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Government of Madras.

Public Works DEPARTMENT.

Con. 21-4-57

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Dated 16-4- 18 57

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No. 70. Read the following letter from Colonel C. E. FABER, Chief Engineer; to H. FORBES, Esq., Acting Secretary to Government, dated 26th January 1857, No. 9755.

SIR,

Conformably to paras. 11, 12 and 13 of the rules which were forwarded for my guidance with Extract Minutes of Consultation 17th June 1856, No. 989, I have the honor to lay before the Right Honorable the Governor in Council, the following report on the operations of the Public Works Department during the past official year, or from 1st May 1855 to 30th April 1856.

2. The rules above quoted prescribe that the report shall contain details of the *results* of improvements and of the bills passed; also of the quanties and numbers of stores, machines, tools and instruments, issued for the use of the Department, with a comparative Statement of the issues of former years, and with explanation of differences. They also require a notice of the rates paid for labor and the prices paid for materials in each District, and for each large work, with explanation as to variations observable either between different localities, or in comparison with previous years. The actual cost of a given quantity of work of each chief kind at the various large undertakings in progress, is also ordered to be stated and compared with respect to the machinical appliances in use; and explanation is called for as to the progress made in determining fair rates for work on sound data in any case or locality.

3. It is necessary for me to remark that the amount of information above called for is at present far beyond the power of this office to supply. Not only is the time that has elapsed from the date of the requisition to the end of the year far too short and inadequate for the purpose, but the establishments of the District Engineers were until very recently too feeble for the labor involved in the preparation of the necessary returns. I am hence constrained to restrict my report on the present occasion, to such subjects as it has been customary to notice, including those on which information may be procured from the records of my own office. But it will be my endeavour and the duty of my office to render future reports as complete as possible in all respects.

4. The entire expenditure in the Public Works Department during the past year, on new works and repairs, amounts to Rupees 59,88,241 apportioned among the several Districts and Military Stations beyond the frontier, as follows:

District or Station.	Irrigation.	Communications.	Buildings.	Total.
	Rs.	Rs.	Rs.	Rs.
Ganjam	62,489	1,28,166	6,953	1,97,608
Vizagapatam	7,840	73,069	9,338	90,247
Rajahmundry	5,19,058	34,029	34,650	5,87,737
Masulipatam	3,33,126	1,24,676	8,141	4,65,943
Guntoor...	1,74,325	24,309	1,693	2,00,327
Nellore	83,278	1,31,599	7,031	2,21,908
Cuddapah	30,515	1,15,606	1,282	1,47,403
Bellary	70,835	1,72,358	41,533	2,84,726
Kurnool...	4,796	74,134	7,967	86,897
Chingleput	76,800	2,28,723	11,128	3,16,651
North Arcot	2,61,368	1,54,016	2,654	4,18,038
South Arcot	1,11,387	1,55,299	14,243	2,80,929
Tanjore	3,35,140	2,01,168	18,420	5,54,728
Trichinopoly	1,94,280	46,944	2,533	2,43,757
Madura	38,630	37,764	4,548	80,942
Tinnevelly	80,809	37,477	9,994	1,48,280
Coimbatore	27,137	1,05,536	1,34,580	2,67,253
Salem	56,610	15,128	5,455	77,193
Canara	1,904	1,26,463	32,260	1,60,627
Malabar	26,731	47,472	11,858	86,061
Madras	378	72,683	3,90,330	4,63,391
Upper Godavery	„	1,30,396	„	1,30,396
East Coast Canal	„	„	„	„
Mysore	„	„	26,579	26,579
Hydrabad	„	3,211	3,88,024	3,91,235
Saugor	„	„	43,778	43,778
Jalunah	„	„	15,607	15,607
Total.....	24,97,436	22,60,226	12,30,579	59,88,241

5. The principal items embraced in the above outlay are the following:

GANJAM.

Head sluices to the Doosee and other channels.

6. The regulating sluices to these channels, five in number, were only recently sanctioned. Three of them were commenced, and it was expected they would be finished before the setting in of the monsoon. The expenditure up to 30th April 1856 is Rupees 4,067, out of an estimate of Rupees 12,050. The Civil Engineer remarks that these works when completed, will not only prevent the accumulation of sand in the beds of the channels, for the clearing of which large sums are annually expended; but so regulate the supply of water during the rainy season, as to protect the lands below the level of the channel from the inundations to which they are exposed, and thus save the destruction of crops, to the Ryots, and the necessity of granting remissions to the Government.

7. A great portion of the works executed in Ganjam during the year under review, consists of roads of which the principal are the following:

8. Road from Palcondah to Chintadah with branches from the latter place to Calingapatam and Chicacole. Upon this work the total expenditure has been Rupees 20,822. The earthwork has been completed to the distance of 34½ miles, and 25 small bridges and tunnels have been built, leaving eleven under construction. Two and a half miles of the road have been also metalled.

9. Trunk road No. 6 from Chicacole to Itchapoor. This road has been formed for a distance of 19 miles principally through wet land, and 47 small bridges, tunnels and drains have been built. The expenditure in 1855-56 has been Rupees 11,826.

10. Trunk road No. 6 from Itchapoor to the Bengal frontier, with bridges at Itchapoor and Dendagudda. The piers and abutments of the above bridges, together with the arches have been constructed, and both were expected to be opened to the public before the setting in of the last monsoon. The road has been formed for 7 miles, of which 4½ have been metalled and gravelled. The expenditure during 1855-56 was Rupees 25,489.

11. Branch road from Berhampore to Russelcondah. The portion of this line between Berhampore and Aska has been completed, being a distance of 25 miles, and opened for traffic. From Aska to Russelcondah, nine miles have been formed. As the line from Pilapada to Russelcondah passes over low ground liable to inundation, it has been resolved to substitute another, passing over higher lands for it. The expenditure upon the whole of this important line of road, during the past official year has been Rupees 32,786.

12. The piers and abutments of the Aska and Injelly bridges have been raised to their full height, and it had been mistakenly believed that the arches would be completed before the monsoon.

13. The branch roads from Kimedy to Poondy and Nursipetta have been formed for the whole distance and partially metalled; 69 small bridges and tunnels having been built on the former, and 59 on the latter. That from Palcondah to Chicacole with a branch from Chintadah to Gaurah has also been formed for 34½ miles, and 25 small bridges and tunnels erected.

14. The Chicacole bridge over the Nagolea river, had made considerable progress, and has since been completed. The original and supplementary estimates for this work amounted to Rupees 39,334, but the expenditure at the close of the official year had risen to Rupees 39,787. The additional expense is owing to the increased height given to the piers, to the repeated clearing out of the foundations, and to the carrying away of embankments by unseasonable freshes.

VIZAGAPATAM.

Irrigation.

15. The only irrigation work performed in this District during the past year, which deserves mention, is the repair of the Doogadah annicut, and the cost of which was Rupees 2,082 on the whole.

Communications.

16. Under the head of communications, the following may be particularized. Trunk road No. 6 from Toonee to Soobarum. For the repair of this road, an estimate of Rupees (10,570) ten thousand five hundred and seventy was sanctioned, besides a further sum of Rupees (10,567) ten thousand five hundred and sixty-seven for the construction of a bridge across the Toonee river. Out of the former sum Rupees (9,966) nine thousand nine hundred and sixty-six were expended during the year, and out of the latter Rupees (6,467) six thousand four hundred and sixty-seven.

17. Although the traffic upon this line has undoubtedly increased, being at present about 165 bandies daily, yet Lieutenant Moberly does not think that any substantial permanent advantage has been derived from the expenditure incurred on it. Major Birdwood however, is of a contrary opinion, and asserts that he would have no hesitation in recommending any person driving his conveyance during the dry season, from Toonee to Anakapilly which is part of the above line. The remainder of it, viz. from Anakapilly to Soobarum he acknowledges to be in bad order. The difference of opinion existing on this point is sufficient in my judgment to show that the beneficial results of the expenditure incurred on the road are not so great, or decided, as might have been desired. This may be owing partly to the insufficiency of the maintenance allowance, but more probably to the slowness with which the work has been carried on, and which Lieutenant Moberly observes has been so great, that the finished portions of the line became seriously damaged before the rest of the estimate was expended. Lieutenant Moberly proposes to submit an estimate for the repair of this line to Chittavalsa, which, when received, will be duly laid before Government.

From Civil Engineer 9th Division, 23rd July 1856, No. 499.

18. Three bridges have been under construction on the line from Vizagapatam to Vamoolaralsah, on an estimate amounting to Rupees 8,566. The first bridge has been completed, and the abutments and piers of the second and third have been finished, but the works were stopped at this stage owing to the want of funds, and supplemental estimates have been included in the Budget of 1856-57 for their completion.

19. On the road from the Vizagapatam Ferry towards Poolaputty on Trunk road No. 6, Rupees 2,003 have been expended, under the Superintendence of the Native Superintendent Goolkhan.

20. Much work has also been done to the road from Nursapatam to Talapollem on Trunk road No. 6, to the roads from Nursapatam to Golgondah and Polarum, and to those from Tatipurty to Ankapilly and Jeypore, but the progress of all these has been interrupted from want of funds, and all these undertakings were in abeyance at the close of the official year.

21. The road from Palcondah to Cheepurpully has been trenched and formed throughout, and in a few places metalled and gravelled; that from Palcondah to Parvatipore has been laid out, and 31 tunnels with 29 road dams have been completed, similar work has been done on the portion of the line from Parvatipore to the Bobbilly Zemindary.

Buildings.

22. The only works of note coming under the head of Buildings are the Custom House at Bimlipatam which was only recently commenced; and the 14 Police Cutcherries sanctioned for execution at an estimated cost of Rupees (16,814) sixteen thousand, eight hundred and fourteen; but which have been very little advanced during the year, the expenditure up to 30th April 1856 having been no more than 1,954 Rupees.

RAJAHMUNDRY.

Irrigation.

23. The operations carried on in this District during the past year consist chiefly of the extension of Canals already used both for irrigation and navigation. The only *new* works of the kind which have been commenced, are the Pullavella Canal, on which Rupees 28,084 have been expended; and the Ellore and Nursapore Canals which have cost Rupees 1,05,960 and 74,889 respectively.

24. Upon other irrigation works, having mainly for their object the increase of the present capacity of the Godavery channels, the expenditure has amounted to Rupees 2,87,285.

Roads.

25. Nothing has been done during the past year under the head of "Roads" beyond repairing 10 miles of the Northern Trunk road in the neighbourhood of the town of Rajahmundry, at a cost of Rupees 4,500.

26. The operations carried on at the entrance of the river at Cocanada have attended with great success. Previous to their commencement, there was scarcely a depth of 4 inches in the bar at low tide. It has now increased to 4 feet 4 inches, so that boats can now work at all times of the tide, and vessels of 200 tons can cross it at high water, when the maximum depth is 9 feet 6 inches. Further improvements are still being made on the bar, and the lateral groins of rough stone to confine the stream within its proper breadth of channel are being prolonged as found necessary. The foundations of the new light house have already been begun.

Buildings.

27. The only buildings of any importance that have been erected are the Civil Dispensary at Rajahmundry, and the sea-men's hospital at Cocanada, which latter has not yet been completed. The expenditure on the former amounts to Rupees 3,930 and that on the latter to Rupees 3,437.

28. Repairs to the extent of Rupees 2,41,748 have been executed to the Public Works of the District, under the heads of "ordinary" and "emergent."

29. As regards the results of the past expenditure on the condition and prosperity of the Province, Captain Rundall the District Engineer observes, that during the last year there could not have been less than between 600,000 and 700,000 acres irrigated by the annicut channels, yielding a large profit to the cultivators. The exports amounted to 19 lacs against 16 of the previous year, and the imports of the 5½ lacs against 4½; or a total of nearly 25 lacs against 20¾ lacs in 1854-55. The tonnage which has sailed from the ports of the District has reached 74,000 tons against 55,000, showing an increase of 35 per cent. over the trade of the previous year. It is true that the above Statement does not give the results of particular or individual improvements as required by the orders of Government; but as the export trade expends upon the productive capacity of the District, and this again upon the means of irrigation, there can be no doubt that the great extention of the latter during the last few years has had most beneficial influence upon the general prosperity of the country, and that the results actually enjoyed are due in a great measure to the lately created system of irrigation.

30. Captain Rundall's observations on the want of a Revenue Survey, and the loss thereby sustained by the state, commend themselves strongly to the consideration of Government.

MASULIPATAM.

31. The most important work of irrigation that has been in progress in this District during the last official year is the Kistnah Anicut, on which Rupees 1,38,795, were expended, making the aggregate expenditure on the dam itself from the time of its commencement, Rupees 7,70,129,. The Annicut has been raised to a level of 20 feet from the bed, Masonry to the extent of 7,092 cubic yards, was built, and stone in blocks of all sizes up to 6 tons in weight, was thrown in to the amount of fully 1,86,000, tons. The work has stood the freshes of last year admirably well, no damage whatever having occurred except the removal of a few of the smaller and less perfectly compacted stones of the coping of the front wall.

32. The enlargement of the Poolairoo channel from Palanata to Weyoor which was commenced in 1854, was finished in last year at an aggregate cost of Rupees 65,681.

33. A lock and Calingulah at Cunkypand on the above channel were commenced as soon as the navigation was opened by the completion of the Anicut. The foundations 7 feet in thickness have been completed, the Calingulah has been advanced, and there is reason to believe that both works will be finished in this year, and the navigation opened as far as the site of the next lock 12 miles lower down.

34. On the Boodomair and northern high level channel, Rupees 20,778, have been expended, including the diversion of the original stream into a new course, and an acqueduct at Yenekepaud.

35. The Mopedavy channel which was commenced towards the close of the year has not made much progress, only Rupees 11,452 having been expended out of an estimate of Rupees 1,49,797.

36. Under the head of communications, the road from Ebrampatam to the Nizam's frontier, and the Chennapoor Canal may be mentioned, the expenditure on the former being Rupees 12,887 and that on the latter Rupees 8,517. But the most important work undertaken was the timber bridge across the Kistnah, on which Rupees 93,526 were expended in the collection of materials. An embankment from Bezwarah to Ebrampatam to prevent the overflow of the river from pouring into the Delta round the flanks of the annicut, was completed on the 13th November 1855, at a cost of Rupees 22,675, out of which Rupees 7,968 were expended during the official year.

37. There has been no outlay of any magnitude under the head of buildings in this District during the year under review.

GUNTOOR.

38. A portion of the great Kistnah project belongs to this District, and the three principal subsidary works of the eastern bank may be classed under it, viz. the Toongabuddra channel, the Nizampatam channel and the Vullabapooram channel.

39. The Toongabuddra channel has been deepened from Seetanagram as far as Vudlapoody, at an expenditure of Rupees 57,160, of which only a small portion was expended in the year under report. The Nizampatam channel including a lock and Calingulah at Doogerallah has been well advanced, the excavation being finished to the site of the 2nd lock, 21 miles from the annicut, and it is believed that the channel will be completed in a few months. The Calingulah at Doogerallah has been finished, and the lock has made fair progress. The Vullabapooram channel was completed to the full extent of the estimate and is available for the purposes of irrigation.

40. The Kistnah annicut having come into operation only last year, it is yet too soon to speak of its pecuniary or material results, but it has already conferred immense benefits on the country up to the present time subject to its influence. Notwithstanding the drought which prevailed last year, and the failure of the wet cultivation in the Talooks not connected with the Annicut, the irrigation of the Talooks enjoying the benefit of the annicut channels has gone on uninterruptedly. In the Goodwadah Talook of Masulipatam, an immense crop of paddy was raised, and although no great addition accrued to the public revenue, the gain to the Ryots has been very considerable and the gross value of the produce due to the annicut in that Talook, has been estimated at 5 lacs of Rupees. In the Ponnoor and Baupettah Talooks of Guntoor which are already under the influence of the annicut, the shist in Fusly 1265, amounted to Rupees 47,438 and Rupees 63,563 respectively, being about 10,000 Rupees in each case above the highest shist of the preceding ten years, and Rupees 18,000 above the average shist; on the contrary, in the Reypully Talook which as yet continues beyond the reach of the annicut, the adversity of the season was clearly exhibited by the falling of the revenue, 22,000 Rupees below the maximum of the antecedent ten years, and 13,000 Rupees below its average. It is therefore obvious that the annicut has not only saved the revenue in the Talooks dependent on it, but has added about 40,000 Rupees to the public income, independently of the benefits to the people, which must be immense.

41. The principal road work executed in Guntoor during the past official year has been, on the Trunk line No. 7, from Copperapaud to Pondigul, on which 18,252 Rupees have been expended. Much difficulty is stated to have been experienced in procuring workmen and carts, but this is being gradually overcome, and better progress will probably be made in future. On the District road from Guntoor to Munchalla, Rupees 1,337 have been expended, 8 miles being metalled and completed, leaving about 3 miles unfinished, to which the remainder of the estimate will be applied.

42. The only works performed under the head of buildings, are the Moonsiff's Court houses at Cauza, Kurrumpoody and Baupettah, on which Rupees 415, 739, and 610 respectively have been expended in the aggregate, up to the close of the official year.

NELLORE.

43. By far the most important work in progress in this District is the annicut across the Pennar river, on which Rupees 17,141, have been expended during the official year, exclusive of repairs and alterations. The annicut itself was finished on the 15th August 1855, at a total cost of Rupees 89,494 having been altogether 30 months under construction.

44. Owing to the absence of proper means of distributing the water, much use has not been yet made of this great work, but so far as it has been already turned to account, it has greatly benefitted the revenue. Under the Jaffer Sahib channel alone, an increase of 19,608 Rupees has taken place above the average of the preceding 5 years, besides Rupees 13,593 which were realized from the lands of Gungapatam, Moodevurtypollium, Poonoor, Comeratta and Mypaud, which have lain waste since they were deprived of their usual means of irrigation in the great floods of 1852.

45. Under the head of communications, the most important works executed in this District are the canal from Ameen Covil to Doogoorauzpatam, on which Rupees 10,869 were expended during the official year, the portion of Trunk road No. 6, lying within the District which has been completed and opened for traffic from the southern boundary to about 5 miles north of Nellore, and the Ongole and Cumbum road, which is one of those undertaken during the scarcity of 1854, to afford employment to the poor population, the expenditure on this line during the year has been Rupees 23,415. Scarcely any work has been done to the Raupoor road, the funds sanctioned for it having been expended before the close of May 1855, with the exception of a few hundred Rupees which were kept for the purpose of planting and watering trees on the finished portions of the line.

46. There are only 27 miles of Trunk road No. 7, in the Nellore District, of which, with the exception of one or two short distances, the whole has been metalled and opened for traffic. The bridges and tunnels, with the exception of the large bridge across the Goondlacumma river, will be completed during the current year. The expenditure up to 30th April 1856, amounted to Rupees 23,702.

47. The bridge across the Beirapairoo river near Sungum, was completed on the 21st March 1856, all but a little work to its approaches and to the Ghaut over the low Sungum hill: when these are finished, the bridge will become a valuable auxiliary to the traffic of the country on the new central line from Cuddapah, and the Dorenal pass, to the coast at Kistnaputnam.

48. The improvements made to the roads in this province have been already attended with some increase of traffic, but the amount is indefinite though continually augmenting. The full advantages attending the opening up of the communications can be properly estimated only after the works have been thoroughly completed, and time has been allowed for their becoming generally used by the people. But most unfortunately, the improvement of communications has languished, and funds have failed just when a continuance of energy and liberality would have educed the full benefit of the enormous outlays rendered imperative by the scarcity if not famine of 1853-54. With no less than three well selected East and West lines, and with the Trunk road No. 6 intersecting the whole District north and south, the Government can both easily and expeditiously render the communications in the Province of Nellore fully adequate for developing the resources and accommodating the vast trade of this and the adjoining Districts. Taking a comprehensive view however of the 3 famine roads, comparatively little or nothing has been accomplished during the season under retrospective report, although a well trained and effective agency was in readiness for operating extensively on the lines.

CUDDAPAH.

49. The most considerable item of expenditure on works connected with the irrigating of this District is the repair of the Budwail tank, which was performed under the superintendence of an Overseer of the Department at a cost of Rupees 1,468. The chief works carried on during the official year were the continuation of the improved communications commenced in 1854, for the relief of the starving population; of which, the following only need be mentioned.

Nundy Cunnama Ghaut.

50. The estimate for this line was Rupees 48,398 and it has been laid out chiefly in newly tracing, widening and revetting the road on the west side of the ghaut, which is now practicable for loaded carts. The work was stopped in April last for want of funds, but the completion of the line is greatly to be desired, as it is the chief means of communication from the Bellary and Kurnool Districts to Ongole and the sea coast through Cumbum. What has been done will it is hoped however be preserved in good order, as a maintenance allowance of 100 Rupees per mile has been sanctioned by Government for the current year, and with careful economy and a traffic kept under by the incompleteness of the line on the eastern face, this amount, small as it is especially for a ghaut road, will probably suffice to prevent decadency until funds can be assigned for prosecuting the operations to completion.

Road from Kistnumchettypully through Cumbum and the Vamilapaud Pass to Ongole.

51. Twenty-five miles of this line have been completed at an expenditure of Rupees 23,415. The bridge across the Suggleair at Giddaloor and the remainder of the line up to the Nellore frontier are in progress under the superintendence of Overseer Hunter.

52. Upon the bridges across the Boogga and Rolla rivers near the town of Cuddapah, the expenditure has been Rupees 9,023, during the last year. The Boogga bridge was finished and opened to the public on the 1st April last, six out of the twelve arches of the other bridge have been turned, and the rest of the work is being pushed on* to completion as rapidly as possible.

* Since finished and opened to the public.

53. On the Cuddapah and Bellary frontier road, Rupees 4,498, were expended, and on the Podatoor extension of the Dorenal and Nellore line, Rupees 6,928, during the official year. In both cases the works have been stopped owing to the sanctioned sums having been exhausted; but supplemental estimates have been submitted for finishing the remainder.

BELLARY.

54. The works executed to the channels from the river Toombuddra in the Southern part of the District were the principal that were carried on under the head of irrigation. Rupees 3,491, were expended on the Bussawarra Calwa in the erection of a head sluice and a bridge across the northern part of it. Rupees 3,444, on the Raya Calwa and similar works; and Rupees 1,794 on the Bella Calwa on a bridge and aqueduct.

