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# MADRAS RECORD OFFICE.

## Government of Madras.

Public Works DEPARTMENT.

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153

Dated 24—11— 1857.

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No. 153. Extract from the Minutes of Consultation, under date the 24th November 1857, No. 2167.

Read again letter from the Chief Engineer, dated 22nd August 1856, and entered in Consultation 4th November 1856, No. 2050.

1. With this letter, the Chief Engineer submits Lieutenant Colonel F. C. Cotton's report on a tour of inspection in the Northern Districts, on which he was authorized to proceed under the orders conveyed in Extract Minutes of Consultation of the 12th February 1856, No. 201. Colonel Faber commences his notice of the report by mentioning the places and works successively visited by Lieutenant Colonel Cotton, and then proceeds to give a Summary of its contents, offering but few opinions or suggestions of his own regarding the course that Government should adopt, with reference to the propositions made by Lieutenant Colonel Cotton.

GANJAM DISTRICT.

*Munsoorcottah or Gopaulpore Harbour.*

2. The first place at which Lieutenant Colonel Cotton landed, after leaving Madras, was Munsoorcottah or Gopaulpore, in the Ganjam District; and the paras. of his report noted in the margin, describe the state of the harbour there, and the increasing deterioration of its anchorage, owing to the practice adopted by Commanders of vessels of discharging ballast in the road-stead. It is stated that there is an order prohibiting the practice, but that it is disregarded in consequence of the inefficient state of the Sea Customs and Police establishments, which consist of only a Goomastah on 14 Rupees, and 2 Peons on 2 Rupees a month each. With respect to the inadequacy of the Sea Customs establishments in Ganjam, it is only necessary at present to observe, that orders* have been issued to the Board of Revenue to ascertain from the Collector the additional expenditure that would be required to place those establishments on an efficient footing. As regards the discharge of ballast in the road-stead, this is a practice so fraught with injurious consequences to the shipping, that measures should at once be adopted to arrest it. It has been found at the Sea ports in Tanjore, that Commanders of ships have been very ready to give their ballast to the Collector; and as the expense of landing it is small, and as the material, when broken, makes a most substantial road metal, the Government consider it very desirable that similar arrangements should be made at the ports of Ganjam and in all other Districts, and they accordingly request that the Chief Engineer will instruct the District Engineer on whom the repair of roads has now devolved, to communicate with the Collectors, and through their means, make arrangements for obtaining all ballast from ships entering the roads.

Lieut.-Colonel Cotton's report, paras. 3 and 4.
Chief Engineer's letter, para 6.

* E. M. C. 16 h May 1857, No. 463.

3. In para. 3, Lieutenant Colonel Cotton states, that on arrival no reply was made from the shore to the usual signal for a boat, and in para. 7 he explains that this arose from the want of signal flags; a want which might cause serious consequences to ships in distress, by preventing Commanders from communicating with the shore. In para. 5, he adverts to the inconveniences arising from the present incommodious and ill-manned boats; and in para. 6 he suggests, among other measures for the improvement of the Munsoorcottah port, the supply of signal flags, and the construction of screw Moorings at the Government expense. An extract from para. 3 of Colonel Cotton's report, and copies of paras. 5, 6, and 7, will be furnished to the Marine Department, in view to such orders being issued on the points adverted to, as may there be considered necessary.

4. Lieutenant Colonel Cotton adverts in this para. to the trade returns of the Ports in Ganjam, and suggests that the Government is defrauded of its customs, in consequence of the inadequate and ill-paid establishments maintained at those Ports, as shown in Appendix B. This para. and its Appendices will be communicated to the Board of Revenue, with reference to Extract Minutes of Consultation of the 16th May, No. 463, already adverted to.

Custom House returns Report, para. 8.

*Approaches to Munsoorcottah.*

5. In these paras. reference is made to the approaches to Munsoorcottah from the interior and from the North. The principal approach is from Berhampore and being in continuation of the line to that place from Russelcondah, viâ Aska, is one of great importance, as affording the means of transit for the Traffic of the interior to the Munsoorcottah port. Some further observations and suggestions respecting this valuable line of communication are made in paras. 41 to 44 and 60, including the road from Itchapore to Berhampore. The proposal of Lieutenant Colonel Cotton, that the road from Aska to Gopaulpore should be taken round instead of through the town of Berhampore, was approved of, and ordered in Extract Minutes of Consultation of the 15th August 1856, No. 1449; and an estimate for that purpose amounting to Rupees 5,450, was sanctioned for entry in the Budget of 1857-58, on the 6th January last. The road from Berhampore to Munsoorcottah (Gopaulpore) is complete with metal and bridges, and an allowance of Rupees 120 a mile was sanctioned* for its maintenance in 1857-58, and a similar sum for the repair of the road from Berhampore to Aska, during the same period. It is observed from the Chief Engineer's letter of the 9th Instant, No. 5069, that the last mentioned portion of road had been completed, but that little had been done between Aska and Russelcondah, for completing which sanction will be accorded to the additional outlay of Rupees 10,000 applied for by the Chief Engineer. It is further observed from the Notification published in the Fort St. George Gazette, that the Aska* and Injelly† bridges have been completed and opened to the Public.

Lieutenant Colonel Cotton's report, paras. 9, 10.

* E. M. C 24th January 1857, No. 183.

* Page 65 2nd Vol. for 1857.
† Do. 992 1st do. for do.

*Approach to Munsoorcottah from the North.*

6. There is another approach to Munsoorcottah from the North, and although the road is still incomplete, the trade on it is stated to be rapidly increasing. By this line of communication, the produce of the country bordering on the Chilka Lake, and even that of Cuttack, is brought to Munsoorcottah. From Rumbah (the southern part of the lake) to Chutterpore, a distance of 14 miles, the road is in excellent order for some miles, and was, it is stated, to have been metalled throughout, during the year. From Chutterpore, the traffic has to pass through 8 miles of heavy sand, in consequence of which the rate of transit from the Lake to the port, is increased to nearly double that on the Aska lines. The Chief Engineer will ascertain and report why this portion of the road is in so neglected a state, and whether any provision has ever been made for its care.

*Canals for connecting Munsoorcottah with the Ganjam River and the latter with the Chilka Lake.*

7. In the latter clause para. 10, Lieut. Colonel Cotton adverts to the best mode of connecting the Chilka Lake with Munsoorcottah, and states that he will report on the subject after visiting the country north of Ganjam, when he will also endeavour to explain why the comparatively new port of Munsoorcottah is preferred to Ganjam, which has a river always open to boats. The latter question, however, Colonel Cotton was prevented investigating, for the reason which he assigns in para. 65; but in paras. 66 to 69, he recurs to the question of connecting the Chilka Lake with Munsoorcottah. His plan appears to be, to open a Canal from the Ganjam river to the Munsoorcottah back-water, through the Chutterpoor Lake; and then, to cut a Canal from the Chilka Lake to the Ganjam river, for which it is stated (para. 87) there are great facilities. The projects are noticed by the Chief Engineer in paras. 22 and 26; the former is considered promising, and the latter quite practicable, and well calculated to improve the prosperity of the District. The details of the first project however, have not yet been investigated, and the Government can arrive at no conclusion, until full information on all points connected with its practicability and cost, is laid before them. The Chief Engineer will call for a more particular report from the District Engineer accompanied with plans and estimates or the work. The second project, it is observed, was sancioned on the 19th Instant for entry in the Budget of 1858-59 at an estimated cost of Rupees 21,780.

Lieut. Colonel Cotton's report, paras. 66 to 69, 76 and 87.
Chief Engineer's letter, paras. 22 and 26.



*Bridge over the Nagoliah at Chicacole.*

8. The account given in this para. regarding the bridge over the Nagoliah at Chicacole, which, at the time of Lieutenant Colonel Cotton's visit, was being built under the Superintendence of Lieutenant Palmer, is satisfactory, and is creditable to the latter Officer and to Mr. Overseer Lever. The bridge not only forms an approach from the south to the large town of Chicacole, but facilitates an important line of traffic, both in Salt and Grain, between Bobully and other parts north of Vizagapatam, and the towns of Narsipettah and Calingapatam. The traffic over the Nagoliah, at the time when this report was written, is represented to have been very great, notwithstanding the serious obstruction presented by the stream; and it is stated that, when the bridge is opened for general traffic, the returns will justify the expenditure that has been incurred in its construction. From para. 7 of the Chief Engineer's letter, it appears that the bridge was opened to the public on the 26th July last; and the Goverement request that returns of the traffic now passing over it, may be obtained and submitted for their information

Colonel Cotton's report, para. 12.
Chief Engineer's letter, para. 7.

*Doosey Channel.*

9. Lieutenant Colonel Cotton states, that the head of the Doosey channel is in a very bad position; but that, owing to difficulties to which he adverts, no change can be made until careful levels have been taken of the surrounding country. The head sluice with which, it is stated, this channel was about to be provided, was completed in July last:* and in Extract Minutes of Consultation of the 1st May last, No. 838, the Chief Engineer was requested to reconsider the propriety of revising the establishment for its care, as well as for that of two other head sluices, temporarily sanctioned by the Government of India on the 13th January last. This reference was replied to by the Chief Engineer in his letter of the 2nd September last, No. 3389, and on a further application from this government, the Government of India have been pleased to sanction the establishment above referred to as a permanent measure. This sanction will shortly be communicated to the Chief Engineer.

Lieut Colonel Cotton's report, para. 13.

* Letter from Major Birdwood, dated 4th and submitted by the Chief Engineer 19th July 1856; in Consultation 29th July, 49-50.

*Road from Chicacole in Ganjam to Palcondah in Vizagapatam.*

10. This is a valuable line of communication, as by it the produce of the Palcondah estate is conveyed to the sea port of Calingapatam, and Salt taken back in return. Satisfactory progress had been made in its construction, under the Superintendence of Lieutenant Magnay, when Lieutenant Colonel Cotton visited that Officer's camp. The road has since been completed, and an allowance of Rupees 80 per mile was sanctioned for its maintenance in 1857-58, in Extract Minutes of Consultation of the 24th January last, No. 183.

Lieut. Colonel Cotton's report, para. 14.

*Vizagapatam District, Bimlipatam River.*

11. The question as to the practicability of deepening the bar of the Bimlipatam river, is briefly noticed in this para.; but the view taken by Lieutenant Colonel Cotton is not encouraging, and he rather offers suggestions for the consideration of others than makes any definite proposal. The Chief Engineer considers the occurence of sandy and other deposits at the mouths of Indian rivers, to be deserving of careful investigation, and proposes to draw the attention of the Civil Engineers of the Coast Districts to the subject, "with the view of obtaining a collection of well authenticated facts, in the hope of deducing from them some general results, and the law governing the formation, and some general system for the timely removal of such deposits." The Government will be glad to learn the results of the enquiry which the Chief Engineer proposes to institute on this subject.

Colonel Cotton's report, para. 16.
Chief Engineer's letter, para 8.

*Chittivulsa Bridges on the high road from Vizianagarum to Bimlipatam*

12. These paras. describe the condition of the two bridges over the Chittivulsa river, at the time of Lieutenant Colonel Cotton's visit. The smaller structure was a complete ruin, and the larger had been seriously injured. The past history of these bridges, and the circum-

Lieut Col Cotton's report, para. 17.
Chief Engineer's letter, para. 9.

stances under which the first was destroyed and the second damaged, were reviewed in Extract Minutes of Consultation of the 9th October 1855, No 654; and as the Government on that occasion expressed their opinion on the circumstances which had led to the catastrophe it is unnecessary now to revert to them. It is sufficient to note here, that, on the recommendation of the Chief Engineer, an estimate of Rupees 7,000 for certain works connected with the larger bridge, was sanctioned for immediate execution on the 6th January last, the object of which was to carry off the surplus water during high floods. The Government request that the Chief Engineer will report what has been done in pursuance of this sanction, and whether any measures have been taken for filling up the cracks in the arches, by pouring in fluid mortar as suggested by Lieutenant Colonel Cotton.

