lifetime; that the remissness, even including the loss consequent on the great and rare flood of 1853, give a very small yearly average, viz 167 Rs per annum; that the effects of the ordinary inundations are more calculated to do good than effect harm; and more espe-

cially considering that circumstances have induced the Govt of India to sanction the abandonment of the Damoodah embankments in Bengal, as intimated in Col Baker's letter of the 22d March 1856, No 1215, the Govt deem it expedient to dismiss for the present the proposals entered in the Budget, for embanking the Mahanuddee and Cohrkundy rivers in Sambulpore, as noticed in the* margin, subject to the ultimate decision of the Govt of India, to whom the whole question will now be reported. It is remarked that Col Faber is averse not only to the complete system of embankments, but also to the partial and detached dykes proposed by Lieut Philipps, but taking into consideration the opinion of the local officers, who have immediately investigated the question and have ascertained for themselves the condition of the river, and that even Col Cotton has now signified his acquiescence in their proposals, the Govt approve the construction of the detached embankments suggested by Lieut Philipps, at the approximate expenditure noticed by Col Faber, viz 6,320 Rs. Govt note that the local officers recommend that the proposed work should be early undertaken, in order that it may be completed before the monsoon sets in; and observing that the sum of 9,780 Rs is available out of the advance of 30,000 Rs sanctioned on the 12th February 1856 for the Mahanuddee embankments, as Col Faber states that an outlay of 20,220 Rs has been laid out on that project from that source, they sanction for the sum of 6,320 Rs out of the above balance, and authorize the immediate ex-

* No 1 of 1856/57, or 11 of 1858/59.
Embanking the Mahanuddee from Atka to Kolasla, 2½ miles 64,840 Rs.

No 1 of Budget Statement No 2 of 1857/58, or 322 of 1858/59
Embanking the Cohrkundy from Kolundah to its junction with the Mahanuddee, 9 miles — 21,850 Rs.

* vide Chief Engr's letter 22d March/58, No 8320, end of para 7.

cution of the partial works proposed by Lieut. Phillipps.

8. Under this resolution, items No. 1 of the Budget of 1856/57 or No. 11 of that of 1858/59, and No. 1 of Budget Statement No. 2 of 1857/58, or No. 322 of that of 1858/59, will be left out of future Bud. Sets; and Col Baker's letters dated 18th Feb/58, No. 7478, and 23d March 1858, No 8320, with the correspondence enclosed, and Col Cotton's present letter dated 23d July 1858, No. 21, will be submitted for the information of the Govt of India with reference to para 13 of Col Baker's letter of the 11th July 1856, No. 3173, accompanied by the following Communications from this Govt.

To Capt Phillipps R.E. Chief Engr Circle No 14

Col J. C. Cotton R

Cons 18th May/58 Re 39-40

Public Works 1858 Depte
Dp. to Cons: 18th Sepr:

No 1879.

Extract Mins of Cons:
Dd 13th Sepr: /58.

From the Offg. Chief Engr. 1st/21st Augt/58
No 2505 in Secy: 4th Janry/59 1:26-27-3

From the Offg. Chief Engr. Dt
8th Novr/58 C No 2818 in Cons
30th Novr/58
No 2531-

Under the opinions expressed by the several Officers engaged in the investigation of the Project for embanking the Mahanaddy and Sohun Nuddy Rivers in Sumbulpore, dismissed expedient to dismiss for the present the projects for those works entered in the Budget, subject to the decision of the Govt of India. Estimated however of the construction of the two Embankments, at an outlay of Rs 6,22,6.

Public Works Dept.
13th September/58

No 1880

Major R. Strachey
Offg Secy, Govt of India,

Sir,

1. I am directed by the Madras Govt to submit for the information and orders of the Govt of India, the accompanying correspondence, containing the reports and views of the professional officers of this Govt, on the question of embanking the Mahanaddee river and its tributaries in the District of Sumbulpore; information in respect to which, was called for in para 12 of Col Baker's letter of the 11th July 1856, No 3173, conveying the orders of the Supreme Govt on the Budget of Public Works proposed for this Presidency for 1856/57.

