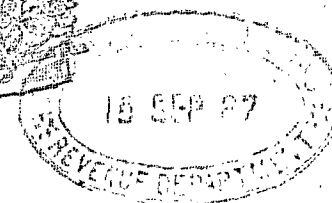
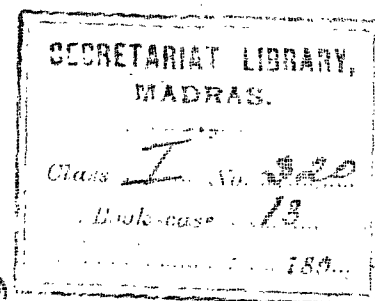
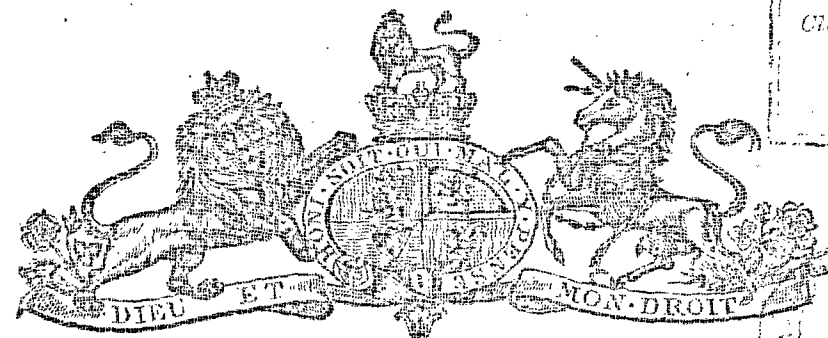


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ADMINISTRATION REPORT
OF THE
PUBLIC WORKS DEPARTMENT
(GENERAL BUILDING AND ROADS BRANCH)
MADRAS PRESIDENCY
FOR THE YEAR
1886-87

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MADRAS:

PRINTED BY R. HILL, AT THE GOVERNMENT PRESS.

1887.

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ADMINISTRATION REPORT
OF THE
PUBLIC WORKS DEPARTMENT, MADRAS,
(GENERAL, BUILDINGS AND ROADS BRANCH,) FOR THE YEAR 1886-87.

I.—GENERAL REMARKS.

1. The administration of the department devolved, during the year under review, on Colonel J. O. Hasted, R.E., in succession to Colonel Shaw-Stewart, R.E., who resigned his position as Chief Engineer and Secretary to Government on the 8th September 1886.

The following is an extract from the Proceedings of Government recorded on the occasion:—

“In accepting Colonel Shaw-Stewart’s resignation of his appointment as Chief Engineer and Secretary to Government, Public Works Department, from the date named, His Excellency the Governor in Council desires to place on record his very high appreciation of the service which that able and zealous officer has rendered to the State during the long period of his connection with the Public Works Department.”

In succession to Colonel Hasted, Lieutenant-Colonel J. Pennycook, R.E., officiated as Chief Engineer for Irrigation and Joint Secretary to Government from the 8th September 1886 to the 23rd March 1887, when Colonel H. R. Mead, R.E., returned from furlough and assumed the permanent appointment, with the rank of Chief Engineer, II Class.

2. *Grants and Expenditure.*—The original grant under *Imperial, Military Works*, was Rs. 6,44,400, the revised estimate was Rs. 6,23,400, and the expenditure amounted to Rs. 5,67,207.

Under *Imperial, Civil Works*, the original grant was Rs. 87,600, the revised estimate was Rs. 87,000, and the expenditure amounted to Rs. 43,890.

Under *Provincial* the figures were: original grant Rs. 21,00,000, revised estimate Rs. 22,84,000, and expenditure Rs. 21,56,317.