*Kanada Light House, South East of Vizianagarum.*

13. Lieutenant Colonel Cotton recommends the addition of more burners to the apparatus in the Kanada Light House, in order that ships may see the light 15 miles off, and not have to approach the Santapilly rocks nearer than is necessary. A copy of this para., and of para. 10 of the Chief Engineer's letter, in which concurrence is expressed in Lieutenant Colonel Cotton's recommendation, will be referred to the Marine Department, for consideration.

Lieut Col. Cotton's report, para 18.
Chief Engineer letter, para ....10.

*Ganjam District, Calingapatam Port.*

14. Lieutenant Colonel Cotton states that Calingapatam is the only port between Coringa and Durmah in Orissa, a distance of 400 miles, which has the advantage of a protected road stead, afforded by a head-land south-westward of the anchorage, which reduces the swell and diminishes the surf during the southerly winds. It is suggested (para. 26) that this head-land might be prolonged to give the port better shelter, and Major Birdwood would appear to have been instructed to investigate the practicability of the project. The Government will be glad to learn the result of the enquiries which may have been made on the subject.

Lt. Col. Cotton's report, paras. 19 to 27
Chief Engineers report para.....11.

*Trade of Calingapatam and Custom House Establishment.*

15. Although the products exported from Calingapatam amount in value to four or five lacs of Rupees per annum, the Sea Customs and Harbour establishment consist of only one Goomastah on 14 Rupees, and three Peons on 2 Rs. a month each; while the Custom House itself is a Native hut, quite out of sight of the port. The subject of improving the Sea Customs establishments in Ganjam is now under the consideration of the Board of Revenue, and this para. will be communicated to them with reference to Extract Minutes Consultation 16th May 1857, No. 463. As regards the Custom House, it is observed that a sum of Rupees 2,673, for the construction of a suitable building, was sanctioned* for entry in the Budget of 1856-57; and as the amount entered in Column 10, Statement 2 of the Budget of 1857-58, to shew the expenditure proposed during the current official year, is only Rupees 1,347 for this and another at Gopaulpore, it is presumed that the building has now been completed. The Chief Engineer will however ascertain and report the actual fact.

* Ex. Mins. Con. 30th November 1855, No. 857.

*Road from Chicacole to Calingapatam.*

16. The state of the approaches to Calingapatam is next adverted to, and the difficulties experienced in the passage of Carts on the road between Chicacole and that port, are described in para. 21. This road, which was bridged in 1854 and for some miles metalled, is stated to be now in ruins, in consequence of the heavy traffic to which it is subjected. A Supplemental estimate of Rupees 24,000 for widening the road to 8 yards, five of which are to be coated with metal, has since been submitted by the Chief Engineer; and under the circumstances reviewed in Extract Minutes of Consultation of the 23rd December 1856, No. 2410, was sanctioned for entry in the Budget of 1857-58, and an allowance of Rupees 3,050 per annum, being at the rate of Rupees 190-10 a mile, granted for its maintenance from the 1st May 1856.

Para. 21.

*Comparison between land and water carriage to Calingapatam.*

17. The aspect of the country around Calingapatam is represented to be barren in the extreme, and opportunity is taken, to show the great saving of labor and expense that would be gained by the establish-

Para. 23.



ment of a water communication from the interior to that port. Three lines practicable for Canals are suggested in para. 25; but as an estimate of Rupees 18,100 has since been entered* in the Budget of 1857-58 for the construction, within the current official year, of a Canal on one of the lines proposed, *viz.*, that from the Nowpada back-water to the port of Calingapatam, it is not necessary to advert to the projects here.

* E. M. C. 9th Jany. 1857, No. 57.

*Road from Kimedy to Chicacole.*

18. Lieutenant Colonel Cotton recommends that the road from Kimedy to Chicacole, which was being opened in a satisfactory manner under the Superintendence of Lieutenant Phillips, should be thoroughly metalled as a first class road. It is presumed that the road here referred to, is that from Kimedy to Maripam, entered in Statement No. 2 of the Budget for 1854-55, 1855-56 and 1856-57, which was subsequently carried through Survacottah to Narsanapettah, from which place the communication is open to Chicacole by means of Trunk road No. 6. From the Chief Engineer's letters of the 3rd October and 9th December* 1856, it appears that the road from Kimedy to Nursanapettah had then been completed; and the Government now wish to be informed whether, as recommended by Lieutenant Colonel Cotton any estimate has been prepared for its being metalled as a first class road, and whether any steps have been taken to make a fresh estimate for the Kimedy bridge, the construction of which was postponed in consequence of an error in the original estimate, supposed to have arisen from feet having been substituted for yards in the calculation of the water way of the proposed structure.

Lieutenant Colonel Cotton's report, para. 29.
Chief Engineer's letter, para. 12.

* Recorded in Extract Minutes Consultation of the 21st January 1857, No. 148.

*Sarvancottah Tank.*

19. This new tank, built for the Zemindar of Kimedy, was breached in 1855, in consequence of the bund being lower than the calingulah; an error, which was caused by the carelessness of Mr. Assistant Surveyor Walker in not taking levels, and one which the Government would have found it difficult to believe possible, on any less authority than the assertion of Lieutenant Colonel Cotton.

Lieutenant Colonel Cotton's report para. 30.

*Kimedy Estate and its wants.*

20. The Chief wants of the Kimedy Zemindary are stated to be roads and works of irrigation; and it is recommended that, as there is a considerable surplus available from the funds of the estate, it could not be better invested than in opening communications through different portions of the country. A line from Kimedy to Buttely is first suggested, and another from the latter place direct to Calingapatam, joining the Chicacole and Kimedy road. Other lines north-west of Kimedy are also considered desirable; but it is recommended that they should not for the present be made first class roads. The Government observe that on the 3rd June* 1856, they directed that the roads proper to be opened in the Kimedy country should be commenced upon after the rains, in anticipation of sanction, that as a case of necessity; on the 14th* February 1857, they sanctioned, at the expense of the Kimedy Estate, an additional establishment amounting to Rupees 286 per mensem for the express purpose of opening out roads in that country; and that, on the 19th March* following, in communicating to the Chief Engineer extracts from a letter from the Acting Agent in Ganjam, they stated their opinion that the opening out of the Kimedy country by roads was a most important work, one that had been approved by the Honorable Court of Directors, and one which ought to be commenced at once and be vigorously prosecuted. On the 8th April* last, the Government concurred with the Acting Agent that, in the opening of the road from Kimedy to the foot of the Goomah Ghaut, and indeed of all the passes in that country, the work should for the present be confined to the clear-

Lieutenant Colonel Cotton's report, paras. 31 and 32.
Chief Engineer's letter, para. 12.

Judicial Department Extract Minutes Consultation, No. 590.

* Revenue Department Extract Minutes Consultation No. 168.

* P. W. Extract Minutes Consultation, No. 503.

* P. W. Extract Minutes Consultation, No. 657.

ing of jungle and to the levelling and formation of the road-way; leaving the more expensive items of metalling and gravelling, as well as masonry works, to be undertaken hereafter as the necessity for them arises. They added that, with a Company of Sappers and Miners at the disposal of the Engineer for this express purpose, the opening of such communications should not be very expensive.

21. In his letter of the 22nd April last, the Chief Engineer stated that Lieutenant Moberly, the District Engineer, would be called upon to submit a sketch map, shewing the various roads and passes from the Ganjam District to the Kimedy country, on which operations should be carried on. With the exception of an estimate for the construction of a second class road from Kimedy to Ambayjary at the foot of the Goomah Pass, submitted by Mr. Knox, and sanctioned in Extract Minutes of Consultation of the 25th May last, No. 996, no general plan for carrying on operations has been sent up to Government; and they now resolve, with reference to his letter above quoted, to call the attention of the Chief Engineer to the subject, and to request that he will in communication with Mr. Knox and the District Engineer report the various works that he would recommend should be undertaken, ascertaining from the Court of Wards what funds are available from the estate, for the prosecution of such works.

22. In para. 33 Lieutenant Colonel Cotton recommends that a Corps of Coolies should be raised on the Kimedy Estate for employment in the passes during the healthy season, and for work in the plains at other times; and in the following para. he strongly urges that the public works of the estate, while it is under Government management, should be placed under the control of the District Engineer, instead of the Revenue Officer who may be in charge of the estate. These paras. will be referred to the Judicial Department for consideration, with the observation that the company of Sappers and Miners at Ganjam, hitherto at the disposal of the Collector and Agent, have recently been placed under the orders of the District Engineer, for opening out roads in the Kimedy country.

P. W. Extract Minutes Consultation 5th February 1857, No. 264.

*Nowpada Salt Pans.*

23. In this para. Lieutenant Colonel Cotton brings to notice the want of roads leading from the Nowpada Salt Pans, and the losses sustained in consequence by the Brinjarries in the dry weather. It is said that, at such times, not less than a hundred thousand head of cattle are employed in conveying the Salt of Nowpada into the interior, and that the loss of bullocks from heat, drought, and want of pasture, is so great as to add very materially to the cost of Salt to the consumer. To remedy this state of things, it is suggested that one or more Canals should be opened for the conveyance of the Salt to a better position; but as the trade cannot be entirely changed immediately by these means, it is recommended that two good but inexpensive roads should be opened in the direction of Nowpada, and that a store of Salt should be either placed on the north road, or so clear of the swamps, that the Brinjarries may load their cattle as soon as the monsoon ends, and not have occasion to pass the swamps either while deep in mud or parched from drought. With regard to the former of these suggestions, it is observed that an estimate of Rupees 18,100 has been entered in the Budget of 1857-58 for excavating, within the current official year, a navigable Canal from the Nowpada back-water to the Port of Calingapatam; and the Board of Revenue will now be requested to ascertain and report the propriety of establishing a Salt Store at Calingapatam, for the purpose of providing return loads for the carts and cattle bringing goods to that port. With respect to the roads recommended by Lieutenant Colonel Cotton, the Chief Engineer will call the attention of the District Engineer to the subject, and submit his report with his own opinion thereon. It is observed, however, that a road from the Nowpada pans to Teckally Ragoonadapoorum on Trunk Road No. 6 estimated to cost Rupees 5,330 was sanctioned on the 19th instant for entry in the Budget of 1858-59.

Lieutenant Colonel Cotton's report, para. 35.

*Road from the Itchapore to Sunthoshaporam.*

24. An estimate of Rupees 46,550 was entered in the Budget of 1856-57 for constructing, on an entirely new line, 34½ miles of Trunk road No. 6 from Sunthoshaporam to Dendagedda near Itchapore. The propriety of this change in the old line is now considered doubtful both

Lieut. Col. Cotton's report, para. 36. Chief Engineer's letter, para. 12.



by the late Civil Engineer Major Birdwood, and by Lieutenant Harington, as well as by Lieutenant Colonel Cotton, who thinks it will be better to keep nearly, if not entirely, to the old line, for the reasons which he assigns in this para. Lieutenant Colonel Cotton is of opinion, with reference to the variable amount of traffic passing on different parts of the line, that each portion should be considered separately, and the outlay on it regulated according to the present or probable demands of trade; and he suggests that, if this be done, the portion north of Sunthoshaporam may, for the most part, be treated as a second class road; in this opinion the Chief Engineer does not concur. He deprecates the construction of this portion of the line as a second class road, on the ground that it would break the uniformity of standard which should distinguish so important a Trunk road as No. 6 which forms the direct land communication between Madras and the Metropolis of India; but he assents to the propriety of adhering to the old line.