55. The highest revenue of the Toombuddra channels is 2 lacs of Rupees, but in consequence of defective management, the average yield has hitherto been only 1¼ lacs. They were, however, placed in last year under the superintendence of the Engineer Department, and it is believed that this measure will be followed in a short time by the ordinary revenue being increased to the maximum which the lands are capable of yielding, as the supply of water in the Toombuddra is abundant even in the worst seasons, and consequently there is no reason why the revenue should exhibit more than an inconsiderable fluctuation.

56. The largest expenditure in the District during the last year has been on its roads. The minor masonry works and drains of the communications opened during the late famine, were pushed forward in a very satisfactory manner at an outlay of Rupees 69,401. The road between Ramandroog and Bellary has been placed in fair working order, the expenditure on it being Rupees 11,947, and the bridges on the Dharwar road for the first two stages from Bellary, as well as the roads from the last named place to Darojee and Humpsauger, have been advanced to various stages of completion.

57. The only buildings of note carried on were the Traveller's Bungalows at Gurladinna, Pamdee and Paipully, and the Moonsiff's Court Houses at Bellary, Narraindaverkarra, Tandamurry and Adony.

58. In a review of the operations carried on in this District during the last year, it is impossible to omit a brief notice of the project of a grand Toombuddra Canal, a project which has for its object the utilization of the waters of the Toombuddra on a large scale, suggested by

Colonel Arthur Cotton some little time ago, and which presents such promising aspects, that an Officer has been recently appointed to carry out the requisite preliminary investigations, before the work can be actually decided on. The scheme embraces a Canal of navigation as well as of irrigation from a point on the Toombuddra close to the northern extremity of the Soondoor range of hills, past the town of Bellary across the Huggry river in the Raidroog Talook, and through the Gooty Talook, either to join the Pennaur for purposes of navigation, or to pursue a northern course into the Kurnool District for irrigation. By means of this Canal and the river Pennair made navigable in the lower part of its course, it is hoped to furnish a cheap means of communication between the Bellary District and the Eastern Coast. On the westward the Toombuddra itself and one of its tributaries might be made navigable above Sheemoogah in Mysore, to Dewgherry near Bunkapoor in Dharwar, from which latter place it has been proposed to open a Railway down the western ghauts, to the rising port and harbours of Sedashigur.

KURNOOL.

59. In this District only the following works of considerable magnitude have been executed.

Road from Kurnool to Koodamoor.

This line was opened during the famine of 1853-54, and the work executed during the period under review, has been chiefly the construction of 29 drains having 61 vents in all. The expenditure amount to Rupees 3,621.

Road from Kurnool to Nundy Cunama on the Cuddapah frontier.

60. About 17 miles of this line have been made, and 5 miles of trees planted along the sides, seventy-four drains having 146 vents have been built, some of which are of considerable magnitude, and answer the purpose of arches. The expenditure during the year amounts to Rupees 33,339.

Road from Kurnool to Gooty.

61. This road has been completed from half a mile beyond Dhone to the Kurnool boundary, a distance of 7½ miles, much labor having been expended on it in levelling the ground, removing large quantities of rock and rooting out thick jungle—sixty-three drains of 113 vents and 1 bridge have been built, as also all the minor drains from Yeldoorty to Dindevarapaud, leaving about 20 of these incomplete to finish the entire road. The expenditure amounts to Rupees 17,083.

62. A large bridge across the river Hindree has also been in progress during the year. This work was commenced in November 1855, and by the end of the official year the abutments and some of the piers had been considerably advanced, but on the whole the amount of work done has been exceedingly unsatisfactory. This is attributed by the District Engineer to the difficulty of procuring workmen, and to the occurrence of a sudden fresh in the river, which arrested the progress of the works, destroyed the temporary dams, and filled the excavations.

63. Municipal improvements to the extent of Rupees 4,549, have been executed within the town of Kurnool. The wall which surrounded the place has been rebuilt to nearly three-fourths of its length, but the work appears to have been badly performed, as breaches are reported to have occurred, which had to be repaired out of the unexpended portion of the original estimate.

CHINGLEPUT.

64. Owing to the frequent change of Officers in charge of this District, and to the scanty European superintendence that was at command, the amount of work done during the past year has not been great, but the following important works have nevertheless been carried on.

65. An annicut across the river Cooum at Corattoor which was commenced in February 1855 was completed in June, together with a head sluice to the channel. The work was well executed, but proved of little use in consequence of no water having come down the river during the official year. The expenditure from 1st May 1855 to the date of the completion of the work was Rupees 7,008.

66. The annicut across the river Corteliar near Caseveram, and the surplus Calingulah across the Bungaroo channel, for which a revised estimate of Rupees 16,358 was sanctioned on 13th June 1855, have not made much progress from the want of efficient superintendence. The foundations have been laid, and a good portion of the Calingulah built, but it is believed that the rest of the works will be completed in the course of the present year. The expenditure up to 30th April last was Rupees 5,262.

67. The Cumbum Cal channel which is connected with the Palaur annicut system of irrigation, has been excavated to the distance of 3½ miles, and masonry falls built across it but the progress has not been satisfactory, as only Rupees 10,039 have been spent, out of an estimated outlay of Rupees 3,44,868.

68. The road from Saint Thomas' Mount to Poonamallee with a bridge and annicut across the river Adyaur at the point where it is crossed by that stream has been the principal work under the head of "Communications" executed in Chingleput during the past year. The expenditure on the road was Rupees 6,777, that on the annicut Rupees 10,430, and that on the bridge Rupees 7,723, but the latter has since the commencement of the present year failed from the centerings of the arches having been carried away by an unseasonable swell of the river before the arches had been fully completed.

69. The only other road works deserving mention, are the construction of the line from Trivaloor to Carattoor, on which Rupees 3,715 were expended during the year, and the Palaur Causeway near Chingleput, which was finished in August 1855, the expenditure from 1st May 1856 to that date having been Rupees 10,245.

NORTH ARCOT.

70. By far the most considerable works of irrigation executed in this District during the last year are those connected with the Palaur, Pooney and Cheyaur annicut projects. On the first Rupees 1,79,873 were expended.

71. The annicut is three-fourths completed, two of the head sluices have been entirely finished, and two others are nearly so. The Cauverrypauk, Govindvâda and Darwal channels, have also been much advanced.

72. On the Poony project the expenditure has been Rupees 15,874. The foundations and part of the body of the annicut have been built, and one course of rough stone has been laid down through the entire length of the apron, and the wing walls and piers of the head sluice have been nearly completed.

73. The expenditure on the Cheyaur project was Rupees 8,228; the work consisting chiefly of the widening and extension of the irrigation channels.

74. Various minor irrigation works have been executed in this District, under the direction of the able and zealous District Engineer Captain C. C. Johnston then in charge; but it is unnecessary to recapitulate them in this place.

75. Under the head of communications, the most important item of expenditure is that of the bridge across the Palaur river on the road from Vellore to Chittoor, the foundations of which had been completed, and the piers nearly built at the conclusion of the last year, at a cost amounting to Rupees 20,864. On the road from Pootulpet to Kircumbaddy the expenditure has been Rupees 5,246. Thirty out of the 39 miles of road have been made passable, several of the road dams have been finished and materials were being collected for the construction of the larger bridges, on the line in the course of the present year. The road from Conjeeveram to Thellaur was completed at a total cost of Rupees 11,565, whereof Rupees 2,215, was spent during the period under review. The road from Palmanair to Vencatagherry Cottah, and that from Vellore to Arnee have also made some progress, though much less than they ought to have done, the reason assigned being the difficulty of procuring labourers in sufficient numbers, with the Railroad and so many other competing works under progress.

76. On the Syenagoontah pass, Rupees 1,332, were spent. This line is now open for cart traffic the entire distance, and is being much improved and frequented.

77. Provision was made in the Budget of 1855-56 for a road from Gooriattam to Pullecondah, and for the construction of 5 bridges on the line from Chittoor to Kurcumbaddy; but these works have not been undertaken, the former owing to an alteration of the line originally proposed, and the latter from want of adequate superintendence.

SOUTH ARCOT.

78. The re-building of the Vellaur annicut, upon which a Revenue of Rupees 48,000, is dependant took place in last year. This work was first commenced in 1847, and finished in the following year; and a bridge of 19 arches each of 31 feet span was subsequently built on it for Trunk road No. 9. The bridge fell in March 1853, and the annicut also was seriously injured. After some repairs to it in the following year, it was determined to rebuild it in 1855, and the work was entrusted to Lieutenant A. D. Clay. In September a fresh carried away the portion recently built. The work was however recommenced in January under Assistant Surveyor Downes, by whom the annicut was almost completed at the close of the year, and it was believed that the remainder of the work would be done before July of the current year. The expenditure up to 30th April last amounted to Rupees 44,458.

79. A Calingulah has been built at a cost of Rupees 6,925 in the bund of the Permal tank, a large reservoir, supplied partly from the above annicut. The necessity for the work was much felt, as owing to the tank being wholly unprovided with any escape for surplus water, its bank 7 miles long, and formed for the most part of a range of sand hills, was frequently breached, entailing a great diminution of cultivation and consequent loss to Government, which the provision of an ample Calingulah it is hoped will for the future prevent. With the exception of the above work, and two others viz. the embankment to the Vaunoor tank, and the straightening of the course of the Vuddavaur, and building a sluice in the limits of Coomingoody the irrigation works executed in this District during the year under report have severally been of inconsiderable amounts.

80. Under the head of communications, the first to be noticed are the Trunk roads Nos. 8 and 9, which partly traverse the District. The work done on the former consisted of completing the Erinjee Chepaukum, and Vicravady bridges, metalling and general repairs, that on the latter completing the arches of the Pombay bridge, besides general repairs, and the metalling of the worst portions.

81. The road from Oolundoorpett to Calicoorchy, (23 miles) was finished and opened for traffic. Much progress was also made on the roads from Tindevanum to Trinomally, from Cuddalore to the Salem frontier, from Tindevanum to Pondicherry, and from Cuddalore to Chellumbrum. The bridge over the Poniaur was commenced in September 1855, but the foundations of the piers and the flooring between had been laid for about two thirds of its length. The Cundad lattice-bridge was also commenced; but owing to an alteration called for by the Superintendent of the Eastern Coast Canal; it had not far advanced when the season closed.

82. The Canal from the Paravenar to the Vellaur, and the continuation of it from the Vellaur to the Coleroon have also been under prosecution for part of the year; but their further progress was arrested by an accident to the bund, which was thrown up to assist the action of the Paravenaur.

83. The harbour improvements at Cuddalore have been attended with only partial success; but renewed efforts are being made to carry them into full effect, agreeably to the recommendations of a special Committee ordered to examine and report on Major Lawford's plans.

84. No other works of any consequence has been executed in this District, except the new Flag Staff at Cuddalore, which was almost completed at the conclusion of the past official year.

TANJORE.

85. In this District the lower Coleroon annicut was extended and raised, and a bridge constructed over it during the last year the estimate for these works was Rupees 1,50,000, out of which Rupees 1,08,907 had been expended up to 30th April 1856. Drainage works in and around the Tulnoyer tank have been in progress, and have been attended with beneficial effects. Mr. Cadell the Sub Collector reports, that "the produce of 300 vallies of land which would

"otherwise have remained waste has been secured during the past season" similar works for the drainage of 32 villages between the rivers Adappar and Moolliaur, and the extension of the Manangondanaur to Kodiakurray have been completed with great advantage to the uplands, and this is not the only benefit resulting from the above works. The new cut that has been formed, serves also as a navigable channel, and will be used as such during some months in each year.

86. Among the minor irrigation works executed in Tanjore during the year under review, may be mentioned, the Meenatchy Voikal, on which Rupees 3,117 have been expended, a regulating dam across the rivers Vennaur and Atheeneeraramanaur, to prevent the latter drawing off the waters from the former, altering the course of the Poodooputenum, Oopenaur, and constructing head sluices to the Komekeemennyaur, and Poolwenaur channels.

87. Under the head of communications the large bridge across the Coleroon at Aunakaren Chuttrum deserves the most prominent mention. It is to consist of 40 arches each of 50 feet span, thus making a length of nearly half a mile. Its foundations were laid in the working season of 1855, and by the end of the official year, the abutments, piers and wing walls with twenty arches were completed, at an expenditure of Rupees 1,04,504. The work was done mainly under the superintendence of Mr. D. Horgan Uncovenanted Assistant Civil Engineer, and much credit was due to him for the manner in which the work was executed during the period under review; the accident that subsequently supervened during Mr. Horgan's absence, will have to be considered in the report of a succeeding year.

88. On the road from Papanassum to Satiamungalum, the expenditure has been Rupees 39,096, out of an estimate of Rupees 42,165. Provision was made for bridges across four rivers by which this road is intersected. Of this number, three bridges were finished and opened for traffic during the period under report, as also all the smaller tunnels and bridges for the irrigation and drainage channels which pass transversely across the line.

89. On the road from Kootoor to Shengunthy, the expenditure has been Rupees 3,836, on that from Trivalore to Tritrapoondy, Rupees 11,773, and from Tritrapoondy to Kullimodi, Rupees 5,064. A road and bridges have also been constructed from the lower annicut via Punthanellore to Cootallum, but its surface requires to be improved and widened, before it can be rendered fit for general cart traffic. An expenditure of Rupees 10,911, has been made upon the road from Cangalancherry to Nagore, the object of which is to open a communication between numerous important villages on the north of the Vellaur river, and the port of Nagore.

90. In continuation of the subject of communications, it is also necessary to notice the Canal between the Coleroon and the port of Trimalwassel, and that from the latter place to Tranquebar. The former work was so far advanced, that hopes were entertained of its being opened for traffic in the ensuing year, and the latter was almost completed, mainly through the great interest taken in its progress by Mr. Cadell the Sub Collector; the river Munnyar has been improved for navigation, by cutting off several tortuous bends in it, and placing 2 locks in the bed to moderate the strong current which always prevailed in high freshes. By these means the river has also been rendered navigable in both directions, instead of only down stream as formerly.

91. The channel from Venlanganay to Negapatam has been widened 5 yards, and a bridge of one arch of 36 feet span has been built across it on the Vadamaniem road. The jetty at Negapatam has been raised to 1½ yard above high water mark, thus forming a wharf for the convenience of boats, as well as improving the entrance to the river.

92. The only buildings of note executed during the year are, the re-construction of the Subordinate Court House at Coombaconum at a cost of Rupees 6,860, and the erection of a new Custom House at Nagore for Rupees 2,096.

TRICHINOPOLY.

93. In this District three large works for extending irrigation have been undertaken and have made considerable progress during the past year. These are the prolongation of the Weyacondan channel, on which Rupees 19,687 have been spent,—the Lalgoody channel; the improvement of which has cost Rupees 21,936, and the Poniary new channel which has been cut

for a length of 15 miles, with an average depth of 5 feet, and the principal masonry works built necessary for its effective operation. The expenditure amounted to Rupees 19,373.

94. To restrain and regulate the flood waters of the rivers Cauvery and Coleroon, embankments have been repaired and groins have been constructed at a cost of between 19,000 and 20,000 Rupees, nearly 140 miles of the main channels have been repaired and improved at a cost of 32,000 Rupees and the minor channels kept in an efficient state, at a cost of Rupees 68,000.

95. Lieutenant Ryves's report on the communications of the Province is exceedingly meagre. It appears however that Rupees 51,187 have been expended upon them. A new road on the line of Dindigul has been formed for a distance of 14 miles, and was being metalled at the date of his report. On the Trunk road to Madras No. 8, a bridge of 11 arches was almost finished, nearly 200 miles of road have also been repaired and kept in different states of efficiency in the District during the past year.

MADURA.

96. No new work of any importance under the head of irrigation appears to have been executed in this District during the period under report, the total expenditure on this class of works having been only Rupees 879, but repairs and improvements of magnitude have been performed to several, among these the following claim notice.

Renewing the revetment of the front slope of the Tencarry tank, Rupees 2,389. Widening and raising the Pervanai tank and constructing sluices in it, Rupees 2,033. Facing the crown of the Chittanai dam across the Vigay river and repairing the same, Rupees 1,072. Widening and raising the bank of the Pettacolum tank, Rupees 1,671. Widening and raising the bank of the Coorayoor Periya Cummoy, and repairing its Calingulah and Sluice, Rupees 1,113, and closing breaches and re-building a Sluice in the Tencurray Cummoy, 1,214 Rupees.

97. A bridge of 6 arches each of 30 feet span has been completed across the Goondaur on road No. 4, a southern continuation of Trunk road No. 6 in the Tiroomungalum Talook, at an expense of Rupees 1,721, during the year 1855. Several small bridges, tunnels and road dams have been constructed on the same line, besides raising and metalling it in various places. Repairs and improvements have also been made on roads Nos. 13, 14, 15 and 23 at a total cost of Rupees 6,870.

98. The Ambravutty bridge on the Dindigul and Palghaut road, consisting of 11 arches of 45 feet span each, was commenced in January 1856, under the Superintendence of Lieutenant Scott, and by the close of the official year, 4 piers and the eastern abutment up to the springing line had been completed, at a cost, inclusive of that of the preparatory works, of Rupees 4,018. Considerable difficulty was experienced in laying the foundation of this bridge, owing to unusually early freshes in the river, but it was overcome by the vigour and resources displayed by the Superintending Officer Lieutenant Scott.

99. The Madura Town water project; the estimate for which was sanctioned by Government on the 11th September 1854 for execution out of the Tripany Funds, was commenced in the early part of 1856, under the Superintendence of the English Covenanted Overseer Dudgeon. The embankments for conducting the supply from the river Vigay have been raised to their full height for a length of about 1,000 yards, and the masonry works were about to be commenced at the close of the official year, but Mr. Dudgeon has been removed for inefficiency.

100. Under the head of buildings the following works may be specified as the most important undertaken during the year, all in the Revenue Department viz., the Talook Cutcherry at Mergloor, addition to the Huzoor Cutcherry at Madura, the Peishcar's Cutcherry at Sindooputty, and additions and improvements to the Salt Amildar's Cutcherry at Ramnad. The total expenditure on the above, amounted to Rupees 2,451.

TINNEVELLY.

101. The principal irrigation works executed in this District during the year under review are not many. The revetments to the Neddoovail Coolasagarapairy tank, and the Keelapavoor

Periacolum have been constructed, the former for Rupees 1,239, and the latter to the extent of Rupees 2,153. The Allaganairy tank has been repaired and improved, and the Rancolum extended and enlarged. Under the head of "ordinary" works, a portion of the Soota mullah Annicut across the river Tambraporney has been re-constructed, and the right bank of the river between Mungalacoorchy and Corakay has been raised and repaired, the Annicut across the Ramanuddy at Aulkolly has been rebuilt, and considerable improvements have been made to the Samnalai Periacolum tank, the Velloor tank, the Thencarray tank, the Muradoor Annicut, and the Poongoody Periacolum tank. Considerable benefit would seem to have been derived by the State from the execution of the above improvements in the Tinnevelly and similar ones in the Madura District, but the Civil Engineer feels disposed to attribute them less to those improvements, than to the ordinary fluctuations of the market prices of grain, owing to the Government revenue being payable in kind in these Districts, instead of money as in others.

102. On the Trunk Cotton road between Ettiapooram, and Comarapooram work has been very satisfactorily carried on under the superintendence of Lieutenant Paxton, 43rd Regiment N. I., the side trenches and raising as also the metalling and gravelling of the whole line being completed, a bridge of 7 arches of 30 feet span each has been nearly constructed over the river Cullyaur, and two others of 3 and 5 arches respectively across the rivers Mullataur and Paundyapooram, Oday were commenced during the year and carried up to the height of the piers on the southernmost section of the above line, which was under the charge of Captain Paxton of the 44th Regiment N. I., exceedingly good work has been done, mainly through the instrumentality of the body, of Pioneers, enlisted by sanction of Government towards the end of 1854; but the cost of work so executed is so much greater than that of village labour, that it is proposed to discharge the whole of the Pioneers, the estimate being wholly insufficient to bear the increasing charge on account of their pay. The branch cotton road between Aroopoocottah and Ettiapooram was completed in last year, under the energetic Superintendence of Mr. Harington at a total cost of Rupees 47,739 exclusive of that of European Superintendence.

103. Considerable improvements in the way of providing tunnels and bridges and raising &c. have also been made on roads Nos. 4, 9, 10, 12, 14 and 15, and the following large bridges have been in progress to a greater or less extent during the year, viz. the Katalampatty Oday Platform bridge which was finished; the Veypullyputty bridge of 9 arches of 30 feet span, the Satoor bridge of 15 arches each 41 feet span, and one of 5 arches of 40 feet each across the river Numbyaur.

104. The buildings deserving mention are the Talook Cutcherry at Sautoor which was completed during the past year, the new Court House at Tinnevelly on which Rupees 2,519 were expended, and the Police Cutcherry at Waterap in the Streevellypootoor Talook, which has cost Rupees 415. Out of the Chuttrum funds, the following Chuttrums have been built for the accommodation of the public, viz. the Culputty Chuttrum on road No. 1, Seethaparpanulloor Chuttrum on road No. 9 and Ollaghayapandeapooram Chuttrum on road No. 2.

COIMBATORE.

105. The irrigation works undertaken in the District have not been large nor numerous; the entire expenditure on account of *new* works of this class having been only Rupees 3,564. Extensive repairs and improvements appear however to have been made to old works; the amount expended on them being Rupees 19,885. Among the most important of these, may be mentioned the extension of the Arackencottah channel which has been completed, and the sluices to that and the Toddapully channels which were in progress and were expected to be shortly finished.

106. On roads and bridges, the expenditure amounts to Rupees 34,343 on new works, and Rupees 45,134 on repairs. Under the former class may be mentioned a new bridle road 17 miles in length from Kotagherry to Ootacamund; the bridge across the Avalanche river, the Elk hill cutting, a deep open cut of nearly 100 feet in depth, to overcome the main difficulty of the southern approach to Ootacamund, the new road from that station to Jacatallah, the advantages of which are open to Coonoor also, and in the execution of which many Engineering difficulties have to be combatted; the new traces to connect Ootacamund with the Rail road and with the Beypoor river, the great Coimbatore, Polachee and Odamalcottah road, serving to con-

nect the capital of the District with the important station of Palghaut and Madura with many bridges thereon, all of which have been completed and opened to the public, the Hassanoor road and bridges on which but small progress has been made, on account of the great unhealthiness of the place and the mortality among the artizans that were sent to put up the wooden bridges, and lastly the Bowany bridge at Sattimungalum, consisting of 5 elliptical arches of 50 feet open each. The last arch* of this bridge had been keyed and it was expected that the roadway would have been completed and opened to the public shortly afterwards. Total expenditure to 30th April on Bowany bridge Rupees 30,504.