From Chief Engr, 18th Feby/58, No 7478.
giving cover to the following,
Letter from Col Cotton, 13th May/57, No 15.
— do — Lieut Moberly, 15th May/57, No 477.
— do — Col Cotton, 10th July/57, No 17.
— do — Lieut Blagrave, 2nd Jany/58, No 11.
— do — Mr. W. Knox, 8th Jany/58, No 14.
Report of Lieut Barrington, Ex. Engr, 12th Decr/57.
From Chief Engr, 22nd March/58, No 8320.
giving cover to the following,
Letter from Mr. W. Knox, 1st March/58, No 135.
— do — Lieut Blagrave, 26th Feby/58, No 150.
Report of Lieut Phillipps, Ex. Engr dated 28th Jany/58.
From Col T.C. Cotton, 23rd July/58, No 21.

c No 83 to 84.

2. In Mr Bourdillon's letter of the 12th February 1856, No 190, A, it was reported that an estimate of 64,840 Rupees was ordered to be entered in the Budget of 1856/57, for embanking the Makamuddee river at a point near Atka, where it receives its tributary the Roorkookoolee, to Kolada about 33 miles distant; and that considering the case one of emergency, with reference to a representation previously received from Messrs Dennison & Co, of the losses suffered by them

suffered by them in common with other holders of land, in consequence of the inundations of the Makamuddee, and advance of 30,000 Rs was authorized by His Government for constructing the embankments where they were more peculiarly required, and for preparing for the Reed sluices which formed part of the work. In their reply of the 22nd March 1856, No 1215, the Government of India confirmed the authority granted by

by this Government for the above-mentioned advances of 30,000 Rs; but at the same time communicated correspondence and papers, which resulted in the Government of India sanctioning the abandonment of the embankments of the Damoodah river in Bengal. And in their further letter of the 11th July 1856, No. 3173, passing orders on the Public Works Budget of this Presidency for 1856/57, para 12, they referred to the doubts they had previously expressed of the propriety of commencing a system of embankments in the Mahanuddee; and considering the defective information, in respect to the professional bearings of the project and the condition of the river, they withheld their sanction to any further outlay, until furnished with full and satisfactory information on the several points noticed by them, and until it could be shewn that the evils attendant on the Damoodah embankments were not likely to result in the

the case of the Madras Presidency. That Government accordingly called upon the Chief Engineer to give his attention to the remarks of the Government of India, and besides supplying the details required by them, to obtain the opinion of Colonel F.C. Cotton who had recently inspected the river, in order that a complete report might be prepared, for submission to the Government of India.

3. On reference to the accompanying correspondence, it will be observed that with his letter of the 18th Feby 1858, No. 7478, Colonel Faber submitted letter from Colonel Cotton, Lieutenant Mobely acting District Engineer of Tanjore, Lieutenant Blagrave subsequently District Engineer, and Mr. Knox acting Collector, with a report from Lieut. Harrington Executive Engr. Lieut. Col Cotton strongly advocated the embankment, Lieut Mobely opposed this construction, and notwithstanding faulty calculations and the adverse criticism of Colonel Cotton, Colonel Faber was of opinion that his views were entitled to attention, especially supported as they were by

by the later and fuller report of Lieutenant Harrington. This Officer stated that the floods were only complained of on the low lying lands, and that these floods were caused not so much by the water topping the banks, as by pushing down the open irrigation Canals on either hand, and by the want of outfall to this water and the local drainage while the river was full; and he was of opinion that as the length of the river was small, and its slope and that of the adjacent country very great, the submergence was of too short duration to do much

injury, and that it was more than doubtful whether the fertilizing effect of the rich deposits left by the inundation, did not fully compensate for any damage done by it, as the cultivation, chiefly rice and sugarcane, could not suffer unless several days under water, which it never was in consequence of the floods of the Mahanuddee. Lieut. Harrington was therefore averse to extensive embankments & proposed instead the maintenance and strengthening of small detached pieces only, with sluices to all the channels opening from or into the river, in order to prevent the flood waters from returning down them, and communicating, as it now did, the only ravages complained of, viz tearing up the channel beds and depositing sand on the fields in their neighbourhood. Lieut Blagrave

supported Lieut Barrington in these views; and Mr. Knox said that the rejots did not care for an extended embankment, but rather required banks at particular points only. Col Faber agreed with the majority of the Officers, and recommended conc. tion to the estimate prepared by Lieut Barrington, for the earthwork in repairing and ex. tending old dykes, and for sluices to the heads of the irrigating channels referred to, amounting after deductions in the Central Office to 4,080 Rs in the aggregate.