25. The Government observe, that the estimate for this portion of the road had been referred by the Government of India to the Honorable the Court of Directors; and as the sanction of that authority was communicated to the Chief Engineer in Extract Minutes Consultation of the 24th August last, No. 1628, the Government request that Officer will forward a copy of para. 36 Lieutenant Colonel Cotton's report to the present District Engineer, and call upon him for returns of traffic on different parts of the road, and will submit them, with his own opinion to enable the Government to decide whether the road should be made on the first or second class standard.

*Port of Poondy.*

26. The Port of Poondy has an exposed roadstead, with a river open to the sea during a part of the year; and like the other ports in Ganjam, has an inadequate Sea Customs and Police establishment, consisting of a Goomastah on 10 Rupees, and 2 Peons on 2 Rupees a month each. An extract from para. 37, regarding the Sea Custom Establishment, will be communicated to the Board of Revenue.

Lieut. Col. Cotton's report, paras. 37. 38.

*Change of position of the Poondy Bar.*

27. It is noticed as an interesting fact that the mouth of the Poondy river, which formerly closed every year during the dry season, has now been open for three years; and it is suggested that if the cause of this change were ascertained, it might be possible to apply it elsewhere. The Government concur with Lieutenant Colonel Cotton in regarding the solution of this question as a matter of considerable interest, and they resolve to request that the Chief Engineer will instruct the District Engineer to investigate the subject, and report the result.

*Road from Kimedy to Poondy.*

28. Lieutenant Colonel Cotton states (para. 37,) that the road from Kimedy to Poondy, which was being opened under the Superintendence of Mr. Meyer, is in the right line for trade, and will, when bridged and metalled, reduce the cost of carriage to one anna a ton a mile. It is observed that on a representation from the late Civil Engineer as to the inadequacy of the amount originally sanctioned for this road, an estimate, for its completion amounting to Rupees 2,450 was sanctioned on emergency in Extract Minutes of Consultation of the 21st January 1857, but was subsequently entered in the Budget of 1857-58, under the views expressed by the Government of India regarding emergent works

Extract Minutes Consultation 18th February 1857, No. 329.

*Port of Soormoorpoorpettah.*

29. This small port is represented to be a wretched looking village on a dreary shore, having for stores houses temporary sheds pitched on the drifting sand. Although it has no tolerable approach from the land, and its roadstead is exposed to the full force of the southerly wind, the value of its exports have amounted in some years, according to the Custom House returns, to 100,000 Rupees. The establishment maintained at the Port is smaller than in other Ports in Ganjam, and consist of one Goomastah on 10 Rupees, and one Peon on two Rupees a month. Colonel Cotton states that he made an effort to see these functionaries, but was unable to find

Lieutenant Colonel Cotton's report, para. 40.

them any where. It is obvious that the want of a suitable building for the reception of merchandize, and the transaction of business with Commanders of vessels, must cause much inconvenience, and tend to limit the trade of the Ports. The District Engineer will therefore be directed, in communication with the Collector, to submit an estimate for the construction of a small Custom House at this Port. It is absolutely necessary that the Sea Customs establishments in Ganjam should be placed on an efficient footing, as it is impossible to expect that men, so inadequately paid will perform their duties zealously or honestly, or indeed that work so inadequately provided for should be done at all. The attention of the Board of Revenue has already been directed to the subject, and they will now be requested to send up their report, with as little delay as possible.

30. The Government regard it as unsatisfactory that, comparatively, so few roads have been opened from the interior to the Ports in Ganjam. The matter is one that vitally affects the prosperity of the Province; and they desire that the attention of the District Engineer may be directed to the subject, in view to his submitting a sketch map of such roads as may appear to him best calculated to afford the means of transit for the traffic of the interior to the different ports of the District.

*Road from Russelcondah to Munsoorcottah, via Aska and Berhampore, and the Aska and Injelly Bridges.*

Lieutenant Colonel Cotton's report, paras. 41 to 58, and 60..... .. .... Colonel Faber's letter, paras. 13 to 15.

31. The projects adverted to in these paras. have been noticed in para. 5 of the present Proceedings, where such orders as appeared necessary have been passed.

*Cultivation of Sugar and the means of increasing it.*

32. Paras. 49 and 50 contain some remarks on the advantage of the present site of the Aska bridge to the Sugar Factory at that place; and paras. 51 to 58 treat of Sugar cultivation, and the means where by it may be extended. Lieut. Colonel Cotton expresses his conviction that, if due encouragement were afforded by Government to the growth of Sugar Cane, it would become the great staple of the Ganjam District, and would yield a profit far exceeding that from any other product. The present limited cultivation of the Cane is attributed (para. 54) to the want of capital on the part of the Ryots, and to the high interest which they have to pay for loans to enable them to carry on their cultivation, and for making good the Government revenue before the crop is sold; so that, under existing circumstances, the amount of profit actually realized from Sugar is not greater than that from Rice. Two modes in which Government might afford assistance are suggested in paras. 56 and 57, *viz.*, first by the construction of irrigation works which shall secure a supply of water to Cane land throughout the year, and secondly, by taking the revenue for the land after the crop is sold, holding the land as security. A copy of paras. 49 to 58 will be communicated to the Board of Revenue, and their particular attention requested to the suggestion in para. 57. The Chief Engineer will furnish a copy of these paras. to the District Engineer, and call his attention to the suggestion in para. 56.

Lieutenant Colonel Cotton's report, paras. 49 to 58. Chief Engineer's letter, paras. 16 to 19.

*Aska River embankments.*

33. In this para. Lt. Col. Cotton states that the Aska embankments were being laid out and that one complete portion would be secured before the rains. He also expresses his opinion regarding the value of these works and the futility of supposing that they can cause damage to any, and the Chief Engineer entirely concurs with him. It is necessary to observe here, that an estimate of Rupees 64,840 for embanking the Mahanuddee river from its junction with the Rooshkoolia near Aska, was sanctioned for entry in List No. 1 of the Budget of 1856-57, and an advance was at the same time authorized for the commencement of the works, under the circumstances noticed in Extract Minutes of Consultation of the 12th February 1856. The advance was confirmed by the Government of India, who however expressed some doubts regarding the propriety of commencing a system of embankments on the Mahanuddee; and in a subsequent letter, they declined* to sanction any further outlay on the work without certain specific information, which the Chief Engineer was requested† to obtain and submit at an early date. On the 28th February 1857, Captain Johnston then in charge of the Central office of Public Works, reported that about 18,000

Lieutenant Colonel Cotton's report, para. 61. Colonel Faber's letter, para. 20.

* 11th July 1856, No. 3173.

† Extract Minutes of Consultation 12th August 1856, No. 1405, para. 11.



Rupees had been expended out of the advance authorized by this Government; and that, as the embankments which had been already formed, had been found sufficient to retain the flood waters of the previous year, Lieutenant Harington did not consider it necessary to give any calculations regarding the area of floodway, or volume of water discharged, and Captain Johnston expressed his hope that all the information required by the Government of India would be found in Lieutenant Harington's report. The Government expressed their regret that Captain Johnston should have supported the Executive Engineer in the opinion that the information required was not necessary; and they observed that, as the estimate had been inserted in the Budget for 1856-57, it was necessarily again entered in that for 1857-58, with the remark that the information required by the Government of India was in course of collection. The Chief Engineer will expedite the submission of full information regarding the details of the project, together with the estimates, for submission to the Government of India, as required in para. 6 of their letter communicated with Extract Minutes Consultation dated 23rd Instant, No. 2156.

E. M. C. 18th March 1857, No. 495.

*Absence of accounts in Ganjam to distinguish between irrigated land and that producing wet crops by rain.*

34. In these paras. Lientenant Colonel Cotton represents the evils that arise from the absence of all accounts in Ganjam, to distinguish irrigated land from that producing wet crops by the falling rain, and from the absence of all knowledge of the productive power of the land. These evils, which are general in the Northern Circars, are known to, and deplored by Government; and they look forward to the introduction of a Survey, classification, and re-assessment of the land, as the only means of remedy.

Lieutenant Colonel Cotton's report paras. to 62 64.

*Fresh water Lake at Chutterpore, and Canal from the Chilka Lake to the Ganjam River.*

35. These paras. call for no remark in this place, having been noticed in para. 7 of the present Proceedings.

Lieutenant Colonel Cotton's report paras. 66 to 69; 76 and 87. Colonel Faber's letter, para. 22 and 26.

*Chilka Lake, and the purposes to which it may be applied.*

36. In para. 72 to 87 Lientenant Colonel Cotton gives an interesting acccount of the Chilka Lake, which affords the means of transit for the produce of Cuttack and Pooree to the Ganjam District. The trade on it is represented to be brisk, and the cost of carriage to be less than one pie a ton per mile. A comparison is instituted in para. 78 between the Chilka and the Colair lakes; and it is stated, that the former might be easily formed into a fresh water reservoir, by the means adopted on the latter, and that a large tract of land might thereby be redeemed for cultivation. Another use to which, it is suggested, this lake might be applied, is to convert it into a harbour for ships, by improving its entrance from the sea; but a doubt is expressed (para. 85) whether it would be advisable to undertake either project at present, when other improvements of more immediate necessity demand the attention of the Engineers in Ganjam. Under this view the Government are of opinion that it will be well to postpone the investigation of both, until a more favorable opportunity presents itself.

Lieutenant Colonel Cotton's report, paras. 72 to 87. Chief Engineer's letters, paras. 24—25

*Salt trade in Ganjam.*

37. These paras. contain some useful remarks and suggestions regarding the salt trade in Ganjam. It is stated that, although the area of country supplied with salt from Ganjam, is about three times that dependant on Canara, the sales in the former District are less than in the latter; and this limited consumption of Salt, in the country deriving its supply from Ganjam, is attributed more to the cost of carriage than to the monopoly price, which, in the first 45 miles, is now doubled by the cost of transit, while much of the Salt has to be conveyed to a distance of even 300 miles.

Lieutenant Colonel Cotton's report, paras. 88 to 112. Colonel Fabers's letter, paras. 27 to 31.

Other impediments to a more extensive sale are stated in para. 92, *viz.*, that Depôts are established only close to the places of manufacture, which are generally situated in swamps inaccessible during a portion of the year; that the approaches to them are unimproved; that the quantity manufactured is so small as not to afford a surplus in good seasons to meet the deficiencies of those years in which the manufacture is restricted, in consequence of which the consumers have to pay a famine price; that the quality of the salt offered for sale is not sometimes fit for distant carriage, and that no effort is made to economize the time of purchasers. The first measure proposed for the removal of these evils is the improvement of the communications, by means of Canals or good cart roads, and the transfer of the Salt Depôts to the termini of those communications. These measures, it is stated, will have the effect of reducing the cost of carriage, not only by the facilities presented by good communications, but chiefly by the opportunities afforded of obtaining a return load of Salt for produce brought from the interior to the coast. In the case of good cart roads, which are considered for the present preferable to Canals, the saving in the cost of transport is estimated at 4 pice a ton per mile, which is more than could be gained by a change from a good common road to the cheapest Railway; and it is stated, that when the interchange of produce is fully established, the cost of carriage will be at its minimum, and the sale of Salt at its maximum. Hence it is recommended that there should be Depôts of Salt at all the Ports, and that, eventually, none should be kept either in the swamps, or off the main lines of trade.