3. *Madras Harbour Works.*—As stated in the administration report for 1885-86, the Act to provide Trustees for the Harbour of Madras received the assent of the Viceroy and Governor-General on the 20th February 1886. The Act was brought into force from 1st June 1886, from which date the control of the harbour works and its establishment was made over to the Harbour Trust Board. For the remainder of the year, the audit of the construction accounts was conducted, as before, by the Examiner, Public Works Accounts.

The progress made on the harbour works was much less than was hoped for, but still a decided advance was accomplished during the year, and the new system of building and protecting the walls was thoroughly started.

The superstructure of the north pier was advanced by a length of 445 lineal feet, 645 concrete blocks having been used for this purpose, all thoroughly bonded together and secured by iron cramps to one another.

In addition to this work, 828 blocks, representing 24,382 tons of concrete, were deposited in the wave-breaker on the sea side of the north pier.

In the rubble foundations 98,560 tons of stone were deposited during the year.

The south pier superstructure was advanced by a length of 300 feet, 383 blocks being used in the construction. There were also 552½ blocks placed outside to form a wave-breaker, and 16,242 tons of stone were deposited in the foundation. Much difficulty was experienced at the south pier in consequence of old blocks from the ruined work being thrown by the sea into the line of new foundations; but many of these blocks were removed in a complete state, and were deposited in the wave-breaker at each pier.

Concrete blockmaking progressed fairly well during the year, and 2,151 blocks of different shapes were made, but the full speed of blockmaking was not attained in any one month.

From Pallavaram quarries 201,451 tons of stone were received in the year under review, and the work at the quarry was kept up to the required degree of speed on the whole. In December 1886 the contractor for this branch of the work died suddenly, and a new contractor was appointed by the Harbour Trust Board.

The expenditure during the year was Rs. 8,02,965, divided as below:—

	RS.
Works	7,85,717
Establishment	65,774
Tools and Plant	70,666
	9,22,157
Deduct debits to suspense heads of account	1,19,192
Net expenditure	8,02,965

The grant for the financial year was Rs. 10,19,100.

On 23rd May and on 8th and 9th November two severe cyclones passed near Madras and raised very high seas. No damage was done to the works, however, but the storm of November caused serious encroachments of the sea at Rayapuram, and a portion of the enclosure wall of the Bidén Home for sailors was destroyed.

On 23rd May two native vessels were totally wrecked, and some of the divers on the works behaved very gallantly in rescuing the crews, for which acts they were rewarded with silver medals by the Harbour Trust Board.

4. *Gopalpur Pier.*—At the end of 1885-86, almost all the materials for this work, as designed, had been delivered, and construction had progressed to the tenth bay. During the year the progress was not so great as had been expected, and the end of the year found the work carried out only as far as the seventieth bay (there will be ninety-three in all, exclusive of the prolongation of the pier shorewards, instead of a masonry abutment). As the work was carried on, it was found that differences in sea-bed levels from those which obtained when the design was made, necessitated the use, after the seventeenth tier, of longer piles than those provided for, and this rendered it advisable to put extra bracing to the end sections of the pier. Some hard ground was also met with, for screwing through which the contractors made additional claim. A revised estimate, therefore, became necessary, and was under preparation at the close of the year. The total expenditure on the work to the end of the year was Rs. 2,13,593.

5. *Cruz Milagre Dam.*—The only work carried out during the year in connection with the dam was dropping stones along the toe of the revetment on the back-water side, and raising the revetment on the lagoon side to a uniform level. The expenditure was Rs. 186.

6. *Mangalore Harbour.*—In March 1886, the Superintending Engineer submitted suggestions for cutting off the connection between the two rivers flowing into the harbour by means of strong bunds thrown across the backwater, each bund to contain a lock for the passage of country vessels. These proposals, the cost of which was roughly estimated at Rs. 1,50,000, were characterised by the Port Officer, Madras, as providing a very complete solution of the Mangalore difficulties, if only the intractable nature of the rivers and the shifting propensities of the sea sand could be kept out of sight. He considered, at the same time, that the circumstances of the port did not justify the large expenditure involved, while the success of the proposed operations was far from certain. It was found, moreover, that the monsoon floods of 1886 had improved the condition of the harbour, and the Port Officer strongly advised that

nature should be left to herself for some time longer. The Government thereupon resolved to defer action on the proposals for improving the port.