3. With a later communication dated 22d March/58, No 8320, Col Faber forwarded further letters from Mr. Knox and Lieut Blagrave, with a report from Lieut Philipps, who had succeeded Lieut Barrington as Executive Engr. In this report, Lieut Philipps minutely described the characteristic features of either bank of the Mahanuddee from the sea to Attka, and shewed that by means of cross sections and careful enquiries, he had ascertained that only in seven places, four on the left and three on the right, did the ordinary floods overtop the banks or do any damage. The great flood that gave rise to the proposition of embanking the Mahanuddee, he said, occurred in 1853; and he added that the oldest inhabitants mentioned to him that such a flood had never before or afterwards occurred within their knowledge. It was therefore for the ordinary floods, that Lieut Philipps proposed to provide; and his proposition was to throw up dykes at the seven places where, he had ascertained, the river overtopped its banks, of repeating altogether a little more than five and a half miles in

length, and to provide these with small circular sluices, to enable the ryots to obtain water for the fields while the river was high enough to afford them a small supply, with a small head sluice to an irrigating channel near Kunthashapooram, at a total cost of only 6,326 Rs, viz 5,826 Rs for earthe work, and 500 Rs for masonry.

4. Lieut. Blagrave the District Engr fully concurred with Lieut Philipps in the necessity for the works thus proposed by him; and added that from what he had seen of the river & the calculations he had made, they appeared to him to be sufficient to effect the object for which they were designed. Mr. Knox, the Acting Collr, looked at the matter in a revenue point of view, and declared his decided opinion, that the interest on the heavy outlay necessary to bank

injury, and that it was more than doubtful whether the fertile effect of the rich deposits left by the inundation, did not fully compensate for any damage done by it, as the cultivation, chiefly rice and sugar cane, could not suffer unless several days under water, which it never was in consequence of the floods of the Mahanuddie. Lieutenant Harrington was therefore averse to continuous embankments, and proposed instead, the maintenance and strengthening of small detached pieces only, with sluices to all the channels opening from or into the river, in order to prevent the flood water from rushing down them, and committing, as it now did,

did, the only ravages
complained of, viz tearing
up the channel beds and
depositing sand on the
fields in their neighbour-
-hood. Lieutenant Blagrave
supported Lieutenant
Harrington in these views,
and Mr Knox said that
the ryots did not care for
an extended embankment,
but rather required bunds
at particular points only.
Colonel Faber agreed with
the majority of these
officers, and recommended
sanction to the estimates
prepared by Lieutenant
Harrington, for earth-
-work in repairing and
extending old dykes, and
for sluices to the heads
of

of the irrigating channels
referred to, amounting after
deductions in the central
office, to 4,080 Rupees in
the aggregate.

4. With his second
Communication dated 22d
March 1858, No 8,320, Colonel
Faber forwarded further
letters from Mr Knox
and Lieutenant Blagrave,
with a report from Lieut.
Philipps, who had super-
-ceeded Lieutenant Harring-
-ton as Executive Engineer.
In this report, Lieutenant
Philipps minutely des-
-cribed the characteristic
features of either bank
of the Mahanuddee from
the sea to Attka; and
shewed that by means
of

of cross sections and on careful enquiries; he had ascertained that only in seven places, four on the left and three on the right, did the ordinary floods overtop the banks or do any damage. The great flood that gave rise to the proposition of embanking the Mahanuddee, or see Lord, occurred in 1823, and he added that the oldest inhabitants mentioned to him that such a flood had never before or afterwards occurred within their knowledge. It was therefore for the ordinary floods, that Lieutenant Shiliffe

proposed to provide; and his proposition was to throw up dykes at the seven places where, he had ascertained, the river overtopped its banks, aggregating altogether a little more than five and a half miles in length, and to provide these with small circular sluices, to enable the ryots to obtain water for their fields while the river was high enough to afford them a small supply, with a small head sluice to an irrigating channel near Sinthashpoorum, at an estimated cost of only 6,326 Rs., viz 5826 Rupees for earth work, and 500 Rs. for

for masonry.