38. A second measure proposed for the improvement of the Salt trade, is the establishment of Depôts at the foot of the passes leading to the hill country. This measure is suggested chiefly for the benefit of the Brinjarries, who are at present the great carriers of Salt, and on whom the people of the country, beyond the Ganjam frontier, are entirely dependant for their supply. Owing to the causes detailed in paras. 97 to 99, the Brinjarries, it is stated, are subjected to much inconvenience, and suffer even great pecuniary losses by the death of vast numbers of their cattle in the dry season, for which they reimburse themselves, at the expense of the consumers of Salt, by adding materially to the price of that article. These inconveniences and losses would in a great measure be obviated by the proposed establishment of Depôts at the foot of the passes, which would, as has been the case in Canara, be attended by a great increase in the sale of Salt, and a consequent increase of revenue. Hence it is suggested that, as roads are being opened from the ports to the hill country, Salt might even now be stored in several places convenient to the Brinjarries, if Government would undertake the cost of its carriage so far; Lientenant Colonel Cotton at the same time observing that, as communications into the interior advance, and the use of carts supersedes the pack oxen of the Brinjarries, the maintenance of stores at the foot of the passes will become a matter of secondary importance, and is now proposed merely as a temporary measure.

39. The last suggestion offered for the improvement of the Salt trade, is the appointment of an Agent to look exclusively after its concerns; and it is only necessary to remark here, with reference to this suggestion, that the thorough supervision of the Salt Department will be provided for when the appointments of Deputy Collectors are made.

40. The Government now resolve to communicate paras. 88 to 112 of Colonel Cotton's report to the Board of Revenue, with the request that they will take into consideration that Officer's suggestions for the establishment of Inland Depôts, and for storing Salt at the Sea Ports, instead of in the swamps at the places of manufacture. It is quite obvious that, as regards the Salt trade, the interests of Government are precisely those of a merchant, and that the greater the facilities afforded to customers, the greater is the inducement to trade.

*Capabilities of Ganjam, and its chief wants.*

41. In paras. 113 and 114, Lieutenant Colonel Cotton enumerates the great natural advantages which Ganjam possesses over most Districts of this Presidency, especially in regard to the facilities which its climate and soil afford for the growth of Sugar; but those advantages, he states, are to a great extent neutralized, by the want of communications for the transport of its products into the interior. Bustar, a country lying immediately west of Ganjam, and hitherto little known, has been visited by a Member of the Nagpore Commission; and it is suggested that, if a road were made to connect it with Ganjam, it would be to that District what Mysore is now to

Lieutenant Colonel Cotton's report paras. 113 to 119.
Chief Engineer's letter, paras. 32 & 33.



Canara. Other roads are also mentioned as very desirable in para. 119, *viz.*, one or two at the head of the Palcondah Valley in Vizagapatam, one in the Kimedy Estate above Butlee; one north-west of Kimedy, and two from Russelcondah, including the road from the latter place to the foot of the Coorminghia Ghaut. Three reasons are urged (para. 115) for opening these roads to cart traffic; *viz.*, that the character of the bordering country would be changed, the tranquility of the frontier Talooks secured, and the sale of Salt extended.

42. The Government fully recognize the importance of opening these passes. In Extract Minutes of Consultation of the 2nd December last, they expressed themselves in favour of improving the road from Parvatipoor in the Vizagapatam District to Jeypoor, both for the purposes of trade and for the preservation of the peace of the country: and they desired to be furnished with an estimate of the cost of improving that route, so as to make it a good cart road. In Extract Minutes of Consultation of the 15th July last, they noticed that this requisition had not been complied with; and they communicated to the Chief Engineer a letter from the Government of India, with its enclosures from the Commissioner of Nagpore, furnishing information as to the routes by which trade is carried on between the Coast and the Nagpore territory and the amount of traffic on each route. Three routes were mentioned, of which the first and third are by Jeypoor and Parvatipoor, and the second by Bustar and Kimedy; and the Government observed that, although the information furnished was not so complete as could be wished, or very clear as to the extent to which the routes pass through the different Native States before they reach the Company's territory, the necssity for improving all the avenues of traffic was sufficiently apparent. They accordingly requested that the Chief Engineer would give his consideration to the subject generally, and report the measures which he would suggest should be carried out, so far at least as the country under the range of this Presidency was concerned, leaving their extension beyond those limits to be undertaken hereafter, in communication with the Commissioner of Nagpore, when more information respecting the country was obtained. The Government trust that the Chief Engineer will lose no time in adopting such measures as will secure the early submission of the report called for, meanwhile they resolve to forward a copy of paras. 113 to 115 and 119 of Colonel Cotton's report, and of Extract Minutes of Consultation of the 15th July No. 1364, to the Board of Revenue, in view to the Collectors of Ganjam and Vizagapatam being informed of the measures in contemplation for opening roads from their respective Districts into the interior.

43. With regard to the road from Russelcondah to Doorpingia at the foot of the Coorminghia Ghaut, referred to in para. 118, it is observed that a sum of Rupees 7,000 was placed at the disposal of Lieutenant McNeill, in Extract Minutes of Consultation of the 19th July 1856, for opening up that route; and with reference to the opinion expressed by the Civil Engineer in favor of extending the road to Koinjooroo and Sonepore, by the Coorminghia Pass, instead of by the Gullery Valley and Chokapaud, as originally proposed and sanctioned at an estimate cost of Rupees 28,700, the Government called for more accurate information respecting the two lines before determining which of them should be adopted. They also desired to be informed what work had been done on the road to Koinjooroo viâ Gullery under the former sanction, and what sum had been expended on it.

44. On the 11th September 1856, the Chief Engineer submitted a letter from the District Engineer, in which he reported that nothing had been done to the road from Russelcondah to Koinjooroo viâ Gullery and Chokapaud, since Lieutenant Thurnburn had left it on sick certificate, and recommended that that route should be abandoned on account of its unhealthiness, in favor of the line viâ Moochagudda and the Coorminghia Pass. To this recommendation the Government acceded in para. 2 Extract Minutes Consultation of the 10th October following, observing that the road up the Gullery Valley might eventually be made as a branch, and join the main road at Tintelliguddah. They also observed that the trace of the Coorminghia Ghaut should be revised, and that a good line should be surveyed to Koinjooroo and an estimate sent in, in time to allow of the work being begun in 1857. They further authorised the Civil Engineer to commence work on the road after the survey and estimate had been made, and to prosecute it to the extent of the funds available out of the former sanction, carefully considering the line before commencing operations upon it.

45. In reply to these orders, the Chief Engineer* sent up a letter from the Civil Engineer, reporting the amount of work

* 6th November 1856, No. 7855.

done on the road between Russelcondah and Koinjooroo viâ Gullery, the sum expended on it, and the balance available, which, he stated, would be appropriated as directed in para. 4 of Extract Minutes Consultation of the 10th October 1856, towards the formation of the line between Russelcondah and Koinjooroo viâ Coorminghia, as soon as it had been inspected and surveyed. He also reported that satisfactory progress had been made by Lieutenant McNeil in the formation of the road between Russelcondah and the foot of the Coorminghia Ghaut, under the sanction of Rupees 7,000 granted in Extract Minutes Consultation of the 19th July 1856, and that it had been inspected and reported on very favorably by Lieutenant Harington. On the 19th March last, the Chief Engineer submitted two letters from the Executive Engineer in charge of the Ganjam District, from which it appeared that the road from Russelcondah had been completed as far as the foot of the Coorminghia Pass, with the exception of wooden bridges, the speedy construction of which was anticipated on the return from his Hill tour of Captain McNeil, the Officer in charge of the Meriah Agency. As regards the Coorminghia Pass, the Excutive Engineer stated that it could not be made practicable for cart traffic, except at great and unnecssary expence, as its gradients varied from 1 in 3 to 1 in 5, through dense jungle. He therefore recommended that the line should be taken from Russelcondah, viâ Moochagudda, to Doorgapersaud, and thence by Poongolee, to Kalingia, from which point to Koinjooroo, viâ Tintelgudda, Lieutenant McNeil, he stated had engaged to prepare a survey and estimate. The Government however resolved† to postpone their decision, until plans and estimate were submitted, and the Chief Engineer had afforded them the benefit of his professional opinion as to the line to be ultimately adopted. From the circumstances stated in the Chief Engineer's reply, the Government were satisfied that it was advisable to have an accurate Estimate framed for the road from Kalingia to Koinjooroo, and directed* that this might be done at once, and they also called for explanation on certain other points. They now resolve to call Colonel Faber's attention to the subject, in view to its being disposed of at an early date.

† Ext. M. C. 15th April 1857, No. 676.

* E. M. C. 15th August 1857 No. 1585.

*Corps of Coolies.*

46. In paras. 116 and 117 Lieutenant Colonel Cotton proposes that a body of Coolies should be enlisted and organized for the Public Works in Ganjam, and his proposition is supported by the Chief Engineer. On the 17th September 1856, the Government had under consideration a Memo. on the organization, and the results of the labor of a Corps of the Pioneers employed in the Tinnevelly District; and in noticing that the working of that Corps had not been successful, they expressed their concurrence in the opinion of the Chief Engineer that, unless under very exceptional circumstances it will generally be more economical to trust to the ordinary labour market than to maintain such a body of workmen. The Government are inclined to believe that these special circumstances exist in Ganjam more than in any other District: but as they have recently placed a complete Company of Sappers and Miners under the orders of the District Engineer, it appears to them that the formation of the proposed Corps should be postponed, until it shall be shown, from further actual experience, that the services of such a body of workmen are absolutely indispensable. Regular work and good pay punctually given will generally induce Coolies to remain and work, and so remaining, they soon become skilled workmen under the tuition of the Sappers. This was found to be the case in the quarry at Dowlaishweram, where for some years a number of men worked regularly with the Sappers, and whenever such regular work can be offered to Coolies in Ganjam, it is probable that many will form in fact though not in name, a Corps such as Lieutenant Colonel Cotton refers to.

* Ext. M. C. 15th August 1857 No 1585.

*Export duty more advisable than a Toll for the repair of Roads.*

47. In this para. Lieutenant Colonel Cotton discusses the means by which funds should be raised for the construction and repair of roads in Ganjam, and expresses his opinion that a duty on Exports is preferable to a Toll on the roads themselves; but as the question of providing funds for the construction and maintenance of the roads throughout the Presidency, is under the separate consideration of Government, no remarks are required on the subject in this place.

Lieut Col. Cottons report, para. 120.
Colonel Faber's letter para .... 34.



48. The Government cannot conclude these remarks, without expressing their sense of the zeal and ability displayed by Lieutenant Colonel Cotton in his late tour of inspection and in the present report and of the value of the information it contains and of many of the suggestions it offers.

(Signed) H. FORBES,
*Acting Secretary to Government.*

№ 2167 R.U.S.

Extract from the Minutes of Consultation
of November
Under date the 24th [illegible] 1857

Read again
Letter from the Chief Engineer

dated 22nd August 1856
Forwarded in Cons.n 4th Nov.r
1856 № 2050.

With this Letter
the Chief Engineer submits
Lieut Colonel F.B. Cotton's
report on a tour of inspec-
tion in the Northern Distric
on which he was authorized
to proceed under the orders
conveyed in Extract Minutes
of Consultation of the 12th Febru
1856, № 201. Colonel Fabre
commences his notice of this
report by mentioning that
places and works he did not
visited by Lt Colonel Cotton,
and then proceeds to give
a Summary of its contents

offering

opinions or
offering but few ^ suggestions
of ~~this~~ ^ your ~~to~~ regarding
the course that Government
should adopt, with reference
to the propositions made by Lt
Colonel Cotton.

2 The first place at
which Lt Colonel Cotton landed
after leaving Madras, was
Munsoorcottah or Gopaulpore
in the Ganjam District, and
the terms of his report noted
in the margin, describe the
state of the harbour there,
and the increasing deterioration
of its anchorage, owing to the
practice adopted by Commanders of vessels
of discharging ballast in
the roadstead. It is stated
that there is an order pro-
hibiting the practice, but
that it is disregarded, in
consequence of the insufficient
state of the Sea Customs
and

Ganjam District
Munsoorcottah or Gopaulpore
harbour.
Lt Col. Cotton's report, paras 3 & 4
Chief Engineer's letter, para 6.