* Since completed and opened to the public.

107. Public buildings to the amount of Rupees 5,282 have been executed during the period under report, comprising Court houses, Bungalows for travellers, Post offices and wells, &c. many Chuttrums for the accommodation of Native travellers have also been built, including market places for the improvement of trade.

Salem.

108. Owing to the demand for labour created by the Railway works in *progress* in this District, much has not been done during the past year in the irrigation or road departments.

109. The principal items of expenditure under the former heads are the Talavassel Annicut, which cost Rupees 2,777, and the Ammalapolliem Annicut on river Vellaur, which was completed under the same superintendence at an outlay of Rupees 2,377. The works in progress at the close of the year were the construction of the Tanks at Poodeopollium and Poothoor, and the restoration of those at Wodasury, Calanagherry, Conary, Yennaneoolrum and Andapooram, as also an Annicut and channel at Coorchy.

110. Bullock roads from Adamanecottah, and also from Yercaud on the Shevaroy Hills to the Maliapooram Railway station have been completed under the occasional superintendence of Lieutenant Puckle,¶ at the cost of Rupees 10,000 and new roads from Sinkerry Droog to Yeddapaudy and from Yeddapaudy to Poolamputty were in progress, as also a bridge of 3 arches at Nursingapooram.

¶ Since removed to the D. P. W. in Mysore.

111. A place of Arms and Magazine for the detachment of Veterans at Salem were completed under the superintendence of the Officer in command, the former at a cost of Rupees 2,339, and the latter of Rupees 262. A new Moonsiff's Court house at *Namagherrypet* was commenced on an estimate of Rupees 934, and had advanced up to the walls at the close of the year, the expenditure up to that date being Rupees 350. A new *Central Jail* is being projected for construction at Salem.

Canara.

112. The most considerable road works executed in this District during the past year are the following. The road from Guersappah to Sircy, nearly 8 miles of which have been completed and opened to the Public. Bridges on the Arbyle road, on which Rupees 18,906 have been spent during the year, widening and metalling the road from Koompta to the beach, at a cost of Rupees 1,778, nearly 12 miles of the line from Tinni to Hullial have been formed as a bridle path, as also 6 miles of the Singawarree road, the expenditure during the official year on the former being Rupees 3,375, and on the latter Rupees 130, the work being in the final *stage* of its completion. Drains have been constructed along the Devamany road at an expense of Rupees 2,536, and a lattice bridge with some trifling works built on the Munzerabad Ghaut, the progress of which important communication seems to have been much delayed during the last 2 or 3 years from want of proper superintendence. On the three road circuits, an outlay of Rupees 24,698 has been incurred, and on the formation of new District roads, Rupees 20,000. The road from Pane-Mangalore to Ooperangady has been formed throughout and opened for bullock traffic; but requires bridging in several places, before it can become fully useful. The wooden bridges on the Sircy and Siddapoor road have been nearly completed, and a new Ghaut and road have been traced from Yellapoor to the southern bank of the Black river.

113. Besides the above works, much has been done in the way of repairing and maintaining all the existing communications of the District, and from the great and well known attention which has been bestowed on them for many years by several successive Collectors, there is every

promise of this District becoming soon provided with ample facilities for internal transit and communication.

114. Under the head of Harbour works, the most important are the extension of the Quay at Mangalore, and groins at the mouth of the river at that place. The expenditure on the former has been Rupees 3,606, and it has been nearly one third completed; but little or nothing has been attempted in the execution of the latter till about the close of the year, on account of the dams requiring the undivided attention of the Executive Officers.

115. Several buildings have been in course of execution in Canara during the year under report. A Court house for the District Moonsiff of Bhatcul has been completed; seven others for the Moonsiff's of Bilgy, Moodky, Odupay, Rowhul, Pootoor, Sengar, and Soopah were well advanced, and a Travellers bungalow at Coomptah has been finished. Considerable progress was also made with the new Jail buildings at Honore, the Hospetal and the wards for females and debtors, being the only appurtenances that remained uncompleted. Three Salt Koties at Coomptah have been built and some progress made with the light house, but the Sea Custom House works and the embankment to them have been in abeyance, owing probably to the want of Superintendence. Several other works sanctioned for execution have not been commenced probably from the same cause.

Malabar.

116. The most important irrigation work undertaken in this District during the past year, is the Dam at Chetwye, the object of which is to shut out the sea from a considerable estuary of fresh water which would be rendered unfit for the purposes of cultivation. Considerable progress has been made with the work, and in the quarrying and transport of stone under the Superintendence of Major Selby Assistant Civil Engineer. The expenditure up to the 30th April 1856, amounts to Rupees 24,938, leaving a balance of Rupees 21,179 which the Civil Engineer apprehends will not be sufficient for the completion of the work.

117. Malabar being essentially a non-irrigation province, its chief improvements relate to the amelioration of its roads and communications, the principal of which executed during the year are, a 1st class road from Nundoor to Feroke on the Beypoor river 5 miles from the terminus of the Railway, on which the past expenditure amounted to Rupees 13,400; materials for the Palghaut and Trichoor road were prepared in the course of the year, but no progress was made with the actual work. The Coast road northwards towards Cannanore has also received great improvements at various points, several culverts having been built between Muttanoor and Cottaparamba, and the bridge over the Merombay river having been commenced.

118. On the Skeykadoo estuary a bridge was sanctioned, but beyond collecting materials no progress appears to have been made, among the minor works may be specified the Pootoor bridge on the road from Augaddypooram to Tiroovengaddy two bridges on the line from the former place to Wundoor, and two others with a number of drains on the line to Tirtallah. From Nundoor to Perla and also to Nungara, much useful road work has been performed, and a substantial masonry bridge has been built on Trunk Road, No. 5 at Woottapoliem. Various other works of a similar description have been executed, which it is unnecessary to particularize.

119. Improvements to some extent have been carried on on the line of water communication from Pooraramba through Tannore and the Venjelly lake to Veeranellore, and a number of occupation bridges for the accommodation of passengers has been constructed over the Ponary and Chowghat and Tanor and Poorambara canals, besides minor works for the improvement of the banks, and the protection of dams and sluices on the different lines.

120. Under the head of buildings in progress, the light house which has lately fallen and Travellers bungalow at Cochin deserve to be mentioned; the expenditure on them up to the end of the official year having amounted to Rupees 4,769, several Moosaferkanas, Police Ameen's Cutcherries, and Moonsiff's Court houses have also been commenced or constructed at Tanoor, Poonkoy, Tallicherry, Pootengaddy, Ponakaddy, &c. An hospital for the Jail at Calicut has been built at a cost of Rupees 1,416, and repairs to some extent have also been executed to various public buildings.

121. In the conclusion of his report, Captain Ouchterlony makes some interesting remarks on the improvements of which the District of Malabar is capable. In the irrigation Department he observes, that considerable facilities exist for storing water in reservoirs among the mountains to the eastward, particularly among the ranges called the "Uttapady hills, and in the lower steppes of the Koondahs" below Ungindah Peak, where extensive natural basins with narrow outlets afford excellent sites for the purpose. In the Canal department he suggests the deepening and extension of existing lines, rather than the creation of new ones for accommodating steamers, which though they will afford quicker means of locomotion, cannot materially affect the cost of transport, and under the head of roads which constitute the most essential requirements of the District, he proposes a practicable line from the nothern Wynaad Coffee planting District to Calicut, and the coast, and another from the extreme point of the Beypoor river (Areacode) to Coimbatore by the Carcoor Ghaut, which has been recently inspected and most favorably reported on by Captain Francis. To these suggestions which appear deserving of consideration, the attention of the local officers will be directed from time to time.

MADRAS.

122. At the Presidency, several expensive works have been undertaken, such as the improvements to Lying-in-Hospital which have cost Rupees 13,200, the construction of a masonry [illegible] for watering the Fort, Rupees 12,985, alterations and improvements to the Gun Powder [illegible], Rupees 33,500, improvements to the Government Gazette and Lithographic Presses, Rupees [illegible] additions to the Triplicane Dispensary, Rupees 7,130, &c. Municipal improvements to a large extent have also been carried on the most notable of which are the formation of [illegible] from the Commander in Chief's and Saint Andrew's bridges at a cost of Rupees [illegible], the construction of a bridge of 5 arches of 64 feet span each, across the Cooum [illegible] to the back of Ashton and Co.'s shop, and the throwing out of groins on the [illegible] a measure which has happily been attended with the best results, as not [illegible] of land have been reclaimed from the sea and made immediately subservient [illegible], by the construction of a road 70 feet broad from Royapooram along [illegible] Custom House, and Master Attendant's Office. The expenditure [illegible] Rupees, during the past official year.

UPPER GODAVERY.

123. A report on the nature of the operations carried on in this river by the expedition under Lieutenant Haig's command, was recently submitted to Government, and to that [illegible] of navigation. It may however be briefly observed, that the [illegible] which was incurred on those operation has placed beyond a [illegible] the navigation of the river during at least 9 months of the [illegible] have likely to be derived both by the people and the Govern- [illegible] to effect.

EASTERN COAST CANAL.

124. [illegible] of water communication, which is intended ultimately to run [illegible] of the Presidency occupying in length about 600 miles, has been [illegible] during the year under review. To the north of Madras [illegible] Buckingham Canal 21 miles in length has been widened [illegible] embankment formed in connection with the [illegible] within the line of the Canal. Bunds have been [illegible] at a cost of Rupees 8,027 and a tidal lock has [illegible] to the north of Madras. To the south, the [illegible] of 12,66,011 cubic yards [illegible] for the erection of 3 bridges across the line [illegible] completion, while the third was dismant- [illegible] the arches, while the work was in progress. [illegible] Canal has been Rupees 1,41,711, during the [illegible]

[illegible] Mysore, Hyderabad, Saugor [illegible] Government of India, it is unnecessary

to report on them in this review of the operations of the Public Works Department of this Presidency; but it may be generally stated that the works executed in them are not of a very important character, with the single exception of the unique and magnificent range of European Barracks now in progress at Trimulgherry near Secunderabad, on which the expenditure during the past year amounted to Rupees 2,13,173.

126. A classified Synopsis of the expenditure in all branches of the Public Works Department together with the amount disbursed on account of establishments given in the Appendix to this report.

127. As required in para. 12 of the Code of the Department Public Works, I now proceed to report on the bills passed in the Central office during the nine months of the past official year, or from 1st August 1855, to 30th April 1856.

128. The aggregate number of bills passed during the above period is 3,052, which may be subdivided under the following heads:

Bills on account of Public Works...	2,130
Do. submitted to Government	182
House rent bills.....	248
Contingent bills	26
Tentage Statement.....	275
Saugor Current Expense bills	60
Rubbish and Water Cart bills	17
Salary bills of the Presidency Ward	43
Superintendence allowance bills.....	71
Total.....	3,052

129. The aggregate amount of expenditure, comprized in the above bills is Rupees 33,66,643-2-2, of which Rupees 2,58,173-13-4½ were sanctioned by the Government, and Rupees 31,08,469-4-9½ by the Central office, according to the following particulars:

	Passed in the Central Office.			Sanctioned by Government.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
New works	11,27,965	...	6	1,95,961	5	4⅓	13,23,926	5	10½
Repairs	17,10,092	12	½	52,755	8	...	17,62,848	4	½
	28,38,057	12	6½	2,48,716	13	4½	30,86,774	9	11
Miscellaneous, Revenue, Judicial, Ecclesiastical, Military and General charges	32,805	5	2	6,378	15	7	39,184	4	9
Local funds including grass lands, &c.	38,566	11	2	2,645	3	1	41,211	14	3
	29,09,429	12	10½	2,57,741	...	½	31,67,170	12	11
House rent, tentage and other expenditure of a contingent nature	1,99,039	7	11	432	13	4	1,99,472	5	3
Total	31,08,469	4	9½	2,58,173	13	4½	33,66,643	2	2

130. The following Statement exhibits more fully the details of the expenditure in question under the proper heads of charge.

	Passed in Central Office.						Sanctioned by Government.								
	New works.			Repairs.			New works.			Repairs.					
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	4,68,481	...	11	11,17,227	10	3	60,047	3	...	.....	...	...			
Navigable canals	.....	...	...	5,736	...	10	27,472	12	5	.....	...	...			
Roads & bridges	2,59,285	6	4	1,90,991	1	6½	50,130	15	10½	7,259	12	5			
Trunk roads....	1,64,173	1	8	1,64,879	5	4	37,745	10	2	.....	...	...			
Public buildings	45,190	1	10	30,444	9	10	313	3	11	9,709	14	9			
Revenue do....	50,849	13	9	30,823	5	8	1,774	13	...	1,431	14	2			
Political do....	.....	...	...	92	...	...	.....	...	...	.....	...	...			
Judicial do....	23,031	10	4	13,410	1	6	2,256	15	11	2,370	3	...			
Eccl. do....	8,273	5	9	10,338	13	6	.....	...	...	2,382	1	2			
Military do....	79,846	14	3	1,21,173	...	...	11,673	15	9	29,326	9	6			
Marine do....	23,883	5	8	24,976	11	4	.....	...	...	275	1	...			
Ports and Harbours	4,950	4	...	....	...	...	4,545	11	4	.....	...	...			
	11,27,965	...	6	17,10,092	12	½	1,95,961	5	4½	52,755	8	...			
													30,86,774	9	11
Miscellaneous Revenue.. ...	.....	...	...	10,074	9	...	.....	...	...	1,717	14	5			
Do. Judicial.	.....	...	...	616	8	...	.....	...	...	620	1	4			
Do. Eccl.. ...	.....	...	...	4,013	5	9	.....	...	...	91	6	4			
Do. Military.	.....	...	...	4,575	6	10	.....	...	...	684	10	5			
Do. General.	.....	...	...	13,525	7	7	.....	...	...	3,261	15	1			
	.....	...	...	32,805	5	2	.....	...	...	6,378	15	7			
													39,184	4	9
Local funds.....	.....	...	...	21,905	...	3	.....	...	...	2,596	3	1			
Pagoda funds...	.....	...	...	7,564	7	3	.....	...	...	.....	...	...			
Cart tax fund...	.....	...	...	2,998	7	...	.....	...	...	.....	...	...			
Choultry fund..	.....	...	...	1,700	...	...	.....	...	...	.....	...	...			
Grass lands.....	.....	...	..	1,775	14	...	.....	...	...	.....	...	...			
Salaries &c. of the old Maramut establishment previous to 1853.....	.....	...	...	2,622	14	8	.....	...	...	49	...	...			
	.....	...	...	38,566	11	2	.....	...	...	2,645	3	1	41,211	14	3
													31,67,170	12	11
House rent bills	.....	...	...	16,675	...	10	.....	...	...	13	5	4			
Contingent bills	.....	...	...	934	4	2	.....	...	...	.....	...	...			
Tentage bills...	.....	...	...	1,42,188	1	5	.....	...	...	.....	...	...			
Saugor current expence bills.	.....	...	...	29,118	3	11	.....	...	...	419	8	...			
Rubbish and water cart bills.	.....	...	...	1,107	...	...	.....	...	...	.....	...	...			
Salary bills of the Supt. of Govt. roads...	.....	...	...	3,506	13	7	.....	...	...	.....	...	...			
Supt. allowance bills.....	.....	...	..	5,510	...	...	.....	...	...	.....	...	...			
	.....	...	...	1,99,039	7	11	.....	...	...	432	13	4	1,99,472	5	3
Total.....													33,66,643	2	2

131. Under the three general heads of Irrigation, Communication, and Buildings, the audited expenditure may be thus classified :

	Passed in the Central office.			Sanctioned by Government.		
	Rs.	A.	P.	Rs.	A.	P.
Irrigation, New works.....	46,848	...	11	6,004	3	...
Repairs.....	11,17,227	10	3	.....	...	...
Communication, New works.....	4,28,408	12	...	1,19,895	1	9½
Repairs.....	3,61,606	7	8½	7,259	12	5
Buildings, New works.....	2,31,075	3	7	16,019	...	7
Repairs.....	2,31,258	10	1	45,495	11	7
	28,38,957	12	6½	2,48,716	13	4½
Tentage to various Members of the D. P. W. agreeably to Regulation.....	1,42,188	1	5	.....	...	...
Miscellaneous charges including House rent bills.....	1,28,223	6	10	9,457	...	...
Total.....	31,08,469	4	9½	2,58,173	13	4½

132. The following Statement exhibits the distribution of the above expenditure amongst the several Districts, &c.

	Rs.	A.	P.		Rs.	A.	P.
Ganjam.....	6,026	8	6	Coimbatore	28,851	15	2
Vizagapatam.....	40,353	13	3	Salem.....	40,056	12	8
Rajahmundry	4,65,994	12	10	Canara	1,61,881	10	9½
Masulipatam.....	3,29,725	6	4	Malabar.....	29,448	8	2
Guntoor	20,548	4	2	Madras	1,68,979	3	9
Nellore.....	96,598	14	7	Mysore Division	22,626	2	7
Cuddapah.....	35,784	10	2	Secunderabad.	50,011	13	1
Bellary	1,75,835	14	8	Saugor	24,428	8	2
Kurnool.....	18,321	8	5	Jaulnah	7,346	2	1
Chingleput	17,544	5	11	Mergue.....	32	10	11
North Arcot	63,149	13	1	Penang	28	8	0
South Arcot.....	1,14,293	13	11		25,80,377	5	10½
Tanjore	4,67,900	6	10	Trunk roads.....	3,29,052	7	0
Trichinopoly.....	44,187	14	1				
Madura	85,361	10	1	Total.....	29,09,429	12	10½
Tinnevelly	65,057	9	8				

Ganjam.

133. The total amount of bills for expenditure incurred in the Ganjam District has been but small, aggregating Rupees 6,026-8-6; the particulars of which are as follows, none of the individual bills are of any importance.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works, ...	.....	...	...	3,215	15	3	3,215	15	3
Roads and bridges, ...	.....	...	...	89	11	5	89	11	5
Public buildings, ...	102	...	5	36	13	...	138	13	5
Judicial do.	.....	...	...	410	6	11	410	6	11
Ecclesiastical do.	318	3	4	89	7	..	407	10	4
Military, do.	.....	...	...	1,548	15	2	1,548	15	2
Local Funds, ...	.....	...	...	.....	...	...	215	...	...
Total.....	420	3	9	5,388	4	9	6,026	8	6

VIZAGAPATAM.

134. In Vizagapatam, the total amount of bills passed is Rupees 40,353-13-3; and they are distributed under the following heads of charge.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works,	7,474	3	1	11,288	11	5	18,762	14	6
Roads and bridges,	8,548	14	4	2,366	8	2	10,915	6	6
Public buildings,	3,781	8	4	...	...	...	3,781	8	4
Revenue do.	...	...	...	486	9	...	486	9	...
Judicial do.	...	...	...	448	8	...	448	8	...
Military do.	...	...	...	929	3	2	929	3	2
Miscellaneous General.	...	...	...	...	...	...	2,793	...	6
Do. Revenue,	...	...	...	...	...	...	1,960	9	...
Local funds,	...	...	...	...	...	...	276	2	3
Total.	19,801	9	9	15,519	7	9	40,353	13	3

135. No bill has been passed for new works under the head of Irrigation, for any considerable amount, but on account of repairs performed during the year 1854, a bill has been examined and passed for Rupees 10,935-5-5.

136. Under the head "roads and bridges" there has been one bill passed for Rupees 8,548-14-4, viz. for constructing a branch road from Vizagapatam to Vamoolavulsah, the estimate for which was Rupees 8,564-14-4.

RAJAHMUNDRY.

137. The total amount of bills passed for works in Rajahmundry is Rupees 4,65,994-12-10 under the following heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works,	1,14,460	3	5	2,97,316	...	...	4,11,776	3	5
Roads and bridges,	14,628	14	1	2,433	...	9	17,061	14	10
Public buildings,	...	...	...	54	8	...	54	8	...
Revenue do.	...	...	...	76	12	4	76	12	4
Judicial do.	...	...	...	401	11	9	401	11	9
Military do.	...	...	...	49	2	...	49	2	...
Marine do.	17,887	13	...	170	13	2	18,058	10	2
Groins,	4,950	4	...	...	...	...	4,950	4	...
Miscellaneous, Military,	...	...	...	...	...	...	495	11	3
Local funds,	...	...	...	...	...	...	13,069	15	1
Total.	1,51,927	2	6	3,00,502	...	...	4,65,994	12	10

138. The following are some of the more important bills which have been audited on account of new works "in Rajahmundry."

Irrigation.

	Bills.			Estimates.		
	Rs.	A.	P.	Rs.	A.	P.
For constructing Irrigation Works during the year 1854, ...	5,243	5	5	5,633	14	...
Excavating Irrigation channels for the Rallie and Amalapoor Talook, Central Delta.	26,718	12	...	26,718	12	...
Excavating branch channels to Appanapillay, Doddarum, Paserlapoody and its Lunka in the Nagarum Talook.	4,989	1	...	5,027	1	...
Opening new drains and digging new channels (small) to the fields of different villages in the Naggarum Talooks. ...	11,752	3	...	10,022	5	...
	Supt.			1,500	...	...

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Covering and flooring under the arches of the Gummasedum Acqueduct in the Nagarum Talook.	15,395	15	...	15,450	...	...
Constructing a Calingulah at Cowlawmerum in the Yanam branch channel.	10,152	1	...	11,308	5	...
Extending the river embankments from Ramaraz Lunkah down to Sakenalepillay on the western side of Nagarum Talook.....	12,405	13	...	12,405	13	...
Cutting a channel in the limits of Sakenalepilly through the south of the Nagarum Talook.	7,634	...	...	7,623	...	...
New cut from the Oopoolaur near Yaloorpaud to Mullumpoody in the Salt swamp below the Colair...	16,942	...	...	16,875	...	...