5. Lieutenant Blac-
-grave, the District Engi-
-neer, fully concurred in
with Lieutenant Philipps
in the necessity for the
works thus proposed by him,
and added that from what
he had seen of the river and
the calculations he had be-
made, they appeared to him
to be sufficient to effect the
object for which they
were designed. Mr Knox,
the acting Collector, look-
-ed at the matter in a
revenue point of view
and declared his decided
opinion, that the interest on the
heavy outlay necessary to build

the whole river, would be far
more than any remission likely
to be called for on account of
the floods. He therefore suggested
that the works proposed by
Lieut Philipps be tried in the
first instance; adding that so
much remained to be done in
Sanjam, and so many paying
projects remained to be brought
forward, that he was very averse
to support any expenditure not
likely to make a good return to
Government and to the inhabitants.
But the Chief Engineer on this oc-
casion declared, that he could
not concur with the Collector
& the District Engineer, in recom-
mending that the partial works
proposed by Lieut Philipps
should be tried, as the object was
to afford protection against the
effects of a recurrence of a flood
like that of 1853, and not a-
against those of ordinary seasons
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a flood like that referred to, Lieut Philipps's measures were manifestly inadequate. Then, referring to the return of remissions furnished by Lieut Philipps, Col. Faber pointed out that during the last thirteen years, the remissions amounted to but 6,811 Rs, and that if from this 3223 were deducted on account of the flood of 1853, against a recurrence of which neither the proposed works nor any others would in the opinion of the District Engineer be of any avail, as also a sum of 1416 Rs caused by the damage done by the Soodala Nullah or Sugelly river, a tributary of the Roothoo-Koolea itself a tributary of the Mahanuddee, there remained but 2172 Rs of loss actually due in the course of thirteen years, to the ordinary inundations from the Mahanuddee below Ashta, or about 167 Rs per annum, probably less than the amount usually granted on a similar

area of cultivated land any where else.

6. These facts proceeded Coll Faber, and a careful consideration of the subject, with the clearer light thrown upon it by the recent investigations of the local officers, satisfied him, that in consequence of looking upon the great flood of 1853 as a common one, instead of one so rare as to occur perhaps not more than once in a life time, the dangers from the Mahanuddee had been greatly exaggerated, and that losing sight of the great benefit derived by the land from the river's overflow, the necessity of shutting it in with embankments had been too hastily assumed, without consideration of the great difficulty and cost of their construction, or of the little advantage to be gained from them. He added that the advantage had

now

now been shewn to be quite incommensurate with the Great Cost of Constructing and maintaining the vast System of embankments and Sluices, that would be required thoroughly to control the river and the drainage from the lands; and that while discountenancing the partial measures proposed, he quite agreed with the Colr that there were many paying projects in Ganjam deserving of more attention than this. Col. Faber therefore recommended that beyond maintaining and perhaps strengthening the dykes already made near Aska and certain other localities, the question of embanking the Mahanuddee and its tributaries be for the time at least set aside, and that the amounts entered for the purpose in the Budgets of 1856/57 and 1857/58 be now withdrawn from the future expenditure of the

Ganjam District.