E. M. C. 16th May 1857 N 163.



and Police establishments, which
consist of only a Jemadar on
14 Rs and 2 peons on 2 Rs a
month each. With respect to the
inadequacy of the Sea Customs
Establishments in Ganjam it
is only necessary at present to
observe that orders have been issued
to the Board of Revenue to as-
certain from the Collector the
additional expenditure that
would be required to place
those establishments on an ef-
ficient footing. As regards the
discharge of ballast in the
roadstead, this is a practice
so fraught with injurious con-
sequences to the shipping, that
measures should at once be
adopted to arrest it. It has
been found at the Sea ports
in Tanjore, that Commanders
of ships have been very ready
to give their ballast to the
Collector, and as the expense
of landing it is small, and
as the material, when broken
makes

makes a most substantial road metal, the Government consider it very desirable that similar arrangements should be made at the ports of Ganjam and in all other Districts, and they accordingly request that the Chief Engineer will instruct the District Engineer on whom the repair of roads has now devolved, to communicate with the Collectors, and through their means make arrangements for obtaining ill ballast from ships entering the roads.

3 In para 3 Lieut Colonel Cotton states that on arrival no reply was made from the shore to the usual signal for a boat, and in para 7 he explains that this arose from the want of signal flags, a want which might

might cause serious consequences to ships in distress, by preventing Communication from the shore communicating with the shores. In para 5, he adverts to the inconveniences arising from the present inconspicuous and ill manned boats, and in para 6 he suggests among other measures for the improvement of the the supply of signal flags, and Masulipatam port, the construction of screw Moorings, ~~and the supply of signal flags~~, at the Government expense. An Extract from para 3 of Colo. Cotton's report and Copies of paras 5, 6 and 7 will be furnished to the Marine Department in view to such orders being issued on the points adverted to as may there be considered necessary.

necessary.

4 Lt. Colonel Cotton adverts in this para to the trade returns of the Ports in Guzjam, and suggests that the Government is defrauded of its Customs, in consequence of the inadequate and ill paid establishments maintained at those Ports, as shown in Appendix B. This para and its Appendices will be communicated to the Board of Revenue, with reference to Extract Minutes of Consultation of the 16th May, N° 463: already adverted to.

Custom House Returns Report para 8.

5 In these paras reference is made to the approaches to Munsoorcottah from the interior and from the north. The principal approach is from Berhampore, and being in continuation of the line to that place from

Approaches to Munsoorcottah Lt Col. Cotton's report, paras 9-10

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from Russelcondah via Ankoa, is one of great importance, as affording the means of transit for the traffic of the interior to the Mundoor coast port. Some further observations and suggestions respecting this valuable line of communication are made in paras 41 to 44 and 60, including the road from Itchapore to Berhampore. The proposal of Lt Colonel Cotton, that this road from Asha to Gopalpore should be taken round instead of through the town of Berhampore was approved of, and ordered in Extract Minutes of Consultation of the 15th August 1856, N° 1469; and an Estimate for that purpose amounting to Rupees 5450 was sanctioned

sanctioned for entry in the Budget of 1857/58, on the 6th January last. The road from Berhampore to Nunsoorcottah (Gopalpore) is complete with metals and bridges, and an allowance of Rupees 720 a Mile was sanctioned for its maintenance in 1857/58, and a similar sum for the repair of the road from Berhampore to Askia, during the same period. The Government now wish to have a general report on the present state of the road from Nunsoorcottah to Russelcondah, Via Berhampore and Askia, and especially regarding the progress made in the construction of that portion of it between Askia and Russelcondah, on the line recommended by Major Birdwood and approved in Extract Minutes of Consultation of the 4th Octr

+ Extt Mins. Cons. 24th Janry 1857 N° 183.

It is observed from the Chief Engineer's letter of the 9th Instant, N°5089, that the last mentioned portion of road had been completed, but that little had been done between Askia and Russelcondah, for completing which sanction will be accorded to the additional outlay of Rupees 10000 applied for by the Chief Engineer.

It is further observed from the Notification published in the Fort St. George Gazette, that the Askia and Injelly bridges have been completed and opened to the public.

× Page 65 2d Vol. for 1857.
* Do. 992. 1st do. for do.

+ 6th Feby. & communicated to the Chief Engr. on the 4th March 1857.

October 1856. They, also, wish to know, with reference to the remarks made by Colt. Patton in paras 4th to 8th, on the successful Management of the Askia and Injelly bridges by Sirdt. Maqueda, who is not now in the Department, what progress has been made in the completion of those bridges, on the Supplemental Estimates sanctioned by the Government of India, and under the authority granted by that Government in Extract Minutes of Consultation of the 4th April last, for carrying into effect the arrangements recommended by the Chief Engineer for the immediate prosecution of the works without ~~executing the expenditure assigned to the Superintendent~~ District.

It

6 There is another approach to Munsoorcottah from the North, and although the road is still incomplete, the trade on it is stated to be rapidly increasing. By this line of communication, the produce of the country bordering on the Chilka lake, and even that of Cuttack, is brought to Munsoorcottah. From Rumbak (the Southern part of the lake) to Chutterpore, a distance of 11 Miles, the road is in excellent order for some miles, and when it is stated to have been metalled throughout, during the year. From Chutterpore, the traffic has to pass through 8 miles of heavy sand, in consequence of which the rate of transit from the lakes to the sea-port is increased to nearly double that on the Chilka lines.

Approach to Munsoorcottah from the North.

Canals for connecting Munsoorcottah with the Ganjam river, and the latter with the Chilka lake.

Lt Col. Cotton's report, paras 66 to 69; 76 and 87.

Chief Engr's letter, paras 22 & 26.

lines. The Chief Engineer will ascertain and report early whether this portion of the road is still neglected, and whether any provision has ever been made for its repair.

7. In the latter clause of para 10 Lt Colonel Cotton adverts to the scheme of connecting the Chilka lake with Munsoorcottah, and states that he will report on the subject after visiting the country north of Ganjam which he will also endeavour to explain why the comparatively new port of Munsoorcottah is preferred to Ganjam which has a river always open to boats. The latter question however, Colonel Cotton was prevented investigating, for the reason which

which he assigns in para 65; but in paras 66 to 69, he reverts to the question of connecting the Chilka lake with Munsoor cottah. His plan appears to be, to open a Canal from the Ganjam river to the Munsoor cottah backwater, through the Chitterpore lake; and then, to cut a Canal from the Chilka lake to the Ganjam river, for which it is stated (para 87) there are great facilities. The projects are noticed by the Chief Engr in paras 22 and 26; the former is considered promising, and the latter quite practicable, and well calculated to improve the prosperity of the District. The details of the 1st project however, have not yet been

Engineer will call for a more particular report from the District Engr accompanied with plans and estimates for the work. The second project, it is observed, was sanctioned on the 19th Inst. for entry in the Budget of 1858/59 at an estimated cost of Rs 21,780.

Bridge over the Nagoliah at Chicacole.
Col. Cotton's report, para 12.
Chief Engr's letter, para 7.

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been investigated, and the Government can arrive at no conclusion, until full information on all points connected with its practicability and cost, is laid before them. The Chief 8th The account given in this para regarding the Bridge over the Nagoliah at Chicacole, which, at the time of Col. Cotton's visit, was being built under the Superintendence of Lieut. Palmer, is satisfactory, and creditable to the latter Officer and to Mr Overseer Lever. The bridge not only forms an approach from the South to the large town of Chicacole, but facilitates an important line of traffic, both in Salt and grain, between Bobully and other parts

parts
~~ports~~ North of ~~the~~ Vizagapatam ~~District~~, and the towns of Narsipattah and Calingapatam. The traffic over the Nadgoliah, at the time when this report was written, is represented to have been very great, notwithstanding the serious obstruction presented by the Stream; and it is stated that, when the bridge is opened for general traffic, the returns will justify the expenditure that has been incurred in its construction. From para 7 of the Chief Engineers letter, it appears that the bridge was opened to the public on the 26th July last, and the Government request that returns of the traffic ~~[illegible]~~ now passing over it, may be obtained and submitted for



Doosey Channel
Lt Colt Cotton's report June 13.

for their information.

9 Lieut Colonel Cotton states, that the head of the Doosey Channel is in a very bad position; but that, owing to ~~the~~ difficulties to which he adverts, no change can be made until careful levels have been taken of the Surrounding Country. ~~has been carefully levelled~~ The head sluice with which, it is stated, this Channel was about to be provided was completed in July last; and in Extract Minutes of Consultation of the 15th May last N° 838, the Chief Engineer was requested to reconsider the propriety of revising the establishment for its care, as well as for that of two other head Sluices, temporarily sanctioned by the Government of India on the 13th January

* Letter from Major Birdwood, dated 4th and submitted by the Chief Engr. 19th July 1856; in Cons. 29th July, 49. 50.

January last. This reference was replied to by the Chief Engr. in his letter of the 2nd Septr last, N° 3389, and on a further application from this Government, the Government of India have been pleased to sanction the Establishment above referred to as a permanent measure. This sanction will shortly be communicated to the Chief Engineer.

January last.

10 This is a valuable line of communications, as by it the produce of the Paleondah Estate is conveyed to the Sea port of Calingapatam, and salt taken back in return. Satisfactory progress had been made in its construction, under the Superintendence of Lieut.t Magnay, when Col.l Cotton visited that Office's Camp. The road has since been completed and an allowance of Rupees 80 per Mile was sanctioned for its maintenance in 1857/58, in Extract Minutes of Consultation of the 21.st January last, N.o 183.

Road from Chicacole in Ganjam to Paleondah in Vizagapatam.
Lt.Col.l Cotton's report, para 11.

11 The question as to the practicability of deepening the bar of the Bimlipatam river, is briefly noticed in this

Vizagapatam District
Bimlipatam Rivers. Col.l Cotton's report, para 16:
Chief Engr.s letter, para 8.



this view, but the view taken by Lieut.t Col.l Cotton is not encouraging, and he rather offers suggestions for the consideration of others than makes any definite proposal. The Chief Engineer considers the occurrence of sand and other deposits at the Mouths of Indian rivers, to be deserving of careful investigation, and proposes to draw the attention of the Civil Engineers of the Coast Districts to the subject, "with the view of obtaining a collection of well authenticated facts, in the hope of deducing from them some general results and the laws governing the formation, and some general system for the timely removal of such deposits". The Government will be glad to learn the results of the enquiry which the

the Chief Engineer proposes to institute on this subject.

12. These paras describe the condition of the two bridges over the Chittivalsa river, at the time of Lt Colonel Cotton's visit. The smaller structure was a complete ruin, and the larger had been seriously injured. The past history of these bridges and the circumstances under which the first was destroyed and the second damaged, were reviewed in Extract Minutes of Consultation of the 9th October 1855 N° 654; and as the Government on that occasion expressed their opinions on the circumstances which led to the catastrophe it is unnecessary now to revert to them. It is sufficient to

Chittivalsa bridges on the high road from Vizianagaram to Bimlipatam.
Lt Colt Cottons report, para 17.
Chief Engrs letter, para 9.

to undertake, that, on the recommendation of the Chief Engineer, an Estimate of Rupees 7000 for certain works connected with the larger bridges, and sanctioned for immediate execution on the 16th January last, the object of which was to carry off the surplus water during high floods. The Government request that the Chief Engineer will report what has been done in pursuance of this sanction, and whether any measures have been taken for filling up the cracks in the arches, by pouring in fluid Mortar as suggested by Lt Colonel Cotton.

Kimuda Light House, South east of Vizianagaram.
Lt Colt Cottons report, para 18.
Chief Engrs letter, para 10.