7. *Negapatam Harbour.*—Estimates for filling in the abandoned boat basin and for diverting the town drainage from the foreshore were under preparation by the Public Works Department at the close of the year, and a scheme for the drainage and water-supply of the town was under investigation by the Executive Engineer.

8. *Bangalore Water-supply.*—The proposals of this Government for improving the water-supply of the troops at Bangalore, a brief sketch of which was given in the administration report for 1885-86, were laid before the Government of India in September 1886, and at the close of the year no reply had been received. The calingulah of the Halsur tank was being raised a foot by the municipality of Bangalore, with a view to increase the storage capacity of the tank, and improvements to the upper Halsur and the lower Miller's tanks were also being carried out.

9. *Ootacamund Water-supply.*—The improvement of the water-supply of Ootacamund was one of the projects recommended by the Committee of 1881. Detailed estimates, amounting to Rs. 1,70,000, for improving the water-supply to that portion of the station lying to the north of the lake were completed by the Public Works Department in December 1884, but owing to the inability of the municipality to raise the requisite funds, no action could be taken towards putting the work in hand. The cost of the water-supply scheme for the entire station was estimated approximately at 2½ lakhs, half of which sum the Government proposed to contribute, but on further consideration, in June 1886, they resolved to carry out, from Provincial funds, so much of the project as related to the northern side of Ootacamund, and to leave the portion relating to the southern side, estimated to cost Rs. 75,000, to be dealt with by the municipality. A grant of Rs. 1,10,000 was allotted, and arrangements were at once made to commence the work. The scheme provided for improving and extending the catchment area of the Marimund reservoir, and for delivering the water to the inhabitants through iron pipes, instead of the existing open channels. At the end of the year, the service reservoir below Snowdon House and the duct for conveying water from the additional gathering ground near Snowdon to Marimund were nearly completed, while the iron pipes, whose arrival had been seriously delayed by the break down of the steamer conveying them, were daily coming in. The expenditure on the work during the year amounted to Rs. 1,11,085.

10. *Artesian Boring in the Kortalaray Valley.*—The experiment of sinking an artesian well in the People's Park at Madras having failed, Monsieur A. P. deClossets recommended that a further experiment should be made in the alluvial valley of the Kortalaray, not far from the head of the canal conducting the water of that river into the Cholavaram and Red Hills tanks. Monsieur deClossets expressed strong hopes of success in that locality, and Dr. King, Superintendent, Geological Survey of India, and Mr. Bruce Foote, of the same department, having pronounced the proposal to be a reasonably promising one on geological grounds, the Government authorised a trial boring to be made under Monsieur deClossets' superintendence at a site suggested by Mr. Bruce Foote, slightly different from that selected by Monsieur deClossets. The work was commenced at the end of June 1886, and an ascending sheet of water was struck at a depth of 40 feet. As this, however, did not rise to more than 3 feet from the surface, it was considered advisable to continue the boring, and, in December 1886, a depth of 153 feet had been reached. A fresh estimate for continuing the boring 200 feet was then sanctioned; and at this depth, which was reached before the close of the official year, although ascending water had not been tapped, the conditions continued to be favorable. The extension of the boring to 300 feet was therefore authorised, and a revised estimate was called for. The expenditure to the end of March amounted to Rs. 3,359.

11. *Wynaad Communications.*—Good progress was made on the work of reforming the Calicut-Vayitri road. The collection of metal in the 12th, 16th and 17th miles was nearly completed, and a good part of that required in the 11th, 18th, 19th, 20th and 21st miles, while the opening of all catch drains was nearly finished. Many sites of tunnels were marked out, some were in progress, and materials were being collected at the site of others.