139. Under the head "roads and bridges" the two following are the principal bills which have been passed.

	Bill.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Constructing bridges on the road between Cacraparroo and Nursapoor in Rajahmundry	5,686	6	7	5,823	15	4
Do. do. do.	7,442	2	5	7,470	13	0

140. The following has been the only bill which has been passed appertaining to "Marine buildings."

	Bill.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Improving the port of Cocanada and Coringa bar	17,887	13	0	17,887	13	0

and there has been one bill passed under the head "Groynes."

	Bill.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Erecting rough stone Groynes to the eastern bank of Nursapoor branch of the Godavery	4,950	4	0	5,000	0	0

141. There have been several bills passed under the Head "Local Funds" but the following is the only one for a considerable amount.

	Bill.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Building Ferries for the passage in the channels for men and cattle throughout the Delta.	9,614	7	0	9,572	2	0

142. The audited expenditure in the Rajahmundry District, is chiefly on account of repairs, "and the following are the principal bills which have been passed, all of them being on account of Irrigation works."

	Bills.		
	Rs.	A.	P.
Charges incurred from 1st January to 11th July 1854, to the servants of the Maramut Department.	26,950	1	10
For Irrigation works during the year 1854,	12,005	9	3
Do. do. do.	4,193	8	3
Do. under the management of the Civil Engineer Godavery Division in 1854,	15,762	10	1
Ordinary works connected with the Godavery Annicut, executed under the Superintendence of the Civil Engineer's Department in 1854,. .	33,301	12	6
Do. of Irrigation do. do.	1,80,025	11	7

MASULIPATAM.

143. The bills appertaining to this District, which have been passed in this office, amount to Rupees 3,29,725-6-4, and stand classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	2,81,770	1	9	35,568	15	8	3,17,339	1	5
Roads and bridges	0	0	0	5,817	6	11	5,817	6	11
Navigable canals	0	0	0	199	4	0	199	4	0
Public buildings	0	0	0	372	14	10	372	14	10
Revenue do.	345	11	0	1,562	14	0	1,908	9	0
Military do.	0	0	0	3,804	8	2	3,804	8	2
Miscellaneous, Ecclesiastical	0	0	0	0	0	0	283	10	0
Total...	2,82,115	12	9	47,325	15	7	3,29,725	6	4

144. The following are the principal works for which bills have been passed in this District.

Irrigation.

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Widening and deepening the Toongabudra channel from Seetanagram as far as the village of Pedda Vadlapoody and making two new cuts across sharp heads	57,460	1	5	56,460	1	5
Widening the head of the main Irrigation channel at Bezwarah and cutting a branch to connect it with the Poolairoo	71,715	1	6	68,462	6	1
Cutting a Masonry bridge to carry the high north road, and the high road from Hyderabad to Masulipatam	7,584	14	10	7,584	14	10

and under the head repairs of Irrigation works the following bill has been passed besides a few others for small amounts.

Repairs of tanks &c., on the Government estates in the District of Masulipatam ..... Rupees 25,018 15 8

GUNTOOR.

145. The amount of bills passed for works executed in this District is inconsiderable, amounting in the aggregate to only Rupees 20,548-4-2, it is not necessary to advert to any particular bills, as they are all for small amounts; the following Statement however affords a classified view of the same.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	0	0	0	6,266	1	8	6,266	1	8
Roads and bridges	0	0	0	4,353	2	7	4,353	2	7
Public buildings	0	0	0	492	9	6	492	9	6
Revenue do.	617	6	7	315	4	1	932	10	8
Local funds	0	0	0	7,564	7	3	7,564	7	3
General, Miscellaneous	0	0	0	0	0	0	365	10	8
Revenue do.	0	0	0	0	0	0	573	9	10
Total...	617	6	7	18,991	9	1	20,548	4	2

NELLORE.

146. The total amount of bills passed of works executed in this District, is Rupees 96,598-14-7, under the following heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	4,474	11	0	67,436	11	0	71,911	6	0
Roads and bridges	10,117	1	5	2,162	1	2	12,279	2	7
Public buildings	0	0	0	1,113	8	3	1,113	8	3
Revenue do.	4,446	2	4	2,480	1	0	6,926	3	4
Military do.	0	0	0	5	10	11	5	10	11
Marine do.	1,336	14	1	119	9	7	1,456	7	8
Judicial do.	2,432	4	2	264	11	7	2,696	15	9
Local funds	0	0	0	0	0	0	128	1	2
Revenue, Miscellaneous	0	0	0	0	0	0	81	6	11
Total...	22,807	1	0	73,582	5	6	96,598	14	7

147. Under the head of " New Works" there has been no bill passed for any project of magnitude, but under that of " Repairs," there has been one bill passed on account of Irrigation Works, viz.

For the Ordinary repairs of Tanks and water courses during the year 1854, ... } Rupees 61,342 0 0

CUDDAPAH.

148. In this District, the audited expenditure on Public Works is not considerable, it amounts to Rupees 35,784-10-2 of which Rupees 24,612-11-8 are for ordinary repairs in 1854, of Tanks and water courses, and Rupees 9,092-15-6 on account of repairs to certain roads in this District during the years 1852-53 and 1854. The whole amount stands classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	0	0	0	25,947	11	7	25,947	11	7
Roads and bridges	0	0	0	9,092	15	6	9,092	15	6
Public buildings	0	0	0	443	4	1	443	4	1
Military do.	271	11	9	28	15	3	300	11	0
Total...	271	11	9	35,512	14	5	35,784	10	2

BELLARY.

149. The aggregate amount of the bills passed on account of works in this District is Rupees 1,75,835-14-8, and is classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	401	14	...	1,38,225	...	...	1,38,626	14	...
Roads and bridges	7,569	9	8	20,939	2	9	28,508	12	5
Public buildings	2,445	5	...	898	2	...	3,343	7	...
Judicial do.	2,724	10	11	.....	...	...	2,724	10	11
Ecclesiastical do.	697	...	1	135	13	8	832	13	9
Military	.....	...	...	1,537	2	4	1,537	2	4
Ecclesiastical, Miscellaneous	.....	...	...	.....	...	...	262	2	3
Total.....	13,838	7	8	1,61,735	4	9	1,75,835	14	8

150. There has been no bill passed one account of any particular new work in this District, except the following under the head "roads and bridges" viz.

	Bill.	Estimate.
For constructing the Bellary and Ramandroog road Ghauts.....	7,569 9 8	7,589 12 0

and under the head of "Repairs" the only bills passed were on account of repairs of "Irrigation works and repairs of roads and bridges." The three following bills are on account of repairs of Irrigation works.

	Rs.	As.	P.
Repairing on emergency Irrigation works in the year 1854, ...	48,553	4	0
Ordinary works of Irrigation do.	19,921	7	0
Restoring Sunganamalla Tank in the Bellary Division Ceded Districts in 1854,	60,400	12	0

151. The following bills are on account of repairs of "roads and bridges" viz.

Maintaining 289 miles of roads made by famine coolies in Bellary during the year 1854-55 - - - - - -	Rupees	20,311 3 0

KURNOOL.

152. The amount of bills passed on account of works in Kurnool is only Rupees 18,321-8-5. There are no bills requiring special notice. The whole amount is classified under the following heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works - - - - - - - - - - -	1,070	8	9	1,642	7	4	2,713	0	1
Roads and bridges - - - - - - - - - -	314	12	5	243	0	0	557	12	5
Public buildings - - - - - - - - - -	8,989	15	11	0	0	0	8,989	15	11
Revenue do. - - - - - - - - - -	5,250	10	4	341	8	0	5,592	2	4
Military do. - - - - - - - - - -	0	0	0	2	9	8	2	9	8
Miscellaneous general - - - - - - - - -	0	0	0	0	0	0	466	0	0
Total...	15,625	15	5	2,229	9	0	18,321	8	5

CHINGLEPUT.

153. In this District also, the amount of bills passed for works executed therein is very inconsiderable, amounting to only Rupees 17,544-5-11, and the following is the only bill deserving notice. It is for the construction of an irrigation work, discribed thus.

	Bill.	Estimate.
Extending the Coratoor Annicut during the year 1854 - - -	16,257 7 1	16,357 14 1

154. The whole amount stands thus classified.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works - - - - - - - - - - -	16,257	7	1	0	0	0	16,257	7	1
Roads and bridges - - - - - - - - - -	0	0	0	1,109	3	0	1,109	3	0
Ecclesiastical buildings - - - - - - - - -	0	0	0	53	1	4	53	1	4
Military do. - - - - - - - - - -	0	0	0	124	10	6	124	10	6
Total...	16,257	7	1	1,286	14	10	17,544	5	11

NORTH ARCOT.

155. The bills audited and passed for works executed in this District amount to Rupees 63,149-13-1, of which Rupees 26,006-7-9, are on account of the construction of "irrigation works." The following are the principal items passed under the above head.

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Cutting channels from head of the Goonoomudday to Govindavdy tank during the half year ending 30th October 1855, -	14,995	9	11	43,852	13	...
Constructing Aqueduct and Masonry fall on the channel from do. to do. during do. - - - - - - - - -	3,138	12	2			

156. Under the heads "roads and bridges" and "Revenue buildings" the following are the Chief items of expenditure audited.

		Bills.			Estimate.		
		Rs.	A.	P.	Rs.	A.	P.
Roads and bridges.	Earthwork on 2nd class road No. 1, from Wallajah Nugger to Sholingur - -	3,297	9	1	6,845	2	...
	Constructing Masonry work on do. - -	3,547	9	...			
Revenue buildings.	Rebuilding the Talook Cutcherry at Nagulpoor in 1853, - - - - -	993	14	3	1,294	6	1
	Constructing a new Talook Cutcherry at Chendinghurry in 1853, - - -	1,801	6	1	1,801	6	1
	Do. a Hoozoor Cutcherry at Chittoor in 1853, - - - - -	2,589	9	9	2,591	1	3
	Do. a Police Ameen's Cutcherry in 1853,	1,358	1	...	1,334	6	...

the above bills are all on account of new works, under the head of repairs no bill has been passed requiring particular notice. The whole stands classified under the following heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works - - - - - - -	26,006	7	9	12,617	6	11	38,623	14	8
Roads and bridges - - - - - - -	7,919	5	4	1,499	15	8	9,419	5	...
Public buildings - - - - - - -	.....	...	...	69	...	...	69	...	...
Revenue do. - - - - - - -	6,742	15	1	153	10	6	6,896	9	7
Judicial do. - - - - - - -	.....	...	...	1,382	9	11	1,382	9	11
Ecclesiastical do. - - - - - -	.....	...	...	347	11	...	347	11	...
Military do. - - - - - - -	.....	...	...	5,345	3	11	5,345	3	11
Political do. - - - - - - -	.....	...	...	92	...	...	92	...	...
General, Miscellaneous - - - - - -	.....	...	...	.....	...	..	223	7	...
Grass lands - - - - - - -	.....	...	...	.....	...	...	750	...	...
Total...	40,668	12	2	21,507	9	11	63,149	13	1

SOUTH ARCOT.

157. The bills passed for works in this District amount to Rupees 1,14,293-13-11. On account of new works, there have been no bills passed requiring special notice, on account of repairs the following may be mentioned.

Repairs of Irrigation works.

		Rs.	A.	P.
18,903-0-8 28,039-1-4	Repairing emergent works of Irrigation in South Arcot during 1854, - - - - - - - - - - -	9,605	7	4
46,942-2-0	Two bills on account of ordinary works of Irrigation performed during 1854, - - - - - - - - - -	46,942	2	0

Repairs of roads and bridges.

Repairing road from Cuddalore to Trivady, and also the road from Nellicooppam to Oolundoor via Pullumbakum - -	10,989	0	9
Repairing roads in the District of South Arcot out of the allowance of Rupees 5,500, - - - - - - - -	4,700	5	11

158. The whole amount of the bills passed is classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	3,487	3	6	64,794	15	8	68,282	3	2
Roads and bridges	8,344	14	...	25,481	11	2	33,826	9	2
Navigable canals	.....	...	...	2,782	12	6	2,782	12	6
Public buildings	452	2	4	162	7	10	614	10	2
Revenue do.	373	5	10	1,086	12	1	1,460	1	11
Judicial do.	.....	...	...	118	12	2	118	12	2
Marine do.	3,916	...	6	1,458	10	11	5,374	11	5
Local funds	.....	...	...	.....	...	...	1,834	1	5
Total...	16,573	10	2	95,886	2	4	1,14,293	13	11

TANJORE.

159. The bills passed for works executed in this District, exceed the amount of any other District. It amounts to Rupees 4,67,900-6-10. There is a great disparity between the amount on account of new works and on account of repairs. The former aggregating only Rupees 43,861-11-0, while on account of repairs, the amount is Rupees 4,24,038-11-10, the bills passed for new works are comparatively of an insignificant character. The following are some of the principal bills passed for "repairs."

Repairs.

	Rs.	A.
Emergent works performed for the improvement of Irrigation works in 1854,	33,462	8
Ordinary works of Irrigation do. do.	2,43,685	6
Seven bills on account of occasional works performed for the benefit of Irrigation	17,163	6
Thirteen bills for do. do.	39,877	7

Roads and bridges.

Repairs and Minor improvements to roads and bridges in 1854,	20,000	

Marine buildings.

Repairing Groynes for protecting the town of Tranquebar	20,000	
Improving the river at the Port of Negapatam	3,000	

160. The whole of the bills passed stand classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	.....	...	...	3,34,188	11	...	3,34,188	11	...
Roads and bridges	42,511	12	...	40,607	6	...	83,119	2	...
Navigable canals	.....	...	...	1,478	10	...	1,478	10	...
Public buildings	.....	...	...	1,819	12	...	1,819	12	...
Revenue do.	1,211	14	...	9,990	1	...	11,201	15	...
Judicial do.	138	1	...	2,845	3	...	2,983	4	...
Ecclesiastical do.	.....	...	...	1,332	9	2	1,332	9	2
Military do.	.....	...	...	979	15	...	979	15	...
Marine do.	.....	...	...	23,000	...	...	23,000	...	...
Local funds	.....	...	...	.....	...	...	5,830	13	8
Miscellaneous, Revenue	.....	...	...	.....	...	...	1,965	11	...
Total...	43,861	11	...	4,16,242	3	2	4,67,900	6	10

TRICHINOPOLY.

161. The amount of bills passed for works executed in this District amount to Rupees 44,187-14-1, of which the sum of Rupees 1,184-0-1, is on account of new works. Rupees 43,003-14-0, is on account of repairs, and the greater portion of this latter sum viz., Rupees 35,735-4-7, is for repairs of Irrigation works performed during the year 1854. The whole amount stand under the following heads of charge.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	1,184	...	11	35,735	4	7	36,919	5	6
Roads and bridges	.....	...	...	3,876	1	...	3,876	1	...
Public buildings	.....	...	...	1,672	13	7	1,672	13	7
Revenue do.	.....	...	...	322	12	2	322	12	2
Judicial do.	.....	...	...	760	15	6	760	15	6
Ecclesiastical do.	.....	...	...	41	4	10	41	4	10
Military do.	.....	...	...	589	13	6	589	13	6
Miscellaneous, General	.....	...	...	.....	...	...	4	12	...
Total...	1,184	...	11	42,999	1	2	44,187	14	1

MADURA.

162. The bills passed for works in this District, amount to Rupees 85,361-10-1, viz., for new works Rupees 49,203-7-3, and on account of repairs, Rupees 36,158-2-10. The only bill of any importance under the former head is the following all the other bills are comparatively of an insignificant character.

	Bill.			Estimate.		
Branch cotton road in this District	31,942	1	2	31,982	9	8

163. Under the head repairs, the chief bill passed, are on account of Irrigation works in this District, and on account of roads and bridges, which however need no particular description. The whole audited amount stands classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	.....	...	...	25,903	2	4	25,903	2	4
Roads and bridges	46,347	2	3	8,340	4	6	54,687	6	9
Public buildings	449	11	...	775	10	...	1,225	5	...
Revenue do.	2,806	10	...	729	5	...	3,535	15	...
Military do.	.....	...	...	9	13	...	9	13	...
Total...	49,603	7	3	35,758	2	10	85,361	10	1

TINNEVELLY.

164. The aggregate sum of Rupees 65,057-9-8, comprizes all the bills passed for works in this District, the following are the chief items under the class of new works. Those on account of Irrigation are all for small amounts, which I shall not specially refer to.

Road and Bridges.

	Bills.			Estimate.		
Bridge on road No. 4, across the Vendooputty river from Madura to Quilon in 1854,	8,243	8	0	8,725	1	0

Military buildings.

	Bill.	Estimate.
Two bills for building a place of Arms, Serjeant's quarters and Store rooms &c., &c. at Palamcottah	8,300 0 0	8,545 14 4

165. Under the head repairs there have been no bills for works of any importance passed, all being for small amounts. The following statement shews the amount of bills under their respective heads of charges.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	A.	Rs.	A.	P.
Irrigation works	10,520	6	...	8,224	8	7	18,744	14	7
Roads and bridges	11,481	2	3	6,623	11	4	18,104	13	7
Public buildings	.....	...	...	601	14	5	601	14	5
Revenue do	9,302	3	1	330	15	4	9,633	2	5
Judicial do	2,034	9	...	267	2	...	2,301	11	...
Ecclesiastical do	3,977	6	10	.....	...	...	3,977	6	10
Military do	10,915	4	9	.....	...	...	10,915	4	9
Marine do	.....	...	...	132	2	...	132	2	...
Miscellaneous, General	.....	...	...	.....	...	...	12	15	8
do Ecclesiastical	.....	...	...	.....	...	...	633	4	5
Total...	48,230	15	11	16,180	5	8	65,057	9	8

COIMBATORE.

166. The bills passed for works in this District, including the Neilgherries, amount to Rupees 28,851-15-2, there have been no bills for works of any importance passed on account of new works, on account of repairs, Rupees 19,326-4-5, one for works of Irrigation and Rupees 5,800 for the Neilgherry Ghauts and roads. The whole of the bills stand thus classified.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	416	8	8	19,326	4	5	19,742	13	1
Roads and bridges	.....	...	...	5,800	...	...	5,800	...	...
Military buildings	3,200	...	...	99	2	1	3,299	2	1
Ecclesiastical do	.....	...	...	10	...	...	10	...	...
Total...	3,616	8	8	25,235	6	6	28,851	15	12

SALEM.

167. The amount of bills passed for works executed in this District is Rupees 40,056-12-8. There have been no bills for any particular works passed, more than a moiety of the whole amount being for repairs of Irrigation works. The bills stand classified thus.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	957	5	...	27,772	8	11	28,729	13	11
Roads and bridges	719	...	...	2,953	8	8	3,672	8	8
Public buildings	1,754	13	5	517	8	2	2,272	5	7
Revenue do	.....	...	...	230	13	2	230	13	2
Judicial do	.....	...	...	441	12	4	441	12	4
Ecclesiastical do	.....	...	...	.....	...	...	.....	...	...
Military	.....	...	...	.....	...	...	4,709	7	...
Total...	3,431	2	5	31,916	3	3	40,056	12	8

CANARA.

168. The amount of bills passed for works in this District is Rupees 1,61,881-10-9½. The sum of Rupees 84,814-13-4 is on account of new works under the head "Roads and Bridges," and the following are some of the principal bills which have been passed under this head.

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Forming a road from Eckumby to Samudegee in Soondah Talook from 1851 to 1853	4,085	1	1	4,086	4	6
Do. from Jalsoor to Cassergode in the Bekul and Pooloor Talook from 1849 to 1853	9,731	3	0	9,732	3	...
Tracing and opening the road between Guersapah and Sagur in 1852 and 1853	4,994	14	8	5,000	...	...
Constructing the Devamunny Ghaut and road in Canara from 1st May 1850 to 29th April 1854	24,593	12	8	23,958	3	...
Making a first class road from Yellapoor to Kirivutty in 1852 and 1853	4,857	6	5	5,151	13	...
Opening a road between Hulliah and Sedasheghur via the Shungawaria pass in the Soopah and Ankola Talooks	9,965	1	5	9,850	...	...
Forming a road from Perdoor to Oodipy and Mulpay, being a continuation of the Agoombay Ghaut and Hebbra road from 1851 to 1855,	5,888	3	1	5,987	13	7
Public Buildings.						
Building a Civil Dispensary and compound wall, and sinking a well at Mangalore 1854,	4,976	8	3	4,949	11	7
Judicial Buildings.						
Building Court house for three Sudr Ameen's at Mangalore during the year 1853,	4,162	8	6	4,233	6	4

all the other bills are for amounts considerably smaller than the above, and need no particular discription.

169. Under the head repairs, the following are the principal bills passed.

Roads and bridges.

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Improving and repairing the Arbyle Ghaut and road in 1853-54,	4,250	...	...	4,250	...	...
Annual repairs to the Coompta and Dharwar frontier roads in 1853,	3,831	...	...	3,822	...	...
Repairing and improving the Nilcoond Ghaut in the Talooks of Soondah and Honore Districts in 1853-54,	5,000	...	...	5,000	...	...
Do the road from Coompta to Sumpkhund by the Nilcoond Ghaut in the above Talooks in 1854-55,	7,050	...	...	7,050	...	...

170. The following Statement exhibits more fully the amount of bills passed under their respective heads of charge.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Roads and bridges	84,814	13	4	28,104	8	11½	1,12,919	6	3½
Public buildings	6,192	2	7	1,542	6	3	7,734	8	10
Revenue do.	15,748	15	5	9,907	8	...	25,656	7	5
Judicial do.	9,852	12	7	935	...	7	10,787	13	2
Military do.	.....	...	...	197	9	4	197	9	4
Marine do.	4,254	8	10	.....	...	...	4,254	8	10
Local funds	.....	...	...	.....	...	...	331	4	11
Total...	1,20,863	4	9	40,687	1	1½	1,61,881	10	9½

MALABAR.