13. Lt Colonel Cotton recommends the addition of more burners to the apparatus in the Kimuda light house, in

mid order that ships may see the light 15 Miles off, and not have to approach the Sunderbilly rocks nearer than is necessary. A copy of this para, and of para 10, of the Chief Engineer's letter, in which convenience is expressed in Lt Colonel Cotton's recommendation, will be referred to the Marine Department, for consideration.

14. Lt Colonel Cotton states that Calingapatam is the only port between Goringa and Durmah in Orissa, a distance of 600 Miles, which has the advantage of a protected road stead, afforded by a head land South-westward of the anchorage, which reduces the swell and diminishes the Surf during the Southerly winds. It is suggested

Ganjam District.
Calingapatam port.
Lt Col. Cotton's report, paras 19 to 27
Chief Engr's report, para 11.

suggested (para 26) that this head land might be prolonged to give the port better shelter, and Major Birdwood appears to have been instructed to investigate the practicability of this project. The Government will be glad to learn the result of the enquiries which may have been made on the subject.

15. Although the products exported from Calingapatam amount in value to 40 or 50 lacs of Rupees per annum, the Sea Customs and Harbour establishments consist of only one Commissioner on 1000 Rupees, and three peons on 2 Rs a month each, while the Custom house itself is a native hut, quite out of sight of the port. The subject of improving the Sea Customs establishments in Ganjam

Ganjam is now under the consideration of the Board of Revenue, and this para will be communicated to them with reference to Extt. Cons. 16th May 1857 N°463. As regards the Custom house, it is observed that a sum of Rupees 2,673, for the construction of a suitable building, was sanctioned for entry in the Budget of 1856/57, and as the amount entered in Column 10 Statement 2 of the Budget of 1857/58, to show the expenditure proposed during the current official year, is only Rupees 1347 for this and another at Gopalpoor, it is presumed that the building has now been completed. The Chief Engineer will however ascertain and report the actual facts.

Extt. Mins. Cons. 30th Nov. 1855 N°857.

16. The state of the approaches to Calingapatam is

Road from Chicacole to Calingapatam. Para 21.

is most deserted to, and the difficulties experienced in the passage of Carts on the road between Chicacole and that port, are described, in para 21. This road, which was bridged in 1854 and for some miles metalled, is stated to be now in ruins, in consequence of the heavy traffic to which it is subjected. A supplemental estimate of Rupees 24,000 for widening the road to 8 yards power of which are to be coated with metal, has since been submitted by the Chief Engineer, and under the circumstances reviewed in Extract Minutes of Consultation of the 23d December 1856 N°2410 was sanctioned for entry in the Budget of 1857/58, and an allowance of Rupees 3050 per annum, being at the rate

rate of Rupees 190-10- a mile granted for its maintenance from the 1st May 1856.

17. The respect of the Country around Calingapatam is represented to be barren in the extreme, and opportunity is taken, to show the great saving of labor and expense that would be gained by the establishment of water communication from the interior to that port, ~~as compared with the transport by land~~. Three lines practicable for canals are suggested in para 25; but as an estimate of Rupees 18,100 has since been entered in the Budget of 1857/58, for the construction, within the current official year, of a canal on one of the lines proposed, viz^t

Comparison between land and water carriage to Calingapatam. para 23.

Ed^t Mine. Cons. 4th June 1857. N°57.

Road from Kimedy to Chicacole.
Dy Cal^n Cotton's report, para 29.
Chief Engineer's letter, para 12.

Viz^t that from the Nowpada back water to the port of Caliingapatam, it is not necessary to advert to the projects here

18. Lt Colonel Cotton recommends that the road from Kimedy to Chicacole which was being opened in a satisfactory manner under the Superintendence of Lieut Blaillie, should be thoroughly metalled as a first class road. It is presumed that the road here referred to, is that from Kimedy to Maripam, entered in statement N° 2 of the Budgets for 1854/55, 1855/56 and 1856/57, which was subsequently carried through Sivacattah to Narsanapettah, from which place the communication is open

to

to Chicacole by means of
Trunk Road No 6. From
the Chief Engineer's letters
of the 3d October and 4th December × 1856, it appears that the road
from Kimedy to Nursanapettah
had then been completed;
and the Government now
wish to be informed whether
as recommended by Lt Colonel
Cotton its line being re-trallied
is a first class road, and
whether any steps have
been taken to make a fresh estimate for the
Kimedy bridge, the construc-
tion of which was postponed
in consequence of an error
in the original estimate,
supposed to have arisen
from feet having been sub-
stituted for yards in the
calculation of the water way
of the proposed struc-
ture.

This

× Recorded in E.M.C. of the 21st January 1857 No 1148.

Saravancottah Tank
Lt Colt Cotton's report para 30.

Kimedy Estate and its wants
Lt Colt Cotton's report, paras 31 & 32
Chief Engineer's letter, para 12.

19 This new tank,
built for the Zemindar of
Kimedy, was breached in
1855 , in consequence
of the bund being lower
than the Calingulah,
an error, which was caused
by the carelessness of the
Assistant Surveyor Walker
in not taking levels, and
which the Government
would have found it
difficult to believe possible
on any less authority than
the assertion of Lt Colonel
Cotton.

20 The chief wants
of the Kimedy Zemindary
are stated to be roads and
works of irrigation; and
it is recommended that,
as there is a considerable
surplus available from
the funds of the estate,

it

to Chinicole by means of Trunk Road No 6. From the Chief Engineer's letters of the 3rd October and 4th December 1856, it appears that the road from Kimedy to Nursanapettah had then been completed, and the Government now wish to be informed whether as recommended by Lt Colonel Cotton, its line being pretalled as a first class road, and whether any steps have been taken to [illegible] the Kimedy bridge, the construction of which was postponed in consequence of an error in the original estimate, supposed to have arisen from feet having been substituted for yards in the calculation of the water way of the proposed structure.

× Recorded in E. M. C. of the 21st January 1857 No 145.

This

Saravancottah Tank
Lt Colt Cotton's report para 30.

19 This new tank, built for the Zemindar of Kimedy, was breached in 1855, in consequence of the bund being lower than the Calingulah, an error, which was caused by the carelessness of the Assistant Surveyor Walker in not taking levels, and which the Government would have found it difficult to believe possible on any less authority than the assertion of Lt Colonel Cotton.

Kimedy Estate and its wants
Lt Colt Cotton's report, paras 31 & 32
Chief Engineer's letter, para 12.

20 The Chief wants of the Kimedy Zemindary are stated to be roads and works of irrigation, and it is recommended that, as there is a considerable surplus available from the funds of the estate,

it

it would be better instead
than in spending communi-
cations through different portions
of the country. A line from
Kinnedy to Battely is first
suggested, and another from
the latter place direct to
Calingapatam joining the
Chittoor and Kinnedy road.
Other lines north west of
Kinnedy are also considered
desirable, but it is recommended
that they should not
for the present be made first-
class roads. The Government
observe that on the 3rd June + Judl. Dept. E. M. C. N° 590
1856, they directed that the
roads proper to be opened in
the Kinnedy Country should
be commenced upon after
the rains, in anticipation
of sanction, that as a case
of necessity, on the
14th Febrian 1857, they
Sanctioned

+ P.W. E. M. C. N° 503

Sanctioned, at the expence
of the Kinnedy Estate, an
additional establishment amounting
to Rupees 286 per mensem for
the express purpose of opening
out roads in that country,
and that, on the 19th March
following, in communicating
to the Chief Engineer Extracts
from a letter from the acting
Agent in Ganjam, they stated
their opinion that the opening
out of the Kinnedy country
by roads was a most im-
portant work, one that had
been approved by the Honorable
Court of Directors, and one
which ought to be commenced
at once and be vigorously
prosecuted. On the 8th April
last, the Government com-
municated with the acting Agent
that, in the opening of the
road from Kinnedy to the
foot

+ P.W. E. M. C. N° 657.

+ Rev. Dept. E. M. C. N° 168

foot of the Goomah Ghaut, and indeed of all the passes in that Country, the work should for the present be confined to the clearing of jungle and to the levelling and formation of the road-way, leaving the more expensive ~~portions~~ items of metalling and gravelling, as well as Masonry works, to be undertaken hereafter as the necessity for them arises. They added that, with a company of Sappers and Miners at the disposal of the Engineer for this express purpose, the opening of such communications should not be very expensive.

21. On his letter of the 22d April last, the Chief Engineer stated that Sir H. Maberly, the District Engineer, would be called upon to submit



submit a sketch Map, shewing the various Roads and passes from the Garjam District to the Kimedy Country, on which operations should be carried on. With the exception of some estimates for the construction of a second class road from Kimedy to Aubajary at the foot of the Goomah Pass, submitted by Mr. Knox, and sanctioned by Extract Minutes of Consultations of the 25th May last ~~No.~~ 77, no general plan for carrying on operations has been transmitted to Government, and they are now resolved, with reference to their letter above quoted, to call the attention of the Chief Engineer to the subject, and to request that he will in communication with Mr. Knox and the District Engineer report

report the various works
that he would recommend should
be undertaken, ascertaining
from the Court of Wards what
funds were available from
the Estate, for the prosecution
of such works.

22nd Six paras 33 to Colonel
Collen recommends that a
corps of Coolies should be
raised on the Kinnedy Estate
for employment in the fresses
during the healthy season
and for work in the plains
at other times; and in the
following para, he strongly
urges that the public works
of the estate, while it is
under Government manage-
ment, should be placed
under the control of the
District Engineer, instead
of the Revenue officer who may be
in charge of the Estate. These
paras

P.W. Coll. C. 5th Feby. 1857. No 264.

Nowpada Salt paras.
Lt. Col. Collen's report, para 35.

paras will be referred to
the Judicial Department
for consideration, with the
observation that the Company
of Sappers and Miners de-
Ganjam, hitherto at their
disposal of the Collector and
Agent, have recently been
placed under the orders of
the District Engineer, for
opening out roads in the
Kinnedy Country.

23 In this para,
Lt Colonel Collen brings to notice
the want of roads leading
from the Nowpada Salt-
pans, and the losses sus-
tained in consequence by
the Brinjaries in the dry
weather. It is said that,
at such times, not less than
a hundred thousand head
of cattle are employed in
conveying

conveying the salt of Nowpada into the interior, and that the loss of bullocks from heat, drought, and want of pasture, is so great as to add very materially to the cost of salt to the consumer. To remedy this state of things, it is suggested that one or more canals should be opened for the conveyance of the salt to a better position; but as the trade cannot be entirely changed immediately by these means, it is recommended that two good but inexpensive roads should be opened in the direction of Nowpada, and that a store of salt should be either placed on the North road, or so clear of the swamps, that the Brinjarries may load their cattle as soon as the monsoon ends, and not have occasion to pass the swamps either



either while deposited or parched from drought. With regard to the former of these suggestions, it is observed that an estimate of Rs 18000 has been entered in the Budget of 1857/58 for excavating within the current official year, a navigable canal from the Nowpada back water to the Port of Calingapatam; and the Board of Revenue will now be requested to ascertain and report the propriety of establishing a salt store at Calingapatam, for the purpose of providing return loads for the carts and cattle bringing goods to that port. With respect to the roads recommended by Lt Col Cotton the Chief Engineer will call the attention of the District Engineer

however, that a road from the Nowpada pass to Seekally Pagoonadapooram on Trunk Road N°6 estimated to cost Rupees 5,330 was sanctioned on the 19th instant for entry in the Budget of 1858/59.

Road from Itchapore to Suntooshapore.
Lt Colt Cotton's report, para 36.
Chief Engr's letter, para 12.