The iron-work for all the bridges on the road was received from England, and that for the Kodangom Payu bridge carted to site. About three-fourths of the

Tambracheri ghât was finished, and the remainder was in good progress. The great land slips, which occurred in July and August 1886, caused much extra work in special repairs, but all removeable matter had been taken away, and all dangerous trees cut down. Strong and well built revetments were made to support the road. The total grant for the year for work on the Calicut-Vayitri road, including special repairs, amounted to Rs. 1,35,085, while the expenditure was Rs. 1,35,450.

The only work done by the department on the Vayitri-Gûdalûr road was in connection with the Sholadi bridge, the construction of which was commenced in 1885-86. During 1886-87 a large quantity of stone and other material was collected at site, the iron-work was received from England, and the masonry commenced. The expenditure was Rs. 12,449, against a grant of Rs. 16,991.

The Ootacamund-Gûdalûr road was completed during the year, with the exception of a few revetments and parapets, and was in excellent order.

12. *Potinghi-Koraput Road.*—The progress on this work was very slow owing to the extreme unhealthiness of the locality. Every subordinate sent to it was shortly invalided with fever. The Assistant Engineer, Mr. Knowles, though frequently suffering from fever, remained at his post, but without adequate subordinate assistance he could not do very much. Labor was also very difficult to obtain along the line of road.

The iron-work for two bridges on the Potinghi-Koraput road and for one bridge on the Potinghi ghât was ordered from England.

The wheeled traffic on the Potinghi ghât has increased considerably, and averaged during the year 2,316 carts a-month. The effect on the country above the ghât must be great. The Collector, writing from Koraput in March 1886, said "carts come by the bungalow where I am now writing, and where I have in former days longed for even two carts to help me in my work, literally in hundreds."

Surveying and levelling for a continuation of the road from Koraput to Jagdalpur was carried out under considerable difficulties owing to the unhealthiness and wildness of the country. Survey and plans for 35 miles were, however, made.

13. *Road from Cumbum to the foot of the Gûdalûr-Peermade ghât.*—The improvements to this road, estimated to cost Rs. 90,507, were previously in the hands of the District Board, who were carrying out the work from funds supplied by the Public Works Department. Owing to insufficient supervising establishment, the progress was very slow, and, at the end of 1885-86, the work was ordered to be re-transferred to the Public Works Department for execution. During 1886-87, the progress was not much more satisfactory than in the previous year. The expenditure to the end of 1885-86 was Rs. 46,375, and that in 1886-87 was Rs. 9,204, against the grant of Rs. 9,785. Several of the bridges on the road were nearly completed or in progress, and materials were in preparation.

14. *Bridge over the River Vaigai at Madûra.*—The estimate for this bridge, amounting to Rs. 2,46,600, was sanctioned in February 1886, and the work was at first under the direct agency of the District Board. In October 1886, however, it was transferred to the Public Works Department for execution, funds being supplied by the District Board. On the 8th December 1886, the foundation stone was laid in the left abutment of the bridge by His Excellency the Viceroy. When the work was taken over, a siding from the stone quarry to the bridge had been almost completely laid, and pumping and mortar grinding machinery had been procured. Work was not begun in earnest until the end of the Christmas holidays, when the piers were commenced, and in the following three months, six piers and the flooring between them were raised to plinth level. The next four were in progress. Work was somewhat retarded by heavy rain on the 23rd March, when fine weather might have been expected, but fortunately no actual damage to the work occurred. Various minor changes in the design were found necessary, and as the rates originally allowed were found insufficient, a revised estimate became necessary, and was under preparation at the close of the year. The expenditure during the year was Rs. 27,171, against a grant of Rs. 27,143.

15. *Improvements at Ootacamund.*—The greater part of the land between the margin of the lake and the carriage road was acquired by Government, and was being fenced in at the close of the year. Outlay was also incurred in improving the appearance of this land by clearing it of wattle and scrub jungle.