171. In Malabar the bills passed for works executed therein, amount to Rupees 29,418-8-2. All of which are for small amounts, and do not require particular notice. The whole sum stands classified under the following heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	.....	...	...	842	14	7	842	14	7
Roads and bridges	1,799	14	7	7,508	12	5	9,308	11	...
Navigable canals	.....	...	...	300	...	...	300	...	...
Public buildings	3,344	8	6	2,417	8	2	5,762	...	8
Revenue do.	4,004	...	1	2,694	...	10	6,698	...	11
Judicial do.	1,245	4	3	730	7	11	1,975	12	2
Ecclesiastical do.	.....	...	...	44	15	7	44	15	7
Military do.	.....	...	...	632	8	9	632	8	9
Marine do.	.....	...	...	83	6	8	83	6	8
Local funds	.....	...	...	.....	...	...	208	9	9
Miscellaneous Military charges.	.....	...	...	.....	...	...	158	15	8
Do. General do.	.....	...	...	.....	...	...	25	6	8
Do. Judicial do.	.....	...	...	.....	...	...	311	1	...
Do. Ecclesiastical do.	.....	...	...	.....	...	...	1,223	2	1
Do. Revenue do.	.....	...	...	.....	...	...	1,872	14	8
Total...	10,393	11	5	15,254	10	11	29,448	8	2

MADRAS.

172. The bills passed for works executed at the Presidency &c., amount to Rupees 1,68,979-3-9, the following are some of the chief works for which bills have been audited.

New Works.

	Bills.			Estimate.		
	Rs.	A.	P.	Rs.	A.	P.
Roads and bridges.						
Constructing a roadway of 60 feet in width along the left bank of the Coum river between the Commander in Chief and St. Andrew's bridges	8,328	4	3	8,328	4	5
Public buildings.						
Constructing a Masonry Sewer of 2050 feet in length from Rasapah Chitty Street, to the main drain and for increasing the sectional area of the same drain from 4 to 20 feet for the last 50 yards	3,763	9	8	4,411	10	2
Rebuilding the Native Male Wards of the Hospital in front of the Monegar Choultry, on account of the present building being required to be demolished for the use of the Railway	2,849	9	5	3,728	2	7
Do. the Male Wards attached to the do. on account of do.	6,278	14	3	6,433	12	5
Forming a sunk fence or ditch work or terrace on the border of it, and constructing Masonry and retaining walls and Balustrades &c., on the South side of the principal buildings in the Government Park at Guindy	3,835	5	11	3,725	12	7
Judicial buildings.						
Three bills for making certain additions, alterations and improvements &c., to the Penetentiary	4,604	...	5	4,700	...	...
Military buildings.						
Raising the lower terrace and erecting two new buildings in the upper story on the Northern and Southern ends of the Barracks occupied by the 2nd Battalion Artillery at St. Thomas' Mount	6,226	5	8	6,074	14	...

173. The following statement shews the amount of bills passed, classified under their respective heads.

	New Works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Irrigation works	.....	...	...	914	3	4	914	3	4
Roads and bridges	14,168	2	8	10,601	...	4	24,769	3	...
Navigable canals	.....	...	...	975	6	4	975	6	4
Public buildings	17,559	15	10	17,227	8	...	34,787	7	10
Revenue do.	.....	...	...	114	7	2	114	7	2
Judicial do.	4,604	...	5	4,402	11	10	9,006	12	3
Ecclesiastical do.	186	2	5	7,529	3	7	7,715	6	...
Military do.	8,145	7	...	62,084	10	2	70,230	1	2
Marine do.	404	1	9	12	11	...	416	2	9

	New works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Miscellaneous Military	.....	...	...	.....	...	...	1,892	12	11
Do. General	.....	...	...	.....	...	...	9,840	2	3
Do. Judicial	.....	...	...	.....	...	...	305	7	...
Do. Ecclesiastical	.....	...	...	.....	...	...	742	9	6
Do. Revenue	.....	...	...	.....	...	...	5,493	4	3
Explanades and gross lands	.....	...	...	.....	...	...	1,775	14	...
Total...	45,067	14	1	1,03,861	3	9	1,68,979	3	9

174. Having thus described the bills audited and passed in the Central Office appertaining to works in the various districts of this Presidency, I shall now proceed to notice those relating to works executed in the Military Divisions beyond the frontier, which, until very lately belonged to the Madras Presidency. The Bills are on account of Military works and do not appear to require being specially described. The following Statement shews the heads of charge to which they appertain.

		New works.			Repairs.			Total.		
		Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Mysore	Public buildings	117	14	6	.....	...	...	117	14	6
	Ecclesiastical do.	481	9	3	719	11	4	1,201	4	7
	Military do.	6,005	11	11	15,283	11	9	21,289	7	8
	Miscellaneous General	.....	...	...	.....	...	...	17	7	10
		6,605	3	8	16,003	7	1	22,626	2	7
Secunderabad	Military buildings	36,438	3	3	13,573	9	10	50,011	13	1
Jaulnah	Ecclesiastical do.	.....	...	...	35	...	...	35	...	...
	Military do.	5,715	13	...	1,480	5	1	7,196	2	1
	Miscellaneous, Eccl	.....	...	...	.....	...	...	115	...	...
		5,715	13	...	1,523	5	1	7,346	2	1
Saugor	Roads and Bridges	.....	...	...	987	13	3	987	13	3
	Public Buildings	.....	...	...	226	5	9	226	5	9
	Ecclesiastical do.	2,612	15	10	.....	...	...	2,612	15	10
	Military do.	5,238	10	1	12,804	9	9	18,043	3	10
	Miscellaneous, Military	.....	...	...	.....	...	...	1,804	8	...
	do. Ecclesiastical	.....	...	...	.....	...	...	753	9	6
		7,851	9	11	14,018	12	9	24,428	8	2
Mergue	Military building	.....	...	...	32	10	11	32	10	11
Penang	do.	.....	...	...	28	8	...	28	8	...

175. The bills passed on account of Trunk roads amounts in the aggregate to Rupees 3,29,052-7-0, and are for new works Rupees 1,64,173-1-8, and repairs Rupees 1,64,879-5-4. The passed expenditure on each road is as follows :

	New works.			Repairs.			Total.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
Trunk road No. 1	3,783	14	11	97,777	8	9	1,01,561	7	8
,, ,, 2	.....	...	...	2,069	6	1	2,069	6	1
,, ,, 3	.....	...	...	443	14	...	443	14	...
,, ,, 4	.....	...	...	454	13	11	454	13	11
,, ,, 5	3,976	6	2	.....	...	...	3,976	6	2
,, ,, 6	60,046	2	10	24,605	14	4	84,652	1	2
,, ,, 7	14,153	15	2	.....	...	...	14,153	15	2
,, ,, 8	30,921	2	9	19,527	13	2	50,448	15	11
,, ,, 9	13,599	14	7	2,212	5	5	15,812	4	...
,, ,, 10	279	6	11	17,763	5	5	18,042	12	4
,, ,, 11	33,502	2	11	24	4	3	33,526	7	2
,, ,, 12	.....	...	...	.....	...	...	.....	...	...
,, ,, 13	3,909	15	5	.....	...	...	3,909	15	5
Total...	1,64,173	1	8	1,64,879	5	4	3,29,052	7	...

176. In conclusion, it may be desirable to explain the process of audit, and for this purpose I shall here transcribe paras. 6, 7, and 8 of a report already submitted to Government on the subject.

To Government 13th August 1856, No. 5753.

177. Every bill received in the office undergoes the following examination. 1st, it is compared with the Estimate and with the correspondence regarding the work to which it refers, so as to see that the orders of Government or that the existing rules in respect of such works have not been infringed; 2nd, the arithmetical processes are tested, after which final disposal takes place either by the sanction of the bill if within the authority of the Chief Engineer, or by submission for the orders of Government. In the case of Military bills, they also are carefully compared with the vouchers that usually accompany them.

178. It will thus be observed that bills are not commonly subjected to any normal professional scrutiny such as a comparison of the details of work in regard to either total quantities or rates performed, with those entered in the Estimates, in order to ascertain the variation that may have taken place from the sanctioned designs, or the causes of the excess, or defects of the amount entered in bills as compared with those of the Estimates, nor is any endeavour made to eliminate from the data thus afforded, the rates at which the various descriptions of work can be executed in different localities, so as gradually to form an improved system of prices. The Department is wholly unequal in strength to the amount of labor those operations would involve. It must nevertheless be admitted that this absence of scrupulocity in regard to a compulsorily close correspondence of execution with estimates, and this want of deduction of useful practical results, contrasts unfavorably in some technical particulars with the minute and detailed check exercised in the other Presidencies. Much however is to be ascribed both to the number and to the nature of the bills for hydraulic works, the entirely distinct and exceptional character of which in the Madras Presidency, it is apprehended, has not been sufficiently allowed for, whilst introducing as far as practicable a general principle of assimilation and a practice of uniformity throughout the whole Indian Empire.

179. The number of bills that remained on hand at the close of the year was 204, being about 7 per cent. of the total number received. They were however disposed of very soon after the commencement of the present official year. All the exceptions taken by this Department against bills have been explained or corrected, and thus no effective retrenchment has issued against any Officer.

180. A statement of the instruments issued for the use of the Department during the past official year will be found in the Appendix to this report. The information regarding tools and the quantities and numbers of stores is, I regret to say at present defective, but will be perfected in course of time.

181. A Circular was issued by me on the 27th September last, calling for certain information regarding the rates paid for labour, and prices paid for materials in the various Districts. Seventeen replies have been received up to this date, while the rest are overdue. As soon as the subject is complete, a report will be drawn up and laid before Government.

No. 6874.

182. I will conclude this report by soliciting the attention of Government to the exceptional position held by newly completed works in this Presidency as compared with Bengal and Bombay since the publication of the G. O. G. No. 41 of the 5th February 1856. Up to that time, the "completion certificates" required on the completion of any undertaking by the Regulations of the other Presidencies had on equivalent in the report, either of a Committee of inspection, or of the Officer Commanding, after a careful personal examination, in order to ascertain that the finished work corresponded in all respects with the plan and estimate sanctioned by Government. But all check whatever has now been withdrawn, and in the absence of all guarantee throughout the Madras Presidency for the due and full carrying into effect of a sanctioned estimate, an important link seems to be wanting for the completion of the independent vouchers for each separate disbursement, which has hitherto been deemed indispensable to the final audit of the bills of expenditure. As matters now stand, there is no machinery for bringing irregularities or defects to light; and for any thing that is now known can be proved to the contrary, important deviations from the authorized plans may have taken place, or certain provisions in the sanctioned estimates may have been left unsupplied without the final bills of expenditure being the less passed and audited. The G. O. G. which I have quoted fixes the personal responsibility on the Executive Officer, but there may have been more than one; and they, or he, may have left the country before any discovery of irregularity takes place.

No. 71. ORDER THEREON, No. 689; dated 16th April 1857.

In Extract Minutes Consultation of 17th June 1856, No. 989 Government communicated to the Chief Engineer the two sections of the Code for the newly organized Department Public Works which related to his functions and to those of his deputies. In para. 11 of those rules the Chief Engineer was directed to prepare, at the close of each official year, from the reports of the District Engineers, a full report of the operations of the Department during that year. It was further directed that the report should be submitted to Government in the month of June each year, and in addition to a general detail of the operations of the Department, it was to shew the results of improvements in irrigation works or communications; to give details of the bills passed; to shew the number and value of stores issued in the year under review, compared with those of former years; a report on the rates paid for labor was also called for, and an explanation of the progress made in determining fair rates for work on sound data in any cases or localities.

2. In obedience to the sections of the Code above quoted, Colonel Faber lays before Government his report for the official year 1855-56. The Code having only issued in June, it was of course impossible for the Chief Engineer to submit the report in that month; and he sets out by saying that the amount of information called for is at present far beyond the power of his office to supply. The causes of this inability are detailed to be, the lateness of the date of the requisition and the weakness until recently, of the Establishments of the District Engineers which rendered the timely preparation of the returns ordered, impossible; while assuring Government therefore of his endeavours to render future reports as complete as possible, the Chief Engineer shews that he has necessarily restricted the present report to such subjects as it has been customary to notice, including those on which information has been procurable from the records of his office. The Governor in Council considers the explanation of the deficiency to be satisfactory and the Government will now proceed to notice the principal points in the report; which is divided under the following heads.

Paras. 3, 126. 1st. A detail of the operations of the Department during the year in each of the Districts.

Paras. 127, 175. 2nd. A report on the bills passed.

Para. 177. 3rd. An explanation of the process of audit.

A statement of the Tools &c. issued, and a synoptical table of the total expenditure in the Department classified, form matter for two appendices to the report.

3. The statement appended to para. 4, shews the entire expenditure in the Department during the year, which amounted to nearly 60,00,000 of Rupees of which about 25 lacs were spent on works of irrigation, 22¾ on communications, and 12¼ on buildings. The greatest expenditure took place in Rajahmundry, Masulipatam, North Arcot, Tanjore, and Madras.

4. About many of the works, the partial execution and progress of which is detailed, correspondence has since taken place between Government and the Chief Engineer. No lengthened remarks will therefore be necessary respecting them.

Northern Trunk road from Madras to the Bengal frontier.

5. The progress of the great Northern Trunk road in Ganjam was satisfactory. The part from Chicacole to Itchapore was proceeded with, as well as that from Itchapore to the Bengal frontier. In Vizagapatam also the road progressed to a certain extent. Lieutenant Moberly however does not think that any substantial advantage has been derived from the expenditure, while he admits that though parts of the road are in "very bad order," and "seriously damaged" the traffic has increased to 165 bandies daily. Colonel Faber is inclined to adopt Lieutenant Moberly's opinion

rather than Major Birdwood's who considers the progress satisfactory. Government consider that it would be premature to form an unfavorable opinion of the road in its present very incomplete state, and are disposed to look upon the amount of cart traffic already upon the road as a very encouraging fact. The estimates for the repair of the road to Chittavulsa, it is observed, have been received and sanctioned. In Rajahmundry 10 miles only of the road were repaired at a cost of Rupees 4,500, while in Masulipatam and Guntoor nothing seems to have been done; in Nellore the road was completed from the Southern Boundary to about 5 miles North of Nellore itself. On the whole, the progress of Trunk road No. 6, in the year under report cannot be considered satisfactory, though in parts, much was done. The total expenditure upon it was about 85,000 Rupees.

Para 17.

6. Independent of the above road a considerable sum was spent in Ganjam principally on the roads from Kimedy to Poondy and from Chintada to Gaura.

7. In Vizagapatam the irrigation works performed were trifling, and with the exception of Trunk road No. 6, little work was done. The expenditure on the fourteen Police Cutcherries was only Rupees 1,954 out of a sanctioned estimate of Rupees 16,814 and no cause is alleged for the delay.

8. In Rajahmundry no less than 5,20,000 Rupees were expended on irrigation works of which 2,89,000 Rupees were on new works viz. the Ellore and Narsapore Canals and the Pullavella Canal; while 2,87,285 Rupees were expended on other irrigation works connected with the Godavery annicut project. The increase of depth of water on the Cocanada bar is most satisfactory; as the dredging operations continue and the scour is augmented by the extension of the Groynes the depth will doubtless still increase. Repairs to the large amount of Rupees 2,11,718 fill up the catalogue of works executed in Rajahmundry during the year.

Government notice with much gratification, Captain Rundall's remarks on the results of the Godavery annicut. The Extent[1] of land under irrigation by means of channels from the Godavery, the increased Exports[2] and Imports[3], 35 per cent. increase in the tonnage[4] of the ships that sailed from the District Ports shew beyond a doubt the beneficial influence of the work on the prosperity of the province. The loss which the state annually sustains for want of a scientific survey of the country, and particularly of the Northern Circars, has been fully admitted by the Government, and they anticipate that at no great distance of time this pressing want will be supplied.

	Official year 1854-55.	Official year 1855-56.
1	6,00,000 Acres	7,00,000 Acres
2	16,00,000 Rs.	19,00,000 Rs.
3	4,50,000 Rs.	5,50,000 Rs.
4	55,000 Tons	74,000 Tons

Para 30.

9. The Kistna annicut project is divided between Masulipatam and Guntoor, 1,38,795 Rupees were expended on it during the year in the former, and a considerable amount in the latter District. In para. 40 the benefits that have resulted from the annicut are described and the circumstances detailed shew that it is not from the increase of revenue as exhibited in the accounts that these benefits must be estimated, but rather from a comparison of what the state of the District would have been without the annicut, and what it is now.

Para. 31 Masulipatam.

10. In Masulipatam, under the head of communications, the great Military road from the Coast to Hyderabad was proceeded with from Ibrampatam to the Nizam's frontier, as well as the timber bridge over the Kistnah, materials for which were collected to the value of nearly a lac of Rupees.

In Guntoor Rupees 18,252 were expended on the Trunk road from Madras to Hyderabad. Of the three main works connected with the Kistnah annicut, the Nizampatam channel was extended to a distance of 21 miles from its head, the Vullabapooram channel was completed to the full extent of the estimate and is now open for navigation, and the Toongabudra channel was deepened at a total expenditure of Rupees 57,000 of which however only a small part was expended in the year under review. Complaints of inability to procure labor in Guntoor are referred to in para. 41 but the Government are glad to see that Colonel Faber admits that the difficulty is being gradually overcome.

Para. 38, Guntoor.

11. In Nellore the most important irrigation work in progress was the Pennar annicut. It appears that owing to the absence of proper means of distributing the water, but a limited use has as yet been made of the work, notwithstanding which however nearly 22 per cent. on the cost of the annicut itself has been re-imbursed in one year from the lands under one channel only, to say nothing of a large amount of land deprived of its means of irrigation by the great floods of 1852 which has been reclaimed by the agency of the annicut.

	Rupees.
Total cost of annicut	89,494
Increase from one channel alone	19,608

Under the head of communications the most important works executed are the Canal from Ameen Covil to Doogoorauzpatam, on which Rupees 10,869 were expended, and that portion of Trunk road No. 6 to which referrence has already been made in para. 5; the total expenditure on communications was Rs. 1,31,600. Colonel Faber represents that funds have failed when a continuance of energy and liberality would have brought forth the full benefit of the enormous outlay on roads rendered imperative by the famine of 1853. The Government however remark that those roads were undertaken for a specific and definite purpose, and that it is not reasonable to expect that the same lavish expenditure which was absolutely needed to feed a famishing population should be continued in a time of comparative prosperity and plenty. The works which have been commenced will in course of time be proceeded with but the Chief Engineer is as well aware as are the Government that expenditure has of late been limited under instructions from the Honorable Court in consequence of a temporary financial pressure; in the meanwhile it will be the duty of the Chief Engineer to take care that the most is made of the funds that are available. It would appear from what Colonel Faber says that but little is wanting "fully to develope the "resources and accommodate the vast trade of Nellore and the adjoining Districts"; he further says the full advantages attending the opening up of communications can be properly estimated only after the works are thoroughly completed, a remark which in the opinion of Government is as applicable to the Northern Trunk road as to the famine roads in Nellore, and yet of the former work, in its present unfinished state, the Chief Engineer, as observed above, already speaks despondingly.

12. In Cuddapah nothing was done to improve the irrigation, excepting Bellary this is the largest District in the Presidency and its wants can hardly have been limited to the repair of one single tank. The Government wish this circumstance to be brought to the special notice of the Engineer of the District. Very little, it is seen from the Progress Reports, has been done since; and as to previous operations 2,039 Rupees only for small works of irrigation, and 1,507 Rupees for two small Calingulahs appear in the Budget of 1854-55, and six works were sanctioned by Government in June and November 1855, of these 4 were very trifling.

The expenditure on roads on the contrary, was considerable, and the works were chiefly those commenced in 1854 to relieve the starving population. The Nundy Cunnama Ghaut is the principal communication between Kurnool and the Sub Collectorate of Cuddapah and on this work 48,398 Rupees were expended during the year. On the continuation of the above (the whole forming the main line of communication from Bellary to the Coast viâ the Vamilapad pass and Ongole) 23,415 Rupees were expended on 25 miles of road and 33,340 Rupees were laid out on the same road in Kurnool. From a marginal note to this part of the Chief Engineer's report the Government learn that the bridges over the Ralla and Boogga rivers separating the Cantonment from the town of Cuddapah, have been at last completed. These works were sanctioned in 1854, and although not of great size have taken three years to construct.

In Bellary the chief irrigation works were improvements and extensions of the Tungabadra Channels, which in common with all other works have now been transferred to the Engineer Department; from this measure Colonel Faber anticipates an increase of Revenue from 1¼ lacs to the extreme amount they are capable of yielding viz. 2,00,000 of Rupees; this increase of 75,000 Rupees will follow, he thinks, on the introduction of an improved system of management. The Government would however observe that these channels have always been under the professional Superintendence of the Civil Engineer of the District.

Much was done in Bellary to the Roads and nearly 1¾ Lacs of Rupees were spent. Of this sum 69,400 Rupees were laid out in constructing the minor masonry works on the famine roads. The Chief Engineer refers briefly to the project for a navigable irrigation Canal from

the Toombudra, proposed by Colonel Arther Cotton, on which that Officer is expected shortly to report. The Government will reserve an expression of their opinion until the plan is more fully before them.

In Kurnool 74,130 Rupees were expended on communication, the high road to Bellary being tunnelled as far as the borders of the District; the Nundy Cunnama line has already been noticed and the direct road from Kurnool to Ghooty was completed to the frontier. The progress of a large bridge over the Hindry river is described as exceedingly unsatisfactory, workmen were unobtainable and a sudden fresh in the river checked operations to a great extent.

In Chingleput progress was unsatisfactory principally owing to the scanty superintendence available. Work to the amount of 7,008 Rupees was done on the Corattoor annicut over the Cooum; the work was completed but the Chumbrambaukum tank received no benefit thereby as no water came down the river. The Corteliar dam, also designed to ensure an unfailing supply to that tank was slowly proceeded with. The bridge across the Adyar on the road from the Mount to Poonamallee, was nearly completed when it was destroyed by an unseasonable flood. Although the expenditure detailed in the body of Colonel Faber's Report amounts for Chingleput to only 61,200 Rupees (assuming that the expenditure on the Cumbum channel alluded to in para. 67 was made during the year which is not from the wording of the report quite clear) yet in the Tabular statements, in para. 4, 3,16,651 Rupees is given as the expenditure, the Bills for the year, again, amounting to only 17,514 Rupees. The expenditure on the East Coast Canal and Trunk roads Nos. 1 and 8 makes up the difference, but the expenditure on these should have been specially alluded to among the works of the District.

Vide, Synoptical table of classified Expenditure.