Engineer to the Budget, and submits his report with his own opinion thereon. It is observed

24 An estimate of Rupees 16,550 was entered in the Budget of 1856/57. for constructing on an entirely new line, 31½ Miles of Trunk road N°6 from Suntooshapooram to Devidayedoo near Itchapore. The propriety of this change in the old line is now considered doubtful both by the late Civil Engineer Major Birdwood, aided by Lieutenant Harington, as well as by Lt Colt Cotton, who thinks it will be better to keep nearly, if not entirely, to the old line for the reasons which he assigns in this para. Lt Colt Cotton is of opinion, with reference to the variable amount of traffic passing on

six different parts of the line, that each portion should be considered separately and the outlay on it regulated according to the present or probable demands of trade; and he suggests that, if this be done, the portion North of Suntooshapooram may, for the most part be treated as a second class road; in this opinion the Chief Engineer does not concur. He deprecates the construction of this portion of the line as a second class road, on the ground that it would break the uniformity of standard which should distinguish so important a Trunk road as N°6 which forms the direct land communication between

between Madras and the Metropolis of India; but he assents to the propriety of adhering to the old line.

25. The Government observe that the estimate for this portion of the road has been referred by the Government of India to the Honorable the Court of Directors; and as the sanction of that authority has not yet been communicated to this Government, it is unnecessary at present to discuss the question whether the road should be made on the first or second class standard. In fact the Government are not now in a position to pass any definite orders on the subject, in the absence of information as to the amount of traffic passing on different portions of the road. When the sanction of the Honorable Court is communicated to the Chief Engineer, he will forward a copy of para 36 of Colonel Cotton's report to the present District Engineer, and call upon him for returns of traffic on different parts of the road, and will submit them, with his own opinion to enable the Government to decide whether the road should be made on the first or second class standard.

was communicated to the Chief Engineer in Extract Minutes Consultation of the 24th August last, N° 1628, the Government request that Officer

Port of Poondy.
Lt Col. Cotton's report, paras 37-38

26. The port of Poondy had an exposed roadstead with a river open to the sea during a part of the year, and like the other ports in Ganjam, has an inadequate sea Customs and Police establishment

establishment, consisting of a Gomastah on 10 Rupees, and two Peons on 2 Rupees per month each. An extract from para 37, regarding the Sea Custom Establishment, will be communicated to the Board of Revenue.

Change of position of the Poondy bar.

27 It is noticed as an interesting fact that the mouth of the Poondy river which formerly closed every year during the dry season, has now been open for three years, and it is suggested that if the cause of this change were ascertained, it might be possible to apply it elsewhere. The Government concur with Lt Colonel Cotton in regarding the solution of this question as a matter of considerable interest, and they resolve to request that the Chief Engr will instruct the



the Distrct Engineer to investigate the subject, and report the result.

Road from Kimedy to Poondy.

28 Lt Col. Cotton states (Para 37) that the road from Kimedy to Poondy, which was being opened under the Superintendence of Mr Meyer, is in the right line for trade, and will, when bridged and metalled, reduce the cost of carriage to one anna a ton a mile. It is observed that on a representation from the late Civil Engineer as to the inadequacy of the amount originally sanctioned for this road, an Estimate amounting to for its completion, Rupees 21,450 was sanctioned on an emergency in Extract Minutes of Consultation of the 21st January 1857, but was subsequently entered in

E.M.C. 18th Feby 57 N329.

in the budget of 1857/58, under the views expressed by the Government of India regarding emergent works.

29. This small port is represented to be a wretched looking Village on a dreary shore, having for Store houses temporary sheds pitched on the drifting sand. Although it has no tolerable approach from the land, and its road stead is exposed to the full force of the Southerly winds, the value of its exports have amounted in some years, according to the Custom house returns, to 100,000 Rupees. The establishment maintained at the Port is smaller than at other Ports in Ganjam, and consists of one Goomastah on 10 Rupees, and one Peon on two Rupees a Month.

Port of Soormoorpoorpettah
Lt Col Cotton's report, para 10.

Colonel Cotton states that he made an effort to see these functionaries, but was unable to find them any where. It is obvious that the want of a suitable building for the reception of merchandize, and the transaction of business with Commanders of Vessels, must cause much inconvinience, and tend to limit the trade of the Port. The District Engineer will therefore be directed, in communication with the Collector, to submit an estimate for the construction of a small Custom house at this Port. It is absolutely necessary that the Sea Customs establishments in Ganjam should be placed on an efficient footing, as it is impossible to expect that men, so inadequately paid, will

will perform their duties zealously or honestly, or indeed that work so inadequately provided for should be done at all. The attention of the Board of Revenue has already been directed to this subject, and they will now be requested to send up their report, with as little delay as possible.

30 The Government regard it as unsatisfactory that, comparatively, so few roads have been opened from the interior to the Ports in Guyana. The matter is one that vitally affects the prosperity of the Province, and they desire that the attention of the District Engineer may be directed to the subject, in view to his submitting an Sketch Map of such roads, as may

Road from Ruseleondah to Munsoorcottah, Viâ Aska and Berbampore, and the Aska and Injelly bridges.
Lieut. Col. Cotton's report, paras 41 to 45, & 60.
Colonel Hebert's letter, paras 13 to 15.

Cultivation of Sugar and the means of increasing it.
Lieut. Col. Cotton's report, paras 49 to 58.
Chief Engineer's letter, paras 16 to 19.

may appear to him best calculated to afford the means of transit for the traffic of the interior to the different ports of the District.

31 The projects adverted to in these paras have been noticed in para 5 of the present Proceedings, where such orders as appeared necessary have been passed.

32 Paras 49 and 50 contain some remarks on the advantage of the present site of the Aska bridge to the Sugar Factory at that place; and paras 51 to 58 treat of Sugar cultivation, and the means whereby it may be extended. Lieutenant Colonel Cotton expresses

expressed his conviction that if such encouragement were afforded by Government to the growth of Sugar-cane, it would become the great staple of the Ganjam District and would yield a profit far exceeding that from any other product. The present limited cultivation of the cane is attributed (para 54) to the want of capital on the part of the ryots, and to the high interest which they have to pay for loans to enable them to carry on their cultivation, and for making good the Government revenue before the crop is sold, so that, under existing circumstances, the amount of profit actually from sugar realized is not greater than that



from rice. Two modes in which Government might afford assistance are suggested in paras 56 and 57, viz first by the construction of irrigation works which shall secure a supply of water to cane land throughout the year, and secondly by taking the revenue for the land after the crop is sold, holding the land as security. A copy of paras 49 to 55 will be communicated to the Board of Revenue, and their particular attention requested to the suggestion in para 57. The Chief Engineer will furnish a copy of these paras to the District Engineer, and call his attention to the suggestion in para 56.

33. In this para Lt Col. Cotton states that the Aska

Aska river embankments.
Lt Col Cotton's report, para 61.
Col Haberi's letter, para 20.

Ashta embankments were being laid out, and that one complete pattan would be secured before the rains. He also expresses his opinion regarding the value of these works and the futility of supposing that they can cause damage to any of the Chief Engineer entirely concurs with him. It is necessary to observe here, that an estimate of Rupees 64,840 for embanking the Muha-ruddee River from its junction with the Rooshkoolia near Ashta, was sanctioned for entry in List No 1 of the Budget of 1856/57, and an advance was at the same time authorized for the commencement of the works, under the circumstances noticed in Extract Minutes of Consultation of the 12th Feby 1856. The advance was confirmed

11th July 1856, No 3173.

Ext Mins Cons 12th Augt 1856 No 11105 Para 11.

confirmed by the Government of India, who however expressed some doubts regarding the propriety of commencing a system of embankments on the Nerbudda, and in subsequent letter, they declined to sanction any further outlay on the work without certain specific information, which the Chief Engineer was requested to obtain and submit at an early date. On the 28th Febuary 1857, Capt Johnston, then in charge of the Central Office of Public Works, reported that about 18000 Rupees had been expended out of the advance authorized by this Government, and that, as the embankments which had been already formed, had been found sufficient to retain the flood waters of the previous year

Lieut

Saint Harrington did not consider it necessary to give any calculations regarding the area of floodway, or volume of water discharged and Captain Johnston expressed his hope that all the information required by the Government of India would be found in Saint Harrington's report. The Govt expressed their regret that Captain Johnston should have supported the Executive Engineer in the opinion that the information required was not necessary and they observed that, as the estimate had been inserted in the Budget for 1856/57, it was necessarily again entered in that for 1857/58, with the remark that the information required by the Government

of

E. M. C. 18th March 1857 - No 93

^ will expedite the submission of full information regarding the details of the project, together with the estimates, for submission to the Government of India, as required in para 6 of their letter communicated with Extract Mins. Cons. dated 25th Instant, No 2156.

Absence of accounts in Ganjam to distinguish between irrigated land and that producing wet crops by rain.

Col. Cotton's report, paras 62 to 64.



of India was in course of collection. The Chief Engr will ascertain and report what progress has been made in the enquiry since the date of this order.

34. In these paras Lt Colonel Cotton represents the evils that arise from the absence of all accounts in Ganjam, to distinguish irrigated land from that producing wet crops by the falling rain, and from the absence of all knowledge of the productive power of the land. These evils, which are general in the Northern Circars, are known to and deplored by Government, and they look forward to the introduction of a Survey, classification and reassessment

of

of this land; as the only means of remedy.

35 These paras call for no remark in this place, having been noticed in para 7 of the present proceedings.

Freshwater lake at Chintapoore and canal from the Chilka lake to the Ganjam river.
Lt Col Cotton's report, paras 66 to 69; 76 & 87.
Col Faber's letter, paras 22 & 26.

36 In paras 72 to 87 Lt Colonel Cotton gives an interesting account of the Chilka Lake, which affords the means of transit for the produce of Cuttack and Pooree to the Ganjam District. The trade on it is represented to be brisk, and the cost of carriage to be less than one pie a ton per mile. A comparison is instituted in para 78 between the Chilka and the Colair lakes, and it is stated, that the former might be easily formed

Chilka Lake, and the purposes to which it may be applied.
Lt Col Cotton's report, paras 72 to 87.
Chief Engr's letter, paras 24 - 25.

formed into a fresh water reservoir, by the means adopted on the latter, and that a large tract of land might thereby be redeemed for cultivation. Another use to which, it is suggested, this lake might be applied, is to convert it into a harbour for ships, by improving its entrance from the Sea; but a doubt is expressed (para 85) whether it would be advisable to undertake either project at present, when other improvements of more immediate necessity demand the attention of the Engineers in Ganjam. Under this view the Government are of opinion that it will be well to postpone the investigation of both, until a more favorable opportunity presents itself.

These

37 ... These paras contain some useful remarks and suggestions regarding the salt trade in Ganjam. It is stated that, although the area of country supplied with salt from Ganjam is about three times that dependant on Canara, the sales in the former District are less than in the latter, and this limited consumption of salt, in the Country deriving its supply from Ganjam, is attributed more to the cost of carriage than to the monopoly price, which, in the first 45 miles, is now doubled by the cost of transit, while much of the salt has to be conveyed to a distance of even 300 miles. Other impediments to a more extensive sale are stated in para 92, viz^t that

Depots

Salt trade in Ganjam.
Lt Col Cotton's report, paras 88 to 112.
Col Faber's letter, paras 27 to 31.