7. These several papers having been referred to Colr J. C. Cotton for such remarks as he might wish to offer, in support of the views he had expressed in favor of embanking the Mahanuddee, that Officer submitted the letter which forms the last of the series now forwarded. In this letter Colonel Cotton states that, after reading what has been written by the several Officers alluded to above, he has no hesitation in agreeing with Lieutenant Blagrave in his support of Lieutenant Phillipps proposals, and that he feels sure that the position of the different embankments is judicious and that it is advisable to

resume

resene so much land at
least from the river". He
remarks that he has re-
peatedly asserted that
Estimating the value of
these works by the remissions
of former years, is an under-
mistake; that the crops
are now in a precarious
state; and that the culti-
vators of Ganjam are not
in a condition to gamble
with the river, or stake crops
of sugar, or other valuable
products, upon the chance
of the surface level of the
water leaving them unin-
jured. He adds that, if
the District Engineer
considers that the em-
bankments are not high

enough to give perfect se-
curity, they might be raised
higher; but that rather
than delay any longer, he
would be content to try
them of the height suggest-
ed, feeling confident that
they will be of great value
to the Country. He concludes
by expressing his dissent
from the view taken by the
Collector, backed by the
Chief Engineer, that
the works proposed should
not be executed, because
still better projects might
be undertaken.

8. This Government has
had the whole subject
under their careful review,
and they feel that the
question

question is so purely a pro-
-fessional one, involving
as it does many scientific
points of enquiry, that
they can hardly decide
with confidence in the
matter, more especially
as their professional advi-
sers are themselves divided
in opinion on the subject.
But looking to the fact
that the majority of the
Officers engaged in the
investigation are averse
to the complete system of
embankments, that the
occurrence of floods, like
that, against which alone
it is sought, to provide,
is of very rare contingency,
perhaps once in a life time,

that the remissions, even in-
-cluding the losses consequent
on the great and rare flood
of 1853, give a very small
yearly average, viz 167 Rs. per
annum; that the effects
of the ordinary inundations
are now calculated to do
good than effect harm;
~~and more especially~~ Con-
-sidering that circumstan-
-ces have induced the Govern-
-ment of India to sanction
the abandonment of the
Damoodah embankments
in Bengal, as intimat-
-ed in Colonel Baker's
letter of the 22nd March
1856, No. 1215, this Govern-
-ment have deemed it
expedient

expedient to dismiss for the present the projects entered in the Budget, for embanking the Mahanuddee and Soberkundy rivers in Ganjam, as noticed in the margin, subject to the ultimate decision of the Government of India, to whom they will now submit the whole question.

9. It will be remarked that Col. Faber was averse not only to the complete system of embankments, but also to the partial and detached dykes proposed by Lieutenant Philipps, but taking into consideration the opinion of the local Officers, who had immediately

* No 1 of 1856/57, or 110 of 1858/59.
Embanking the Mahanuddee from Aska to Kalada, 32½ miles, 64840 Rupees.
No 1 of Budget Statement No 20 of 1857/58, or 322 of 1858/59.
Embanking the Soberkundy from Kalundah to its junction with the Mahanuddee, 9 miles, 21,350

had ascertained for themselves the condition of the river, and that even Colonel Cotton himself signified his acquiescence in their proposals, the Government approved the construction of the detached embankments suggested by Lieut. Philipps, at the aggregate expenditure of 9,326 Rs. and pending that the local Officers recommend the early commencement of the proposed works, in order that it might be completed before the monsoon set in, they have authorized its immediate execution, sanctioning the draft out for balance of 9,780 Rs. available from the advance

advance of 30,000 Rs. sanctioned on the 13th February 1851 for the Mahanadee embankments, upon which an outlay of 20,220 Rs. has been laid out.

10. I am directed to express the hope, that the proceedings of the Madras Govt. in this case will meet the approbation of the Govt. of India.

I have &c.

(signed) J. P. Grant

Fort Saint George
13th September 1858

Public Works 1858 Sept.
Do to Govt. 14th Sept.

No. 1880.

To The Offg Secretary to the
Government of India
P. Wks. Dept.

Dated 13th Sept. 58.

Submitting correspondence containing the reports and views of the Professional Officers of this Government, on the question of embanking the Kakundee river & its tributaries in the District of Sanjam, stating that, under the circumstances therein represented, this Govt have deemed it expedient to dismiss from the Budget, the projects for those works, allowing only partial & detached embankments to be constructed, wherever necessary.

No. 85.

Ex. 5