16. In North Arcot much was done under the energetic Superintendence of Captain Johnston. The Palar annicut was three fourths completed, the large channels much advanced, and the Poiney and Cheyar drains pushed forward; these improvements together with minor works of irrigation cost Rupees 2,61,368 while the principal item of expenditure under the head of roads was the bridge across the Palar on the Vellore and Chittor road which was completed to the springing of the arches. On other works, the Railroad is said to have caused a difficulty of procuring labor—as the Railroad in the vicinity of these works will soon be completed, the difficulty will probably cease, but if it be found that the Railroad or any other cause has permanently enhanced the value of labor, rates must be proportionately increased. Want of adequate Superintendence was also felt in this District.

17. In South Arcot nearly the whole of the Estimate amounting to Rupees 18,000 for the restoration of the Vellar annicut and bridge, destroyed in the hurricane of 1853 was expended under the Superintendence of Lieutenant Clay and Surveyor Downes; a large Calingulah was built for the Permal tank, while three bridges were built and much metalling and other work done on Trunk roads 8 and 9; other roads also were energetically proceeded with and some progress was made in the Pennar and Coleroon junction Canal works, but operations were "put a stop to by an accident to a bund constructed to resist the action of the Paravenar." No remark need now be made on the Cuddalore Harbour works, which Major Lawford, has lately inspected and on which he will doubtless report.

17. Paras. 85-92 detail the operations in the Tanjore District.

The Coleroon annicut is described as having been extended and raised, and a bridge constructed over it during the year. The bridge it is to be observed was not completed, but only the part of it reaching from the South bank of the river to the Island which intersects the annicut. The portion, north of the Island is still incomplete and in progress.

The Talnayar swamp drainage operations are further erroneously described as the drainage in and round a tank. This work is now believed to be complete, and measures should be immediately taken by the Collector to value and assess the land, which the people have shewn every disposition to cultivate. The attention of the Board of Revenue will be requested to the subject. Thirty-two other villages were drained between the Muliar and Adappar at an expense of Rupees 23,762-12. The Chief Engineer has been unfortunate in his description of what was done in Tanjore, for the work on the Manakondanar is not properly described as its extension to Kodiakurray. The work was rather the re-opening of that channel, the whole bed of which is supposed to have been

obliterated by the gradual rising of the level of the salt swamp, so that (a corresponding change having taken place in the minor drainage channels) the whole drainage of the surrounding country was obstructed. Colonel Faber does not mention how far the new cut is navigable.

The progress of the large bridge at Anikarun chuttrum was proceeded with by the Sub Collector Mr. Cadell and Mr. Assistant Civil Engineer Horgan. Government defer recording any opinion on the operations here until the completion of the work.

Three of the Bridges on the road from Papanasam to Satiamungalum were completed, and all the minor drainage Tunnels.

The progress of the canal from the Coleroon to Tranquebar is most creditable to Mr. Cadell's zeal and energy. Government will await its completion before reviewing the operations generally.

18. In Trichinopoly, the Wycondan, Lalgoody and Poonairy channels were proceeded with, and considerable sums spent on the Cauvery and Coleroon embankments and main channels. The information obtainable from Lieutenant Ryves' report on the communications was, Colonel Faber states, exceedingly meagre. The expenditure was Rupees 51,187 and the principal work was a bridge of 11 arches on Trunk road No. 8.

19. In Madura no new works of irrigation of any importance were undertaken. The progress in road making likewise, compared with the area of the district was slow.

20. In the latter part of para. 101, Lieutenant Scott appears to have attributed the increase of the Revenue in Madura and Tinnevelly to the ordinary fluctuations of the market prices of grain caused by the Government revenue being payable in kind instead of in money as in other districts, rather than to any improvement which has taken place in public works.

The Governor in Council must remark that this opinion is the result of very imperfect enquiry and it is remarkable that Colonel Faber who was formerly Civil Engineer in Madura and Tinnevelly, should have transferred Lieutenant Scott's opinion to his report without any expression of dissent; the Government do not expect that the Engineers should be very accurately acquainted with the details of revenue systems, but when the pecuniary results of public works are discussed, it is of great importance that they should not be attributed to wholly erroneous causes. Had the District Engineer referred to the Collector, or investigated the question upon which he offers an opinion he would have found that in Tinnevelly the settlement is partly Ryotwar or field assessed, and partly Oloongoo nearly similar to that of the Southern Talooks of the delta of Tanjore. In Madura on the other hand, the settlement is altogether Ryotwar and in neither District is the revenue paid in kind. If Lieutenant Scott had said that in the Oloongoo Talooks of Tinnevelly the Government demand had been increased by the high current price of grain, and that in those Talooks alone the rise of the revenue was attributable to the peculiarity of the settlement, the conclusion drawn might have been admissible; but in the Ryotwar Talooks of Tinnevelly and in Madura, the commutation price is fixed and invariable, so that a rise of revenue can only originate from extension of cultivation brought about by increased opportunities of irrigation, a favorable nature of season or a reduction of assessment.

21. In the latter part of para. 96, Colonel Faber speaks of Rupees 2,033 having been spent "in widening, raising and constructing sluices in the Pervanai Tank" a mistake probably for Pereanay the principal annicut on the Vygy river which supplies the Vadakaray tank.

Some little progress was made in the Military road from Madras to Palamcottah and Travancore which Colonel Faber describes as a southern continuation of Trunk road No. 6; (No. 8 is meant) but this nomenclature would tend to mislead those without local knowledge as to the

importance of the road; though it is believed that there are even now parts of the road nearly impassable in the wet weather. Regarding the project for supplying the town of Madura with water, referred to in para. 99, the orders of Government were passed in Extract Minutes Consultation of the 4th February last, No. 257.

22. The same remarks apply to Tinnevelly as were made in para. 19 with reference to Madura, except that the repairs and improvements to irrigation works in the former District were on a somewhat larger scale, and the road operations were relieved from obscurity by the satisfactory progress on the Cotton roads under Captain and Lieutenant Paxton and Mr. Harington. The circumstances under which the works are carried on, on these Cotton roads are peculiar. The laboring class of Natives, are a set of men entirely removed from want, without at the same time being wealthy. They are all either Pariahs or Pallar; some are attached to the Mirasdars, cultivating their land for a share of the produce, while others hold land on their own account. Of the latter class chiefly are those in the neighbourhood of the Cotton roads. They are extremely independent, having each their small plot of ground on the produce of which they live; in fact a flourishing class of peasant proprietors who are perfectly contented with the subsistence they derive from their land and are not tempted by any reasonable prospect of gain to bestow their labor in any greater quantity than is required for the tilling of their own land. Captain Horsley, who from his great experience must be considered as the best authority, distinctly says that they are perfectly satisfied with what they can raise from their own fields or earn from their neighbours, so that it is difficult to procure daily labor for any public work. In imitation of the practice in Ceylon where by law every one must work on the roads himself or find a substitute for a certain number of days in the year, the labor being paid for at the market rates for the time being, the Collector of Tinnevelly issued a proclamation in 1853, that every one must work himself or find a substitute for 15 days in the year. These arrangements were however put a stop to by the orders of the Board of Revenue, Department Public Works,—the works suffered a total check, and shortly afterwards the Corps of Pioneers was organized. Colonel Faber now states, that at the end of the year under review, it was in contemplation to discharge these men owing to the estimates being wholly insufficient to bear the increasing charge on account of their pay. Under these circumstances, the Right Honorable the Governor in Council is of opinion that it is much to the credit of the Executive Officers, Messrs. Paxton and Harington that they have made such progress as they have.

23. In Coimbatore the expenditure on new works was small, that on roads and bridges amounted to Rupees 34,313, which seems to have been laid out in local improvements on the Neilgherries, on the main Coimbatore and Madura road, and the Bhowany bridge at Sattiamungalum.

24. In Salem the great demand for labour on the Railway Works prevented much being done in the irrigation and road Departments. The total expenditure was only Rs. 77,193.

25. Canara and Malabar being non-irrigated districts nearly the whole of the Engineer's attention was turned to the roads. In Canara the Ghauts were greatly improved, Rupees 20,000 were laid out on the formation of new District Roads and much was done in the way of repair of the existing ones. Want of superintendence prevented the execution of several sanctioned works.

In Malabar the total expenditure amounted to Rupees 86,061. But little progress was made on any individual work except the 1st class road from Nundoor to Firokhabad on the Baypoor river on which Rupees 13,100 were expended. The Inland water communication north and south of the Venjely lake was also improved to some extent.

Colonel Faber notices in para. 121 Captain Ouchterlony's remarks on the improvements of which Malabar is capable as regards, 1st. Irrigation works. 2nd. Water communications. 3rd. Land Communications. There are no doubt sites in the "lower steppes of the Coondahs" where water could be stored so as to be serviceable for irrigation and navigation, and Government will be prepared to consider any scheme that Captain Ouchterlony may submit of this nature, or for any new road. It is observed that one road to Wynad is now under consideration, namely that viâ the Tambaracherry pass.

26. The total expenditure in Madras was 4,63,391. It does not appear from the details given by the Chief Engineer in the body of his report, how this large sum was made up though the synoptical table supplies the information. The bridge behind Ashton's shop and the road from the Master Attendant's office to the Railway Terminus and the improvement to the Gun Powder Manufactory and Lying-in-Hospital, are works worthy of note. The municipal improvements were, it is presumed paid for out of the Assessment Fund.

27. No mention is here needed on the upper Godavery operations as Lieutenant Haig's separate report is before Government.

28. On the East Coast Canal progress has been satisfactory. 1,41,714 Rupees have been expended principally in the excavations from Madras to Sadras, and the erection of three bridges over the Canal. To the north of Madras 24 miles were widened and improved; and a tidal lock constructed.

29. The following Statement shews at one view the expenditure in each District, and the amount of Bills audited during the last nine months of the year in the Chief Engineer's Office. The aggregate number of Bills passed was 3,052.

District.	Total expenditure.	Bills passed.	Amount for which Bills remain to be passed.
	Rs.	Rs. A. P.	
Ganjam.	1,97,608	6,026 8 6	
Vizagapatam	90,247	40,353 13 3	
Rajahmundry	5,87,737	4,65,994 12 0	
Masulipatam	4,65,943	3,29,725 6 4	
Guntoor	2,00,327	20,548 4 2	
Nellore	2,21,908	96,598 14 7	
Cuddapah	1,47,403	35,784 10 2	
Bellary	2,84,726	1,75,835 14 8	This column cannot be filled up in the Government office, as there is no information forthcoming as to the amount of Bills outstanding at the commencement of the year under report.
Kurnool	86,897	18,321 8 5	
Chingleput	3,16,651	17,544 5 11	
North Arcot	4,18,038	63,149 13 1	
South Arcot	2,80,929	1,14,293 13 11	
Tanjore	5,54,728	4,67,900 6 10	
Trichinopoly	2,43,757	44,187 14 1	
Madura	80,942	85,361 10 1	
Tinnevelly	1,48,280	65,057 9 8	
Coimbatore	2,67,253	28,851 15 2	
Salem	77,193	40,056 12 8	
Canara	1,60,627	1,61,881 10 9	
Malabar	86,061	29,448 8 2	
Madras	4,63,391	1,68,979 3 9	
Uupper Godavery	1,30,396	None.	
East Coast Canal	1,41,714	None.	
Mysore	26,579	22,626 2 7	
Hydrabad	3,91,235	50,011 13 1	
Saugor	43,778	24,428 8 2	
Jaulnah	15,607	7,346 2 1	
Mergui and Penang	,,	61 2 11	
Trunk Roads	,,	3,29,052 7 4	
Total.....	59,88,241	29,09,429 12 10	

The number of Bills remaining on hand at the close of the year was 204, being about 7 per cent. of the total number received; this balance was disposed of very soon after the commencement of the present official year, all retrenchments having been explained or corrected.

It will be convenient, if the Chief Engineer will in his future annual Reports, when detailing the audit operations, commence with a short Statement presenting at one view the abstract information called for in para. 10 of the audit Rules in the Manual, (this information is now partly wanting and partly only to be gleaned from different paragraphs of the Report); as for instance.

I.

1.	2.	3.	Remarks.
1	Total number of Bills remaining unaudited at the beginning of the year	500	Specify by what date these old Bills were disposed of in the new year, or what number of them remain to be finally audited at the date of the despatch of the Report.
2	Number received during the year.	5,000	
3	Number disposed of during the year.	3,900	
4	Number out standing at the close of the year.	1,600	

A second Statement should be given in the following form to shew the retrenchments made and the results.

II.

Nature of Bill.	Nature of objection on audit.	Reply of District Engineer.	Decision of Chief Engineer.

and at the end of No. II. an abstract as follows.

Abstract.

Total I. No. of objections made on audit...	...	...	20
Total II. of these sustained...	...	...	15
III. No. Explained...	...	...	5

30. The classified Synopsis submitted by Colonel Faber of the expenditure in all the branches of Public Works contains a great deal of useful information, but the whole has been already printed in the Progress Report in 1855-56, and is bound up in Selection No. 38.

31. The information called for respecting Tools and Stores, is not yet furnished, and the Government consequently defer remarking upon this branch of the subject, till the receipt of the current year's report. They will await the promised separate report upon the rates of wages &c., but must hope that it will not be long delayed.

32. In the last para. of his Report, Colonel Faber descants upon the absence of check which apparently exists, upon the executive Officers with regard to the due and full carrying into effect of a sanctioned estimate, in consequence of the completion certificate system hitherto obtaining having been abolished by G .O. G. No. 41 of 5th February 1856. But that order only sanctioned a transfer, not as the Chief Engineer seems to argue a removal of responsibility. The Officer or Engineer employed on the work is the party on whom the responsibility now rests and who must certify at his own peril that no important deviations have been made from the authorized plans, and that no provisions in the sanctioned estimates have been left unsupplied. The contingency alluded to of an Officer's evading responsibility by quitting the country before the discovery of an irregularity, may always be guarded against by causing him to give security that he will be responsible for any deficiency that may be discovered. In cases of any important works, it will of course be the duty of the Chief Engineer to guard against any such consequences as he now apprehends by appointing a special supervisor.

(Signed) H. FORBES,

Acting Secretary to Government.

Synopsis of expenditure on Public Works in the Madras Public Service for 1855/56

Districts		Public: Roads & communications	Public: General	Public: Political	Public: Total	Revenue: General	Revenue: Irrigation	Revenue: Judicial	Educational	Marine	Military	Total	Total of both new works and Repairs
Ganjam	New works	119503	"	"	119503	"	6583	.				126086	197608
	Repairs	8663	"	"	8663	2869	55906	"		113	3971	71522	
										"	"	79645	
Vizagapatam	New works	73069	"	"	73069	1195	"	5381		"	1603	10602	90247
	Repairs	"	"	"	"	1080	7840	.		25457	"	383464	
Rajahmundry	New works	15765	7854	"	23609	15	334175	208		385	"	204273	587737
	Repairs	18274	423	"	18697	239	184883	69			"	371759	
Masulipatam	New works	120118	"	"	120118	"	251523	118		"	6957	94184	465943
	Repairs	4558	347	"	4905	567	81603	152		"	"	151461	
Guntoor	New works	23686	"	"	23686	"	126238	1537		"	"	48866	200327
	Repairs	623	156	"	779	"	48087	"		"	"	159564	
Nellore	New works	130946	482	"	131428	1604	22429	4103		"	38	62344	221908
	Repairs	653	621	"	1274	"	60649	183		"	"	120555	
Cuddapah	New works	112506	"	"	112506	"	9049	"		"	272	26048	147403
	Repairs	3100	149	"	3249	649	22466	212		"	33350	188280	
Bellary	New works	132643	622	"	133265	1678	14737	5250		"	"	96446	284726
	Repairs	39715	355	"	40070	44	56098	234		"	"	76994	
Kurnool	New works	66403	5419	"	71822	2527	2645	"		"	"	9903	86897
	Repairs	7731	"	"	7731	21	2151	"		4129	"	114430	
Canara	New works	93676	18	"	93694	947	1904	13756		2456	"	46197	160627
	Repairs	32787	7535	"	40322	2849	"	570		"	10430	200797	
Chingleput	New works	154446	"	"	154446	"	35716	205		"	"	115854	316651
	Repairs	74277	"	"	74277	470	41084	23		"	18	319979	
North Arcot	New works	95711	"	"	95711	886	223080	284		"	"	98059	418038
	Repairs	58305	333	"	58638	317	38228	816		11456	"	175825	
South Arcot	New works	138685	"	"	138685	"	25685	"		"	"	105104	280929
	Repairs	16614	1503	"	18117	659	85702	626		"	2784	25715	
Salem	New works	10445	"	"	10445	"	12136	350		"	"	51478	77193
	Repairs	4683	827	"	5510	1196	44474	299		"	"	88261	
Trichinopoly	New works	26597	315	"	26912	"	61349	"		"	1713	155496	243757
	Repairs	20347	167	"	20514	265	122931	32		1655	"	335662	
Tanjore	New works	169446	313	"	169759	2096	154859	7293		2836	"	219066	554728
	Repairs	31722	2277	"	33999	1620	180281	330		"	120077	218255	
Coimbatore	New works	81902	3107	"	85009	4287	6930	1952		"	"	48998	267263
	Repairs	23634	4109	"	27743	332	20207	716					

Public

Districts.		Roads & Communications	General	Political	Total	Revenue General	Revenue Irrigation	Judicial
Malabar	New works	39,971	586	"	40,557	300	24,938	1,908
	Repairs	7,501	771	"	8,272	791	1,793	148
Madura	New works	30,325	"	"	30,325	2,981	1,497	"
	Repairs	7,439	850	"	8,289	626	37,133	81
Tinnevelly	New works	53,388	"	"	53,388	879	11,232	2,223
	Repairs	4,089	569	"	4,658	972	69,577	"
Upper Godavery	New works	1,30,396	"	"	1,30,396	"	"	"
	Repairs	"	"	"	"	"	"	"
Madras	New works	41,838	1,35,151	5,414	1,82,403	3,714	"	20,352
	Repairs	30,845	32,723	"	63,568	1,423	378	4,929
Mysore	New works	"	"	"	"	"	"	"
	Repairs	"	"	"	"	"	"	"
Hyderabad	New works	3,211	"	"	3,211	"	"	"
	Repairs	"	"	"	"	"	"	"
Saugor	New works	"	"	"	"	"	"	"
	Repairs	"	"	"	"	"	"	"
Saulnah	New works	"	"	"	"	"	"	"
	Repairs	"	"	"	"	"	"	"
Total of New Works		1,84,666	1,53,867	5,414	2,03,947	22,809	1,32,5705	64,920
Total of Repairs		3,95,560	53,715	"	4,49,275	16,988	11,71,731	9,420
Total of both New Works & Repairs		22,60,226	2,07,582	5,414	2,73,222	39,797	24,97,436	74,340

Establishment for the whole Department

Central Office of P.W.
Fort Saint George
January 1857.

Ecclesiastical	Educational	Marine	Military	Total	Total of both new works and Repairs
15	"	2,921	4,418	7,5057	86,061
"	"	"	"	11,004	
"	"	"	"	34,803	80,942
"	"	"	10	46,139	
3,977	"	72	940	72,711	1,48,280
"	"	"	362	75,569	
"	"	"	"	1,30,396	1,30,396
"	"	"	"	"	
681	"	404	63,187	2,70,441	4,63,391
4,515	"	2,045	1,16,092	1,92,950	
"	"	"	5,060	5,060	26,579
"	"	"	21,519	21,519	
5,557	"	"	3,79,919	3,88,687	3,91,235.
"	"	"	2,548	2,548	
1,656	"	"	30,256	31,912	43,778
"	"	"	11,866	11,866	
194	"	"	14,361	14,555	15,607
30	"	"	1022	1,052	
12,080	"	46,093	6,64,800	41,60354	
4,765	"	7,835	1,67,873	18,27,887	
16,845	"	53,928	8,32,673	59,88,241.	59,88,241
					7,68,419
Grand Total					67,56,660

Colonel
Chief Engineer

Tabular view of expenditure on Public Works in the Madras Presidency during 1855/56 in more detailed classification of objects.—"Public." Roads and Communications

Districts	Trunk or Main Roads	Secondary Roads	Ferries and sundry Bridges	Dâks Bungalows &c.	Navigable Canals and Rivers	Repairs	Total.
Ganjam	50,937	68,566	"	"	"	8,663	128,166
Vizagapatam	11,936	38,535	22,598	"	"	"	73,069
Rajahmundry	"	4,896	1,910	"	8,949	18,274	34,029
Masulipatam	"	20,855	94,826	"	4,437	4,558	124,676
Guntoor	18,252	2,337	3,097	"	"	623	24,309
Nellore	95,414	15,866	4,379	134	15,153	653	131,599
Cuddapah	29,076	74,407	9,023	"	"	3,100	115,606
Bellary	15,239	93,856	18,028	5,520	"	39,715	172,358
Kurnool	"	54,043	12,360	"	"	7,731	74,134
Canara	5,881	62,983	22,482	2,289	41	32,787	126,463
Chingleput	"	24,431	2,440	"	120,575	74,277	228,723
North Arcot	38,235	36,347	24,879	250	"	58,305	154,016
South Arcot	13,642	94,199	24,726	"	6,118	16,614	155,299
Salem	"	7,055	2,540	850	"	4,683	15,128
Trichinopoly	10,985	13,612	2,070	"	"	20,347	46,944
Tanjore	1,308	84,120	59,563	552	23,903	31,722	201,168
Coimbatore	3,329	69,478	8,036	1,059	"	23,634	105,536
Malabar	5,794	27,590	5,890	697	"	7,501	47,472
Madura	"	24,181	6,144	"	"	7,439	37,764
Tinnevelly	"	30,915	22,473	"	"	4,089	57,477
Upper Godavery	"	"	"	"	130,396	"	130,396
Madras	"	21,519	2,319	"	"	30,845	72,683
Mysore	"	"	"	"	"	"	"
Hyderabad	"	"	3,211	"	"	"	3,211
Salgar	"	"	"	"	"	"	"
Jaulnah	"	"	"	"	"	"	"
Total	300,028	869,791	373,924	11,351	309,572	395,560	2260,226

"Public." General.