Depots are only established close to the places of manufacture which are generally situated in swamps inaccessible during a portion of the year, that the approaches to them are unimproved, that the quantity manufactured is so small, as not to afford a surplus for bad seasons, in consequence of which the consumers have to pay a famine price, that the quality of the salt offered for sale is not sometimes fit for distant carriage, and that no effort is made to economize the time of purchasers. The first measure proposed for the removal of these evils is the improvement of the communications, by means of Canals or good cart roads, and the transfer of the

Salt

* in good seasons to meet the deficiencies of those years in which the manufacture is restricted,

Salt Depôts at the termini
of those communications.
These measures, it is stated
will have the effect of reducing
the cost of carriage not only
by the facilities presented by
good communications, but
chiefly by the opportunities
afforded of obtaining a return
load of salt for produce brought
from the interior to the coast.
In the case of good cart
roads, which are considered
for the present preferable to
canals, the saving in the
cost of transport is estimated
at 1/2 pice a ton per mile,
which is more than what
could be gained by a change
from a good common road
to the cheapest Railway and
it is stated, that when the
interchange of produce is
fully established, the cost



of carriage will be at its
minimum, and the sale of
salt at its maximum. Hence
it is recommended that there
should be depôts of salt at
all the Ports, and that, eventu-
ally, none should be kept either
in the Sunderbunds, or off the main
lines of trade.

38. A second measure
proposed for the improvement
of the salt trade, is the esta-
blishment of depôts at the
foot of the passes leading to
the hill country. This measure
is suggested chiefly for the
benefit of the Brinjaries, who
are at present the great
carriers of salt, and on whom
the people of the country, beyond
the Ganjam frontier, are entirely
dependent for their supply. Owing
to the causes detailed in paras
97 to 99, the Brinjaries, it is
stated,

stated, have subjected them to much inconvenience, and sufferers great pecuniary losses by the death of vast numbers of their cattle in the dry season, ~~in crossing~~ for which they reimburse themselves, at the expence of the consumers of salt, by adding materially to the prices of that article. These inconveniences and losses would in a great measure be obviated by the proposed establishment of depôts at the foot of the passes, which would, as has been the case in Mr Clinton, be attended by a great increase in the sales of salt, and consequent increase of Revenue. Hence it is suggested that, as roads are being opened from the ports to the hill country, salt might even now be stored in several places conveniently to the Bunjarries, if Government would undertake the cost of its carriage so far; Lieut Colonel Cotton at the same time observing that, as communications into the interior advance, and the use of carts supersedes the pack oxen of the Bunjarries, the maintenance of stores at the foot of the passes will become a matter of secondary importance, and one now proposed merely as a temporary measure.

39 The last suggestion offered for the improvement of the salt trade, is the appointment of an Agent to it exclusively after its ~~concerns~~; and it is only necessary to remark here, with reference to this suggestion, that the thorough supervision of the salt depôts will be provided

provided for which the assistant
Agents of Deputy Collectors are
made ... [illegible]

40. The Government have now
resolved to communicate paras
88 to 112 of Colonel Cotton's report
to the Board of Revenue, with
the request that they will
take into consideration that
officers suggestions for the
establishment of Inland Depôts,
and for storing Salt at the
Sea Ports, instead of in the
swamps at the places of
manufacture. It is quite
obvious that, as regards the
Salt trade, the interests of
Government are precisely those
of a merchant, and that
the greater the facilities af-
forded to customers, the greater
is the inducement to trade.

41. In paras 113 & 114, Col. Cotton enumerates the

Capabilities of Ganjam, and its chief wants.
Col. Cotton's report paras 113 & 114.
Chief Engr's letter paras 32 & 33.

great

great natural advantages
which Ganjam possesses over
most Districts of this Presi-
dency, especially in regards
to the facilities which its
climate and soil afford
for the growth of Sugar; but
these advantages, he states,
are to a great extent
nullized, by the want of
communications for the
transport of its products in
to the interior. Bastar,
a country lying immediately
west of Ganjam, and hitherto
little known, has been visited
by a Member of the Mysore
Commission, and it is sug-
gested that, if a road were
made to connect it with
Ganjam, it would be to that
District, what Mysore is
now to Canara. Other roads
are also mentioned as very
desirable

desirable in order to keep open one or two of the heads of the Pabbee valley, the Vizagapatam, one via the Kimedy estate to Bobbee Bolla, one north-west of Kimedy, and two from Russelcondah, including the road from the latter place to the foot of the Coomingheer Ghaut. Three reasons are urged (page 115) for opening these roads to coast traffic viz. that the character of the bordering country would be changed, the tranquility of the frontier tahsils secured, and the sale of salt extended.

12. The Government fully recognize the importance of opening these passes. In their Extract Minutes of Consultation of the 2nd December last, they expressed themselves in favor of improving the road from Russelcondah in the Vizagapatam District to Seypoor, both for the purposes of trade and for the preservation of the peace of the country; and they desired to be furnished with an estimate of the cost of improving that route, so as to make it a good cart road. In their Extract Minutes of Consultation of the 5th [illegible] they declared that this requisition had not been complied with; and they communicated to the Chief Engineer a letter from the Government of India, with its enclosures from the Commissioner of Nagpore, furnishing information as to the routes by which trade is carried on between the coast and the Nagpore territory, and the amount of traffic

on

ordinary route. Three routes were mentioned, of which the first and third are by Jypore and Parvatipoor, and the second by Boytur and Kimedy. Besides the Government observed that although the information furnished was not so complete as could be wished or very clear as to the extent to which the routes through the different Native States before they reach the Company's territory, the necessity for improving all the avenues of traffic was sufficiently apparent. They accordingly requested that the Chief Engineer would give his consideration to the subject generally, and report the measures which he would suggest should be carried out so as to attain at least six

the country under the Presidency of this Presidency was concerned, leaving their extension beyond those limits to be undertaken hereafter in communication with the Commissioner of Nagpore, whom more information respecting the country was obtained. The Government trust that the Chief Engineer will have no hesitation in adopting such measures as will secure the early submission of the report called for. Meanwhile they resolve to forward a copy of pages 113 to 115 and 119 of Colonel Cotton's report, and of Extract Minutes of Consultation of the 15th July No. 1364 to the Board of Revenue, in view to the Collector of Ganjam and Vizagapatam being informed of the measures in contemplation

for opening roads from their respective Districts into the interior [illegible] ... With regard to the road from Russelcondah to Doorgingia at the foot of the Coorningia Ghaut, referred to in para 118, it is observed that a sum of Rupees 7000 was placed at the disposal of Lieut.e M.Neil, in Extract Minutes of Consultation of the 19th July 1856, for opening up that route; and with reference to the opinion expressed by the Civil Engineer in favor of extending the road to Kuingoroo and Soonpore by the Coorningia Pass, instead of by the Gullery Valley and Chokapund, as originally proposed and sanctioned at an estimated cost of Rupees 28,700, the Government called for more detailed information

information respecting the two lines before determining which of them should be adopted. They also desired to be informed what work had been done on the road to Kuingoroo via Gullery under the former sanction, and what sum had been expended on it. ... On the 11th September 1856, the Chief Engineer submitted a letter from the District Engineer, in which he reported that nothing had been done to the road from Rupelcondah to Kuingoroo via Gullery and Chokapund, since Lieut. Thumburn had left it on sick certificate, and recommended that that route should be abandoned on account of its unhealthiness in favor of the line via

Moolagudda

6th November 1856, N 7555.

the Surveyor and the Overseer in charge to report to the Board regarding the Engineer's estimate referred to in para 2 of Extract Minutes of Consultations of the 10th October 1856 following, observing that the road up the Gullay Valley might be eventually [illegible] a bridle path, leading from the main road at Tirukkaligaladah. They were also directed that the line of the proposed Channel should be traced, and that as good a line should be surveyed to Koonjoorai as could be obtained, and that an estimate should be prepared, and that the Surveyor should report to what extent of the funds available out of the former

former Viaduct, carefully considering the line before commencing operations upon it.

45 In reply to these orders, the Chief Engineer sent up a letter from the Civil Engineer, reporting the amount of work done on the road between Ruppelcondah and Koonjoorai via Gullay, the sums expended on it, and the balance available, which, he stated, would be appropriated as directed in para 4 of Extract Minutes of Consultation of the 10th October 1856, towards the formation of the line between Ruppelcondah and Koonjoorai via Coorningia, as soon as it had been inspected and surveyed. He also reported that satisfactory progress had been made

made by Lieut.t McNeil in the formation of the road between Rupselcondah and the foot of the Coorningia Ghaut, under the sanction of Rupees 7000 granted in Extract Minutes Consultation, of the 19th July 1856, and that it had been inspected and reported soon after favorably by Lieut.t Harington. On the 19th March last, the Chief Engineer submitted two letters from the Executive Engineer in charge of the Ganjam District, from which, it appeared that the road from Rupselcondah had been completed as far as the foot of the Coorningia pass, with the exception of wooden bridges, the speedy construction of which were anticipated on the return from his Hill tour of



of Captain McNeil, the officer in charge of the Meriah Agency. As regards the Coorningia pass, the Executive Engineer stated that it could not be made practicable for cart traffic except at great and unnecessary expense, as its gradients varied from 1 in 3 to 1 in 5, through dense jungle. He therefore recommended that the line should be taken from Rupselcondah, via Thoochagiddie, to Doorgapersaud, and thence by Poongolee to Halingia, from which point to Koinjoree, via Tenteygiddie. Lieut.t McNeil, he stated, had engaged to prepare a Survey and estimate. The Government however resolved to postpone their decision;

E. & M. C. 15th April 1857. No 676.

until

until plans and estimate were submitted, and the Chief Engineer had afforded them the benefit of his professional opinion as to the lines to be ultimately adopted. [+] they were resolved to call Colo Fraser's attention to the subject, in view to its being disposed of at an early date.

46 Sir James 116 & 117 &c

Corps of Coolies.

Colo Collyer proposes that a body of Coolies should be enlisted and organized for the public works in Ganjam, and his proposition is supported by the Chief Engineer. On the 17th September 1856 the Government had under consideration a Memo on the organization, and the results of the labor of a corps of Pioneers employed in the Tinnevelly District,

E. M. C. 15th Aug. 57 No. 1585

[+] From the circumstances stated in the Chief Engrs reply, the Govt were satisfied that it was advisable to have an accurate Estimate framed for the road from Kalingia to Koinjoroo and directed* that this might be done at once. and they also called for explanation on certain other points. They

* E. M. C. 15th Aug. 57 No. 1585.

and in noticing that the working of that corps had not been successful, they expressed their concurrence in the opinion of the Chief Engineer that, unless under very exceptional circumstances, it will generally be more economical to trust to the ordinary labour market than to maintain such a body of workmen. The Government are inclined to believe that these special circumstances exist in Ganjam more than in any other District, but as they have recently placed a complete company of Sappers and Miners under the orders of the District Engineer, it appears to them that the formation of the proposed corps should be postponed, until it shall be

be shown from further actual experience that the services of such a body of workmen are absolutely indispensable. Regular reports annual goals pay permanently, gravel will generally endure [illegible] Coolies and remain at regular work and to remaining, they soon become skilled workmen under the tuitions of the Sappers.

This area found to be the [illegible] Doulaisheeram, where for some years a number of men worked regularly with the Sappers, and whenever such regular work can be offered to Coolies in Ganjam, it is probable that many will form in fact though not in name a Corps such as Lieut Colonel Cotton refers to.

In this para Lieut Col Cotton discusses the means by which funds should be raised for the construction and repair of roads in Ganjam, and expresses his opinion that a duty on exports, is preferable to a toll on the roads themselves, but as the question of providing funds for the construction and maintenance of the roads throughout the Presidency, as under the Separate consideration of Government, are matters are required on the subject in this place.

The Government cannot include these remarks, without expressing their sense of the zeal and ability displayed by Lieut Colonel Cotton in his late tour of inspection and in the present report and of the value of the information it contains and of many of the suggestions it offers.

Export duty more advisable than a toll for the repair of roads.
Lieut Col. Cotton's report para 120.
Col Fraser's letter — para 34.

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Reviewing a Report from Colonel Cotton, on his tour of inspection in the Northern Districts of the Madras Presidency.