Districts	Post Offices	Hospitals and Dispensaries	City Improvements	Sea Defences	Miscellaneous	Repairs	Total
Ganjam	"	"	"	"	"	"	"
Vizagapatam	"	"	"	"	"	"	"
Rajahmundry	"	2930	"	2540	2384	423	8277
Masulipatam	"	"	"	"	"	347	347
Guntoor	"	"	"	"	"	156	156
Nellore	167	"	"	"	315	621	1103
Cuddapah	"	"	"	"	"	149	149
Bellary	"	"	"	"	622	355	977
Kurnool	"	395	4628	"	396	"	6419
Canara	4	"	"	"	14	7535	7553
Chingleput	"	"	"	"	"	"	"
North Arcot	"	"	"	"	"	333	333
South Arcot	"	"	"	"	"	1503	1503
Salem	"	"	"	"	"	827	827
Trichinopoly	"	"	"	"	315	167	482
Tanjore	"	"	"	"	313	2277	2590
Coimbatore	"	"	"	"	3107	4109	7216
Malabar	"	79	"	"	507	771	1357
Madura	"	"	"	"	"	850	850
Tinnevelly	"	"	"	"	"	569	569
Madras	"	15927	63434	47877	7913	32723	167874
Mysore	"	"	"	"	"	"	"
Hyderabad	"	"	"	"	"	"	"
Saugor	"	"	"	"	"	"	"
Saulnah	"	"	"	"	"	"	"
Total	171	19331	68062	50417	15886	53715	207582

"Public." Political.

47

Districts	Govt Houses and Offices	Miscellaneous	Repairs	Total
Ganjam	"	"	"	"
Vizagapatam	"	"	"	"
Rajahmundry	"	"	"	"
Masulipatam	"	"	"	"
Guntoor	"	"	"	"
Nellore	"	"	"	"
Cuddapah	"	"	"	"
Bellary	"	"	"	"
Kurnool	"	"	"	"
Canara	"	"	"	"
Chingleput	"	"	"	"
North Arcot	"	"	"	"
South Arcot	"	"	"	"
Salem	"	"	"	"
Trichinopoly	"	"	"	"
Tanjore	"	"	"	"
Coimbatore	"	"	"	"
Malabar	"	"	"	"
Madura	"	"	"	"
Tinnevelly	"	"	"	"
Madras	4367	1047	"	5414
Mysore	"	"	"	"
Hyderabad	"	"	"	"
Saugor	"	"	"	"
Saulnah	"	"	"	"
Total	4367	1047	"	5414

"Revenue General"

Districts.	Custom and Toll Houses	Salt and Opium	Other Revenue Buildings	Repairs	Total
Ganjam	"	"	"	2869	2869
Vizagapatam	1195	"	"	1080	2275
Rajahmundry	15	"	"	239	254
Masulipatam	"	"	"	567	567
Guntoor	"	"	"	"	"
Nellore	"	514	1090	"	1604
Cuddapah	"	"	"	649	649
Bellary	"	"	1678	44	1722
Kurnool	"	"	2527	21	2548
Canara	487	214	246	2849	3796
Chingleput	"	"	"	470	470
North Arcot	"	"	886	317	1203
South Arcot	"	"	"	659	659
Salem	"	"	"	1195	1195
Trichinopoly	"	"	"	265	265
Tanjore	2096	"	"	1620	3716
Coimbatore	"	"	4287	332	4619
Malabar	"	"	300	791	1091
Madura	"	335	2646	626	3607
Tinnevelly	"	"	879	972	1851
Madras	1273	2141	"	1423	4837
Mysore	"	"	"	"	"
Hyderabad	"	"	"	"	"
Saugor	"	"	"	"	"
Saulnah	"	"	"	"	"
Total	5066	3204	14589	16988	39797

"Revenue Irrigation."

Districts	Construction	Repairs	Total
Ganjam	6583	55906	62489
Vizagapatam	"	7840	7840
Rajahmundry	334175	184883	519058
Masulipatam	251523	81603	333126
Guntoor	126238	48087	174325
Nellore	22429	60849	83278
Cuddapah	8049	22466	30515
Bellary	14737	56098	70835
Kurnool	2645	2151	4796
Canara	1904	"	1904
Chingleput	35716	41084	76800
North Arcot	223080	38288	261368
South Arcot	25685	85702	111387
Salem	12136	44474	56610
Trichinopoly	61349	132931	194280
Tanjore	154859	180281	335140
Coimbatore	6930	20207	27137
Malabar	24938	1793	26731
Madura	1497	37133	38630
Tinnevelly	11232	69577	80809
Madras	"	378	378
Mysore	"	"	"
Hyderabad	"	"	"
Saugor	"	"	"
Saulnah	"	"	"
Total	1325705	1171731	2497436

"Judicial"

Districts	Police and Gaols	Court Houses &c.	Repairs	Total
Ganjam	"	"	"	"
Vizagapatam	5,381	"	"	5,381
Rajahmundry	158	50	69	277
Masulipatam	"	118	152	270
Guntoor	"	1,537	"	1,537
Nellore	2,307	1,796	183	4,286
Cuddapah	"	"	212	212
Bellary	"	5,250	234	5,484
Kurnool	"	"	"	
Canara	7,976	5,780	570	14,326
Chingleput	205	"	23	228
North Arcot	284	"	816	1,100
South Arcot	"	"	626	626
Salem	"	350	299	649
Trichinopoly	"	"	32	32
Tanjore	"	7293	330	7,623
Coimbatore	"	1,952	716	2,668
Malabar	"	1908	148	2056
Madura	"	"	81	81
Tinnevelly	"	2,223	"	2,223
Madras	18826	1,526	4,929	25,281
Mysore	"	"	"	
Hyderabad	"	"	"	
Saugor	"	"	"	
Saulnah	"	"	"	
Total	35137	29783	9,420	74,340

"Ecclesiastical"

Districts	Churches	Burying Ground	Repairs	Total
Ganjam	"	"	"	
Vizagapatam	"	"	179	179
Rajahmundry	"	"	"	"
Masulipatam	"	"	"	"
Guntoor	"	"	"	"
Nellore	"	"	"	"
Cuddapah	"	"	"	"
Bellary	"	"	"	"
Kurnool	"	"	"	"
Canara	"	"	"	"
Chingleput	"	"	"	"
North Arcot	"	"	"	"
South Arcot	"	"	"	"
Salem	"	"	"	"
Trichinopoly	"	"	41	41
Tanjore	"	"	"	"
Coimbatore	"	"	"	"
Malabar	"	15	"	15
Madura	"	"	"	"
Tinnevelly	3977	"	"	3977
Madras	681	"	4515	5196
Mysore	"	"	"	"
Hyderabad	"	5557	"	5557
Saugor	1656	"	"	1656
Saulnah	194	"	30	224
Total	6508	5,572	4,765	16,845

"Educational"

Districts	Construction of Schools and Colleges	Repairs	Total
Ganjam	"	"	"
Vizagapatam	"	"	"
Rajahmundry	"	"	"
Masulipatam	"	"	"
Guntoor	"	"	"
Nellore	"	"	"
Cuddapah	"	"	"
Bellary	"	"	"
Kurnool	"	"	"
Canara	"	"	"
Chingleput	"	"	"
North Arcot	"	"	"
South Arcot	"	"	"
Salem	"	"	"
Trichinopoly	"	"	"
Tanjore	"	"	"
Coimbatore	"	"	"
Malabar	"	"	"
Madura	"	"	"
Tinnevelly	"	"	"
Madras	"	"	"
Mysore	"	"	"
Hyderabad	"	"	"
Saugor	"	"	"
Saulnah	"	"	"
Total	"	"	"

"Marine"

Districts	Construc-tions	Repairs	Total.
Ganjam	"	113	113
Vizagapatam	"	"	
Rajahmundry	25457	385	25842
Masulipatam	"	"	
Guntoor	"	"	
Nellore	"	"	
Cuddapah	"	"	
Bellary	"	"	
Kurnool	"	"	
Canara	4129	2456	6585
Chingleput	"	"	
North Arcot	"	"	
South Arcot	11455	"	11455
Salem	"	"	
Trichinopoly	"	"	
Tanjore	1655	2836	4491
Coimbatore	"	"	
Malabar	2921	"	2921
Madura	"	"	
Tinnevelly	72	"	72
Madras	404	2045	2449
Mysore	"	"	
Hyderabad	"	"	
Saugor	"	"	
Saulnah	"	"	
Total	46093	7835	53928

"Military"

Districts	Defensive works and Ordnance for Buildings	Recom. modation for Troops	Stud.t Commis.sariat Buildings	Cantonment Roads and Clearance	Miscel. Buildings	Repairs	Total
Ganjam	"	"	"	"	"	3971	3,971
Vizagapatam	"	"	"	"	"	1503	1,503
Rajahmundry	"	"	"	"	"	"	"
Masulipatam	"	"	"	"	"	6957	6957
Guntoor	"	"	"	"	"	"	"
Nellore	"	"	"	"	"	38	38
Cuddapah	"	"	"	"	"	272	272
Bellary	2064	31,286	"	"	"	"	33,350
Kurnool	"	"	"	"	"	"	"
Canara	"	"	"	"	"	"	"
Chingleput	"	"	"	"	10,430	"	10,430
North Arcot	"	"	"	"	18	"	18
South Arcot	"	"	"	"	"	"	"
Salem	2259	"	"	"	525	"	2,784
Trichinopoly	"	"	"	"	"	1713	1,713
Tanjore	"	"	"	"	"	"	"
Coimbatore	"	12,077	"	"	"	"	12,077
Malabar	"	2386	"	"	2032	"	4418
Madura	"	"	"	"	"	10	10
Tinnevelly	"	"	"	"	940	362	1302
Madras	3965	49,898	1,101	"	8223	116,092	179,279
Mysore	"	3880	1,180	"	"	21,519	26,579
Hyderabad	987	366,298	"	"	12,634	2,548	382,467
Saugor	8921	16,142	"	"	5193	1,866	42,122
Saulnah	"	10,429	88	"	3,844	1,022	15,383
Total	18196	630,396	2,369	"	43,839	167,873	832,673

Abstract of classified expenditure from the foregoing Tables

5

	Rupees	Rupees	Rupees
"Public"			
Roads and Communications			
Trunk and Main Roads	300028		
Secondary	869,791		
Ferries and Sundry Bridges	373,924		
Dâk Bungalows	11,351		
Navigable Canals and Rivers	309,572		
Repairs	395,560		
		2260,226	
"General"			
Post Offices	171		
Hospitals &c.a	19,331		
City Improvements	68,062		
Sea Defences	50,417		
Miscellaneous	15,886		
Repairs	53,715		
		207,582	
"Political"			
Government Houses & Offices	4,367		
Miscellaneous	1,047		
Repairs	"		
		5,414	
"Judicial"			
Police and Gaols	35,137		
Court Houses	29,783		
Repairs	9,420		
		74,340	
"Ecclesiastical"			
Churches	6,508		
Burial Grounds	5,572		
Repairs	4,765		
		16,845	
Carried forward			2564407

	Rupees	Rupees	Rupees
Brought forward		2564407	
"Educational"			
Schools and Colleges			
Repairs	"		
"Revenue General"			
Custom and Toll Houses	5,066		
Salt and Opium	3,204		
Other Revenue Buildings	14,539		
Repairs	16988		
		39797	
"Revenue Irrigation"			
Canals Canks, & Embankments	13,25,705		
Repairs	11,71,731		
		2497436	
"Marine"			
Marine Works	46093		
Repairs	7835		
		53928	
Total Civil Works			5,55,568
"Military"			
Defensive Works and Ordnance Buildings	18196		
Accommodation for Troops	666396		
Commissariat Buildings	2369		
Cantonment formation &c.	"		
Miscellaneous	43839		
Repairs	16,873		
		832673	
for Military Works			832.673
Total of both Civil & Military Works			5980241
Establishment for the whole Department			76419
Grand Total expenditure			67,56,660

Central Office of P. W.
Fort Saint George
January 1857.

Col. Fisher Colonel
Chief Engineer

Enclosure in a letter
From the Chief Engineer
To The Secy to Govt Bo'y.
Date 26 January/57
Rec.

R. 97 ...
A. 155/57

Synopsis of Explorations
in Khoki in the Bairaj Pg.
classified under the different
Branches of the Public Service
for 1855/56.

Memorandum.

Instruments supplied to the undermentioned Districts during the year 1855/56.

Divisions or Districts	Plane tables	Levels	Sq. & Cases	Circumferentors	Chs. & Compasses	Long Chains	Chains 100 feet	Chains 66 feet	4 ft. Sq. Rods	Rods, Brass bound, Surveying	2 ft. Chains	Pocket Compasses	2 ft. Rules	Levelling Staves	Boxes	Sheet covers	Cases	Camel Kits	Setting Scales	Protractors	Quadrants	Cartographs	Barometers	Mountain Barometers	Aneroids	Mathematical Instruments, Spherical Trigonometry, Rules	Parallel Rules	Pentagraphs	Optical Squares	Protractors	Pocket Sextants	Drawing Pens	Plane Scales	Elbow Rules
Ganjam	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Vizagapatam	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Godavery	2	"	"	"	"	"	"	"	4	"	"	"	"	5	"	"	18	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Kistnah	"	2	"	"	"	2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Nellore	"	4	"	2	1	4	4	"	4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Cuddapah	"	1	"	1	"	4	10	3	4	5	"	"	"	4	3	"	5	"	"	"	"	"	"	"	"	"	"	5	"	"	"	"	"	"	"	"
Bellary	"	"	"	2	"	2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Kurnool	"	1	"	"	"	2	3	"	"	1	"	"	2	"	"	"	1	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	"
Chingleput	"	1	"	"	"	2	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
North Arcot	"	4	"	"	3	6	"	"	4	"	"	"	"	4	1	1	9	6	18	1	1	"	"	"	1	1	1	5	1	"	"	"	"	"	"
South Arcot	"	"	"	"	5	2	8	"	1	1	7	"	"	1	"	"	2	35	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"
Tanjore	"	1	"	"	1	4	1	"	1	1	"	"	"	1	"	"	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Trichinopoly	"	2	"	"	"	6	2	"	"	2	3	"	"	3	"	"	2	6	"	2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Madura	"	1	"	"	1	1	1	"	3	1	"	"	2	1	2	"	1	6	18	6	"	"	1	"	"	1	"	"	"	"	"	"	"	"	"	"
Tinnevelly	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Coimbatore	"	"	"	"	"	2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Salem	2	"	1	3	6	3	"	7	2	1	"	"	1	"	"	2	33	"	28	2	"	"	"	"	1	"	"	"	"	"	"	"	"	"	"
Canara	"	1	"	"	2	1	"	1	1	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Malabar	"	"	"	1	"	2	1	1	2	1	1	"	"	1	"	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Eastern Coast Canal	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
South Arcot Survey	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Mhow	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Upper Godavery	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
Total	2	20	"	6	15	47	35	4	31	15	12	.	4	11	15	1	18	107	24	52	5	1	.	1	.	3	1	1	10	1	1	.	.	.	.

Central Office of S. W.
Fort Saint George
26th January. 1857.

Arthur Cotton Colonel
Chief Engineer.

Enclosure in a Letter
From
The Chief Engineer
To
The Secretary to Government
Public Works Deptt

Dated 26th } January 1857.
Recd }

No 9755.

P.W. 155/57

Memo of
Instruments supplied to the
undermentioned Districts during
the year 1855/56.

P.W.D.

No 689

Extract from the Minutes of Consultation
Under date the 16th ~~March~~ April 1857.

Read the following letter from the
Chief Engineer

(Here Enter 26 Jan 57 No 9755)

In Ex. Min. Con. of
17th June 1856 No 989 Govt. commu-
-nicated to the Chief Engineer
the two Sections of the Code
for the newly organized
Deptt Pub. Works which
related to his functions and
to those of his Deputies

In

In Para 11 of those rules the Chief Engineer was directed to prepare, at the close of each Official year, from the Reports of the Distt. Engineers, a full report of the operations of the Departt. during that year. The report was further directed to be submitted to Govt. in the Month of June each year. and in addition to a general detail of the operations of the Departt, it was to shew the results of improvements in irrigation works or communications;

cations; to give details of the Bills passed; to shew the number & value of stores issued in the year under review, compared with the amount of former years; a report on the rates paid for labor was also called for, and an explanation of the progress made in determining fair rates for work on sound data in any cases or localities.

2 In obedience to the Sections of the Code above quoted Col. Fisher lays before Govt. his report for the Official year 1855/56. The Code having only issued

issued in June; it would of course impossible for the Chief Engineer to submit the report in that Month; and he sets out by saying that the amount of information called for is at present far beyond the power of his Office to supply. The causes of this inability are detailed to be

~~First~~ the lateness of date of the requisition & ~~Secondly~~ ~~the~~ ~~restrictions~~ until recently, of the Establishments of the Distt Engineers which rendered the timely preparation

preparation of the returns ordered, impossible, while deploring Govt: therefore of his endeavours to render future reports as complete as possible; the Chief Engineer shews that he has necessarily restricted the present report to such subjects as it has been customary to notice, including those on which information has been procurable from the records of his Office. The Governor in Council considers the explanation of the deficiency to be satisfactory and the Govt: will now proceed to notice the principal

points

points in the report, which is divided under the following heads—

1st. A detail of the operations of the Deptt during the year in each of the Districts— Paras 3 - 126.

2nd. A report on the Bills passed— Paras 127 - 175.

3rd. An explanation of the process of audit—

4th. A Statement of the Tools &c issued—and a synoptical table of the total expenditure in the Deptt classified from month to month for the Official year.

3. The Statements appended to Brad[ley] Aliens the entire Expenditure in the Deptt during the year which amounted to

to nearly 60,00,00 Rupees of which about 25 lakhs were spent on works of irrigation, 22 3/4 on Communication, and 12 1/4 on Buildings. The greatest expenditure took place in Rajahmundry, Masulipatam, North Arcot, Tanjore, and Madras—

4 About ninety of the Works, the partial Execution and progress of which is detailed correspondence has since taken place between Govt and the Chief Engineer. No lengthened remarks will therefore be necessary respecting them—

them-

5. The progress of the great Northern Trunk Road in Ganjam was satisfactory. The part from Chicacole to Itchapore was proceeded with as well as that from Itchapore to the Bengal Frontier. In Vizagapatam also the road progressed to a certain extent. South Moberly however does not think that any substantial advantage has been derived from the expenditure, while he adds ~~in the face of an admission~~ that though parts of the road are in "very bad order" and "seriously damaged" the traffic has increased to 165 Bandies daily. Colonel Tiber is inclined to adopt Captain Moberly's opinion rather than Major Birdwood's who considers the progress satisfactory. Government consider that it would be premature to form an unfavorable opinion of the road in its present very incomplete state, and are inclined to look upon the amount of Cart traffic already upon the road as a very encouraging fact. The estimates for the repair of this road to Bhittanulah, it is observed have been received and sanctioned. In Rajahmundry 10 Miles of the road only were repaired at a cost of Rupees 4500, while

Northern Trunk Road from Madras & the Bengal Frontier

Para 17

in

in Masulipatam and Guntoor nothing seems to have been done; in Nellore the road was completed from the Southern Boundary to about 5 Miles North of Nellore itself. On the whole the progress of Trunk road N.o 6 in the year under report cannot be considered satisfactory — though in parts much was done, the total expenditure upon it was about 85000 Rupees.

6 Independent of the above road a considerable sum was spent in Ganjam principally on the roads from Russelly to Poondy and Chintada to Gauras.

7 In Vizagapatam the irigation works performed were trifling, and with the exception of Trunk road N.o 6 little

little work was done. The expenditure on the fourteen Police Cutcheries was only Rupees 1954 out of a sanctioned estimate of Rupees 16,814 and no cause is alleged for the delay.

8 In Rajahmundry no less than 520000 Rupees were expended on irigation works of which 289,000 Rupees were on new works. Viz the Ellore and Narsapore Canals and the Pullavella Canal, while 287,285 Rupees were expended on other irigation works connected with the Godavery annicut project. The increased depth of water on the Cocanada bar is most satisfactory as the dredging operations continue and the scour is augmented by the extension of

of the Groynes the depth will doubtless still increase. Repairs to the large amount of Rupees 2,41,748 fell upon the contingencies of works executed in Rajahmundry during the year.

Government notice with much gratification Captain Rundall's remarks on the results of the Godavery Anicut. The extent of land under irrigation by means of Channels from the Godavery, the increased Exports and Imports, 35 per cent increase in the tonnage of the ships that sailed from the District Ports shew beyond a doubt the beneficial influence of the work on the prosperity of the province. The loss which the State annually sustains for want of

1. from 600,000 previous year
2. Rs 16 Lacs previous year
3. 4½ Lacs previous year
4. Tons 55,000.

to 700,000 acres. Year under notice Rs 19 Lacs
Year under notice 5½ Lacs
Year under notice Tons 74,000.

Para 30.

of a scientific survey of the country, and particularly of the Northern Circars, has been fully admitted by the Government, and they anticipate that at no great distance of time this pressing want will be supplied.

Para 31. Masulipatam. 9 The Kistna Anicut project is divided between Masulipatam and Guntoor. 138,795 Rupees were expended on it during the year in the former, and a considerable amount in the latter District. In Para 10 the benefits that have resulted from the anicut are described and the circumstances detailed shew that it is not from the increase of revenue as exhibited in the accounts that these benefits must be estimated, but rather from a comparison of what

what the state of the District would have been without the anniente and what it is now.

10..... In Masulipatam, under the head of communications, the great Military road from the Coast to Hyderabad was proceeded with from Ibrampatam to the Nizam's frontier, as well as a timber bridge over the Kistnah, materials for which were collected to the value of nearly a lakh of Rupees.

In Guntoor Rupees 18252 were expended on the Trunk road from Madras to Hyderabad. Of the three main works connected with the Kistnah anniente, the Nizampatam channel was extended to a distance of 21 miles from its head, the Nullabavooram channel was completed to the full extent of the estimate and is now open for navigation, and

Para 38, Guntoor

and the Tongabudra Channel was deepened at a total expenditure of Rupees 57,000 of which however only a small part was expended in the year under review.

Complaints of inability to procure labor in Guntoor are referred to in Para 41 but the Government are glad to see that Colonel Faber admits that the difficulty is being gradually overcome.

11 In Nellore the most important irrigation work in progress was the Pennar anniente. It appears that owing to the absence of proper means of distributing the water, but a limited use has as yet been made of the work, notwithstanding which however nearly 22 per cent on the cost

Total Cost of Anniente — Rs 89,494.
Increase from one Channel alone — 19,608.

cost of the Amount itself has
been reimbursed in one year
from the lands under one
channel only to say nothing
of a large amount of land
deprived of its means of
irrigation by the great
floods of 1852 which has
been reclaimed by the agency
of the Amount.

Under the head
of Communication the
most important works ex-
ecuted are the canal from
Uneen Coil to Doogoorauzpatam,
on which Rupees 10869 were
expended, and that portion
of trunk road N°6 to which
reference has already been made
in para 5; the total ex-
penditure on communication
was Rupees 13,600. Colonel
Faber represents that funds
have failed when a continuance

of

of energy and liberality
would have brought forth
the full benefit of the
enormous outlay on roads
rendered imperative by the
famine of 1833. The Govern-
ment however remark that
those roads were undertaken
for a specific and definite
purpose, and that it is
not reasonable to expect
that the same lavish
expenditure which was
absolutely needed to feed
a famishing population
should be continued
in a time of comparative
prosperity and plenty.
The works which have
been commenced will
in course of time be
proceeded with but the
Chief Engineer is as well
aware as are the Govt

that

cost ~~expenditure has of~~
be ~~later been limited under~~
instructions from the ~~H~~
Honorable Court in con-
sequence of a temporary
financial pressure, on
that accountwhile it will
be the duty of the Chief
Engineer to take care
that that most is made
of the funds that are
available. It would
appear from what
Colonel Faber says
that but little is
wanting — "fully to develope
"the resources and ac-
"commodate the vast
"trade of Nellore" and
"the adjoining Districts"
he further says, the
full advantages
attending

attending the opening
up of communications
can be properly estimated
only after the works
are thoroughly completed,
a remark which in the
opinion of Government
is as applicable to
the Northern trunk Road
as to the famine roads
in Nellore, and yet of
the former work, in its
present

w cost
w been present unfinished state,
a fro
10 cha the Chief Engineer, as
th of
th des observed above already
th irri
fu floo spoke despondingly
to bea
us of 12 Sir Cuddapah
fi
u of ricetting was done
m
ee to improve the irrigation
18
un excepting Bellary, this
o is the largest District
ex
of in the Presidency and
h its wants can hardly have
re been limited to the
repair of one single
tank

tanks. The Government
with this circumstance
to be brought to the no
tice of the Members of the Le
gislature of the District.
Very little of it is seen from
the Progress Reports that
have been done since and as
to previous operations 2039
Rupees only for small
works of irrigation and
1547 Rupees for five small
Calingulahs appear in
the Budget of 1854/55,
and expected to have been
sanctioned by Government
in June and November
1855 of these 4 were very
trifling
The expenditure
on roads on the contrary,
was considerable, and
the works were chiefly
those

Kurnool. From a marginal note to this part of the Chief Engineer's report the Government learn that the bridges over the Halla and Boggu rivers separating the Cuddapah from the Kurnool districts have at last completed. These works were commenced in 1854, and although not of great size have taken three years to construct.

In Bellary the chief irrigation works were improvements and extensions of the Tungabadra Channels, which in common with all other works have now been transferred to

Kurnool commenced in 1854 to relieve the starving population. The Sandy Emigrant Road is the principal communication between Kurnool and the Sub Collectorate of Cuddapah. On this work 48,398 Rupees were expended during the year. On this continuation of the above road (the middle forming the main line of communication from Bellary to the Coast via Kurnool and Cuddapah) 23,415 Rupees were expended on 25 Miles of Road and 33,340 Rupees were laid out on the same road in

to the Engineer Depart.
From this measure Colr
Faber anticipates an
increase of Revenue from
1/4 lacs to the extreme
amount they are capa-
ble of yielding Vizt —
200000 of Rs — the increase
of 75000 Rs will follow,
he thinks, on the intro-
duction of an improved
system of management —
Much was done in
Bellary to the Roads and
nearly 1 3/4 Lakhs of Rs
were spent. Of this sum
69,400 Rs were laid out in
constructing the minor
masonry works on the
Trunk roads. The Chief
Engineer refers briefly to
the project for a navga-
ble irrigation Canal
from the Toombidra,
proposed by Colonel
Arthur Cotton, on which
that

Mr. Goldsmid concurred
in the
Madras Govt. have
also recommended
the adoption of
the Chief Engineer's
suggestion
for the Cuddapah
District.

that Officer is expected
shortly to report. The Govt.
will reserve our expression
of their opinion until the
plan is more fully before them.

In Kurnool 7 Lacs 30
Rs were expended on com-
munication; the high road
to Bellary being finished,
as far as the borders of the
District, the Sandy Com-
mand line has already
been protected and the
direct road from Kurnool
to Cuddapah was completed
to the frontier. The pro-
gress of a large bridge
over the Hindry river
is described as exceedingly
unsatisfactory. Workmen
were not obtainable and a
sudden freshet in the River
checked operations to a
great extent.

In Cuddapah Coll.
progress

progress was unsatisfactory
principally owing to the
scanty superintendence
available. Work to the
amount of 7008 Rupees
was done on the Coraltar
Channel over the Coomy
the work was comp-
leted but the Chann-
el remains silted and has
received no benefit
but thereby as
the water cannot
flow down the River.
The Cortelliar Chan-
nel also designed to
secure an unfail-
ing supply to the
Tank was slowly
proceeded

proceeded with. The
Bridge across the Aiyar
on the road from the
Mount to Poonamallee,
was nearly completed
when it was
last destroyed by an unu-
sual flood. Altho'
the Expenditure detailed
in the body of Coll. Fisher's
report amounts for
Chingleput only to 61,200
Rupees (assuming that
the Expenditure on the
Cumbum Channel alluded
to in Paras 67 was
made during the year
which is not from the
wording of the report
quite clear) yet in the
Tabular

Tabular statements
in Vol. 4. 316,651 Rupees
is given as the Expenditure
the Bills for the years
again, amounting to
only 17,544 Rupees.
The Expenditure on
the East Coast Canal
and Pulnk roads Nos 1
and 8 ~~[illegible]~~ make up
the difference, but the
Expenditure on these
should have been specif-
=ically alluded to among
the works of the District.

16. The North Arcot
much was done un-
=der the Energetic super-
=intendence of Capt. Johnston.

The

vid. Synoptical table of
classified Expenditure.

The Palar Anicut
was three fourths com-
=pleted, and the large
Channels much advanced,
and the
Poiney and the year
down pushed forward;
these improvements
together with minor
works of irrigation
cost Rupees 2,61,368-
while the principal
item of Expenditure un-
=der the head of Roads
was the Bridge across
the Palar on the Vellore
and Chittoor road
which was completed
to the Springings of the
Arches. On other Works,
the

the Railroad is said to have caused a difficulty of procuring labor- As the ~~parts of the~~ Railroad in the vicinity of these works will soon be completed, the difficulty will probably cease- but if it be found that the Railroad or any other cause hereafter enhanced the value of labor, the rates must be increased ~~in due course~~ ~~passing proportion~~- Want of adequate superintendence was also felt in this District-

In

17. In South Arcot nearly the whole of the ~~amounting to~~ Estimate Rupees 48,000- for the restoration of the Vellar Aniecut and Bridge, destroyed in the hurricane of 1853- was expended under the superintendence of Lieut Clay and Surveyor Downes, a large Culvert which was built for the Pennal Tank while three Bridges were built and much masonry and other work done on Tank roads 8 and 9, other roads also were energetically proceeded with

with and some progress was made in the Pennair and Coleroon junction Canal works, but operations were put a stop to by an accident to a bund con-structed to resist the action of the Pennair-

No remark need now be made on the Cuddalore Harbour Works. Lieut Major Sanford, it may be observed, it was on his late inspection and on which he made his report ~~upon them~~ in Para 85-92 detail the operations in the Tanjore District-

The

The Coleroon Anicut is described as having been extended and raised, and a Bridge constructed over it during the year. The Bridge it is to be observed was not completed, but only the part of it reaching from the South bank of the river to the Island which intersects the Anicut. The portion South of the Island is still incomplete and in progress.

The Talmaiyan swamp drainage operations are further erroneously described as the drainage in and round a Tank. This work is now

now believed to be complete, and measures should be immediately taken by the Collector to value and assess the lands, which the people have shown every disposition to cultivate. The attention of the Board of Revenue will be requested to the subject. Thirty two other Villages were drained between the Muliar and Adiyar at an expence of Rupees 28/62-12. The Chief Engineer has been unfortunate in his description of what was done in Tanjore for the

~~to speak of the option~~ work on ~~Level of~~ the Manali is not prudently described as ~~by extention~~ Rondavier to Kodi-yakarray. The work ~~should further be~~ on rather ~~clearing bed~~ the reopening of that Channel, the old bed of which is supposed to have been obliterated by the gradual rising of the level of the salt-swamp, so that the corresponding change having taken place in the minor drainage Channels, the whole drainage of the surrounding country

country was obstructed.

Colonel Taber does not mention how far the new cut is navigable.

The progress of the large Bridge at Anikaram Chattrum was proceeded with by the Sub Collector Mr Cudell and Mr Apsiatum Civil Engineer Morgan. Government defer recording any opinion on the operations here until the completion of the work

work.

Three of the Bridges on the road from Papanasam to Satia-mangalam were completed, and all the minor drainage Tunnels.

The progress of the Canal from the Coleroon to Tranquebar is most creditable to Mr. Cudell's zeal and energy. Govern-ment will await its completion before reviewing the operations generally. R. S. In Tri-chinopoly, the Vycondam Calingoody and

and Ponany Channels
pieces proceeded with
and considerable
sums spent on the
Canvey and Coleroon
embankments and
main channels.
The information
obtainable from
Lieutenant Ryves
report on the
communications
near Colonel Taber
states exceedingly
meagre. The
expenditure was
Rupees ~~5.187~~ 5,187 and
the principal work
was a Bridge
of 11 arches
on Trunk Road No 8.

19. In Madura
no new works of irriga-
tion of any importance
were undertaken. The
progress in road mak-
ing likewise, compared
with the area of the dis-
trict was slow.

20. In the latter
part of Para 101. Lieut.
Scott appears to have
attributed the increase
of the Revenue in
Madura and Tinne-
velly to the ordinary
fluctuations of the market
prices of grain caused
by the Government reve-
nue being payable in
kind instead of in
money as in other
districts,

districts, Parker Rao to any improvements which has taken place in public works.

The Governor in Council must remark that this opinion is the result of very imperfect enquiry and it is remarkable that Colonel Faber who was formerly Civil Engineer in Madura and Tinnevelly should have transferred Lieutenant Scott's opinion to his report without any expression of dissent. The Government do not expect that the Engineers should be very accurately acquainted with the details of revenue systems, but when the pecuniary results of public works are discussed, it is of great importance that they should not be attributed to wholly erroneous causes and the Chief Engineer investigated the question upon which he offers an opinion he would have found that in Tinnevelly the settlement is partly Ryotwar or field assessed, and partly Olungoo nearly similar to that of the Southern Talooks of the district of Tanjore. In Madura on the other hand, the settlement is altogether Ryotwar and in neither District is the Revenue paid in Kind. If

Referred to the Collector. &c

Lieut

Lieut Scott had said that in the Olungoo Talooks of Tinnevelly the Govt demand had been increased by the Right current price of grain, and that in those Talooks alone the rise of the revenue was attributable to the peculiarity of the settlement the conclusion drawn might have been admissible, but in the Poyotwar Talooks of Tinnevelly and in Madura, the commutation price is fixed and invariable, so that a rise of Revenue can only originate from extension of cultivation

cultivation brought about by increased opportunities of irrigation, a favorable nature of season or a reduction of assessment

21. In the latter part of Para 96 Colonel Faber speaks of Rs 2,033 having been spent "in "widening, raising and "constructing Sluices in "the Peruani Tank, a mistake probably for Peraney the principal Anicut on the Vygy River which supplies the Vendakaray Tank.

Some little progress was made in the

the Military Road from Madras to Palamcottah and Travancore which Colonel Taber describes as a Southern continuation of Trunk Roads No 6; No 8 is meant, but his nomenclature would tend to mislead those without local knowledge as to the importance of the roads, though it is believed however that there are even now parts of the roads nearly impassable in the wet weather.

Regarding the projects for supplying the town of Madura with water, referred to in para 99,

the

the orders of Government were passed in Extract Min. Con. of the 4th February last No 257.

22. The same remarks apply to Tinnevelly as were made in Para 19 with reference to Madura, except that the repairs and improvements to irrigation works in the former District were on a somewhat larger scale, and the road operations were relieved from obscurity by the satisfactory progress on the Cotton Roads under Captains and Lieutenant Dalton and Mr Harington.

The circumstances under

which

which the Works are carried on on these Cotton Roads are peculiar. The laboring Class of Natives, are a set of men entirely removed from want, without at the same time being wealthy. They are all either Pariahs or Pallier; some are attached to the Mirasdars, cultivating their land for a share of the produce while others hold land on their own account. Of the latter class chiefly are those in the neighbourhood of the Cotton roads. They are extremely independent, having each

each their small plot of ground on the produce of which they live — in fact a flourishing class of peasant proprietors who are perfectly contented with the subsistence they derive from their land and are not tempted by any reasonable prospect of gain to bestow their labour in any greater quantity than is required for the tilling of their own land. Captain Moriseley, who from his great experience must be considered as

as the best autho=
=rity distinctly says
that they are perfect=
=ly satisfied with
what they can raise
from their own fields
or earn from their
neighbours, So that
it is difficult
to procure daily
labour for any
public work. In
imitation of the
practice in Ceylon
where by law every
one must work
on the roads him=
=self or find a sub=
=stitute

=stitute for a certain
number of days in
the year, the labour
being paid for at
the Market rates for
the time being, the
Collector of Tinnevelly
issued a proclama=
=tion in 1853 that
every one must work
himself or find a
substitute for 15 days
in the year. These
arrangements were
however put a stop
to by the orders of
the Board of Revenue,
department=

department Public
Works, the works suf-
=fered a total check,
and shortly after-
=wards the Corps of
Pioneers was or-
=ganized. Colonel
Faber now states,
that at the end of
the year under-
review, it was in
contemplation to
discharge these
men owing to the
estimates being
wholly insufficient
to bear the increas-
=ing charge on account
of their pay. Under
these circumstances
the

the Right Honour-
=able the Governor-
=e Council is of
opinion that it is
much to the credit of
the Executive officers
Messrs. Paxton and
Harrington that they
have made such pro-
=gress as they have
23. In Coimbatore the
expenditure on new work
was small, that on Roads
and bridges amounted to
Rupees 34,343 which seems
to have been laid out in
local improvements on the
Neilgherries, on the Nadia
Coimbatore and Palladum
road, and the Bairamy
bridge at Sadyamungalum.
24. In Salem the great
demand for labour
on the Railway Works pre-
=vented

-ceeded much being
done on the irrigation
or 1st road departments
the total expenditure
was only 77,193-
25. In Canara and Malabar
the only river irrigated dis-
tricts nearly the whole
of the Engineers attention
was turned to the Roads.
In Canara the Ghauts were
greatly improved, Rs 20,000 were
laid out on the formation of
new district Roads & much was
done in the way of repair of the
existing roads. Want of supervision
alone prevented the execution
of several sanctioned works.
In Malabar the total
expenditure amounted
to Rupees 86,061.
But little progress
was made on
any individual
work.

work except the 1st class
road from Nandoor to
Srirakabad on the
Beypoor River on which
Rupees 13,400 were expended.
The Inland water com-
-munication North and
South of the Verjely lake
was also improved to
some extent.

Colonel Taber notices
in Para 121 Captain
Ouchterlony's remarks on
the improvements of
which Malabar is ca-
pable as regards 1st Irri-
-gation works. 2d Water
Communications & 3d Land &
There are no doubt others
in the lower deserts
of the Carnatic where
works

water could be stored
so as to be serviceable
for irrigation and
navigation, and Govt
will be prepared to
consider any scheme
that Captain Cruickshank
may submit of this
nature, or for any new
road. It is observed
that one road to Wy-
-nad is now under
consideration, that via
the Tambaracherry pass.

26. The total expenditure
in Madras was 463391.
It does not appear from
the details given by
the Chief Engineer in the body of this report.
this large sum was
Thoughthe typhotical table supplies the information.
made up. The

Bridges

Bridges between Ashtons
shops the road from the
Master Attendants
Office to the Railway
Terminus, & the improve-
ments & the Gunpowder Magazine
the balance spent and
to any and lying in hospital, arrears,
about the commissariat
with the Post
office. The Municipal
improvements were, if
is presumed paid for
out of the assessment
Fund.

27. No mention is
here needed on the
usual Godowny operations
as Lieutenant Haig
separate report is before
Government.

28 On the East Coast
Canal progress has been
Satisfactory, 14 1/4 Miles
have

have been expended princi-
=pally in the Expedition
=tions from Madras to
Salem; and the Erection
of three Bridges over
the
to the North of
Madras 24 Miles were
widened and improved; and
a tidal Lock construct
=ed &c.

29. The Pub. Works
in the Mily Stations
in Mysore, Hyderabad,
Sangor, and Saugor
have been transferred
to the Govt. of India.
And it is unnecessary
to remarke upon
them here.

The

29 The following
Statement shews at one
view the Expenditure
in each District, and
the amount of Bills
audited during the last
nine months of the year
in the Chief Engineer's
Office. The aggregate
number of Bills passed
was 3,052.

Districts	Total Expenditure	Bills passed.	Amount for which Bills remain to be passed
Ganjam	197,608	6,026-8-6	This Column cannot be filled up in the Office, as there is no information
Vizagapatam	90,217	40,358-13-2	
Rajahmundry	587,137	4,659 94-12-4	
Masulipatam	465,943	329,725-6-4	
Guntur	200,327	205 48-6-2	
Nellore	221,908	96,598-14-7	
Cuddapah	164,403	55784-10-2	
Bellary	284,726	175,835-14-8	

to hand in the Amount
of Bills outstanding
at the Commence-
ment of the
year under
Report.

Kurnool	80,897	1,832-8-5
Chingleput	3,16,651	17,544-5-11
North Arcot	4,18,038	6314-9-13-1
South Arcot	2,80,929	11,429-3-13-11
Tanjore	5,54,728	46,900-6-10
Trichinopoly	2,43,757	44,187-14-1
Madura	80,942	8,536-10-1
Tinnevelly	1,48,280	6,505-9-8
Combatore	2,07,253	28,851-15-2
Salem	77,193	4,005-12-8
Canara	1,60,627	16,881-10-9
Malabar	80,061	2,948-8-2
Madras	4,63,391	1,689-9-3-9
Upper Godavery	1,30,396	None
East Coast Canal	1,41,714	None
Mysore	20,579	2,262-2-7
Hyderabad	3,91,235	5,011-13-1
Sangar	43,778	2,442-8-2
Sauloor	15,607	734-6-2
Merqui & Penang	"	61-2-11
Spunk Roads	"	3,290-5-7-4
Total	5,988,241	2,09,429-12-10

The

The number of Bills remaining on hand at the close of the year was 204 being about 7 per Cent of the total number received, — which balance was disposed of very soon after the commencement of the present Official year, all Retrenchments having been Explained or corrected. It will be convenient, if the Chief Engineer will in his future annual Reports, when detailing the audit operations, commence with a short Statement pre-senting

senting at one view the abstract information called for in Para 10 of the audit Rules in the Manual. This information is now partly wanting and partly only to be gleaned from different Paragraphs of the report; as for instance

I

1	2	3	Remarks
1	Total number of Bills remaining unaudited at the beginning of the year	500.	Specify by what date these old Bills were disposed of in the new year. & what number of them remain to be finally audited at the date of the despatch of the Report.
2	Number received during the year	5,000.	
3	Number disposed of during the year	3,900.	
4	Number outstanding at the close of the year	1,600.	

A

A second Statement should be given in the following form to shew the retrenchments made and the results.

II

Nature of Bill	Nature of objection on audit.	Reply of District Engineer.	Decision of Chief Engineer.

and at the end of No. II an abstract as follows.

Abstract.

Total No. of objections made on audit. 20.

Total II. of these

Not yet framed. 15.

Explained. 5.

III. 31. The classified synopsis submitted by Col. Taber of the Expenditure in all the branches of Pub. Works contains a great deal of useful information, but ~~in a very convenient form and~~ the numbers

the whole has been already ~~issued~~ ~~number of Copies will be~~ printed in the Progress Report ~~struck off for distribution~~ in 1855-56, and is bound ~~and submitted to the~~ up in Selection R: 38 ~~Govt. of India~~.

32. The information called for respecting Tools and Stores, is not yet furnished, and the Govt. consequently defer remarking upon this branch of the subject, till the receipt of the current yearly report. They will await the promised separate report upon the rates of Wages &c., but it will not be long delayed.

33. In the last Para of his Report, Col. Fisher descends upon the absence of check which apparently exists upon the Executive Officers with regard to the due and full carrying into effect of a sanctioned Estimate, in consequence of the completion Certificate System hitherto obtaining having been abolished by G. O. G. No. 41 of 5th Feby/56. but that Order only sanctioned a transfer and not as the Chief Engineer seems to argue a removal of responsibility. The Officer or Engineer employed on the work is the party on whom the responsibility now rests and who must certify as to his

his own peril that no important deviations have been made from the authorized plans, and that no provisions in the sanctioned Estimates have been left unsupplied. The contingency alluded to of an officer's rendering himself responsible by ~~an Officer's~~ quitting the Country before the discovery of an irregularity, may always be guarded against by causing him to give a receipt ~~for a declaration to the effect~~ that he will be responsible for any deficiency that may be discovered. In cases of any important works, it will of course be the duty of the Chief Engineer to guard against any such consequences as he may apprehend by appointing a special Supervisor.—

R. S.
R. A.
March 9.

9 Copies to the Chief Engr.
Dec. 17

Copy in a Letter to England
dy. 17th July 1858. No 6.

R

Public Works 1857 Depart.
Dto to Govt 21st April
No 689.

E.

Extract Mins of Govt.
Dy 16th April 57.

Exct from the Rep: of the Chief Engr &c
Dy 19th June 57 C. No 1742 inclo: 30

Passing orders regarding
observations on the General &c
Report on the operations of the
Public Works Department
during the past official year
1855-56

No 70 & 71.