A new road round Mountstuart Hill from Messrs. Oakes and Company's premises to the market was made at a gradient of 1 in 20, and proved a great convenience to the residents. A raised footpath along the road from Charing Cross to the market was also under construction.

16. *Improvements to the South Beach, Madras.*—The extension of the promenade from Elliot's road to St. Thomé, a distance of 1,500 feet, was in progress. This section will complete the promenade from the Napier bridge to St. Thomé, a total distance of 10,666 feet. The extension of the stone dwarf wall along the side between Pyeroff's road and the Hindu cemetery was also in progress. The unsightly fishing village to the south of the Presidency College was entirely removed, and the ground levelled; and a new village for the fishermen was constructed to the west of the canal. The many difficulties connected with the removal of the fishermen were successfully overcome by the assistance rendered to the department by Dewan Bahadur R. Raghunatha Row. The municipal sewage farms, adjoining the fishing village and extending to the Hindu cemetery, were taken over and closed for cultivation, and cremation in the Hindu cemetery was stopped at the end of the year.

17. *Tirumal Naick's Palace, Madûra.*—The total sanction for the restoration of this building and its adaptation for public offices amounts to Rs. 3,31,985, and the expenditure up to 31st March 1886 was Rs. 2,82,836. The works in progress during 1886-87 were on the undermentioned estimates:—

	Rs.
(a) Completing restoration	1,01,500
(b) Locating the judge's court	13,390
(c) Do. the collectorate	51,009

Of these, the first and second were fully worked out, and work on the third estimate was done to the extent of Rs. 22,916. The total outlay on the palace works to the end of 1886-87 was Rs. 3,11,649.

18. *St. Joseph's College Buildings at Negapatam.*—These buildings, formerly the property of the Jesuit Mission, were purchased by the Government in September 1886, for Rs. 30,000, for the accommodation of the undermentioned public offices:—

Head Assistant Collector.	Tahsildar.
Executive Engineer.	Sub-Judge.
Assistant Superintendent of Police.	Sub-Magistrate.
District Munsif.	

At the close of the year, the offices of the Executive Engineer and the tahsildar were located in the buildings, and estimates were under preparation to meet the requirements of the other offices.

19. *Military Churches at Wellington.*—An estimate, amounting to Rs. 38,161, for constructing a Protestant church at the military station of Wellington, was sanctioned by the Government of India in July 1884, and the work was commenced in the same year. As the work progressed, it was found that the cost had been under-estimated, and a revised estimate, amounting to Rs. 47,810, was finally sanctioned. The building was completed in 1886-87 within the amount of the revised estimate, and divine service was held in it for the first time in March. The church is on a design by the late Lieutenant-Colonel Morant, R.E., and though originally intended to contain 300 sittings, is found to accommodate conveniently 450. The station was previously without a place of public worship, and services were held in a barrack-room.

The construction of a Roman Catholic military church at the same station, to contain 200 sittings, was sanctioned in December 1886. The work is being carried out by the Roman Catholic chaplain from funds supplied by Government, and under the supervision of the Executive Engineer.

20. *New Building for the Brecks' Memorial School, Ootacamund.*—The accommodation in the Collector's office having long been found inadequate for the several departments located in it, it was proposed to provide the additional accommodation required by taking over the existing Brecks' school buildings, which are ill adapted for purposes of the school and in objectionable proximity to the public offices, and converting them into a court for the sub-judge and an office for the registrar. The school committee agreed to the alienation of the buildings on the condition that a new building for the school be provided by Government, and an estimate, amounting to

Rs. 38,180, for a new school-house, on a handsome design, was accordingly sanctioned. A site was selected on Mountstuart, commanding the Coonoor road, and the work was commenced in August 1886. By the end of the year, good progress had been made, the expenditure having been Rs. 21,750.

21. *Adam Memorial Fountain, Ootacamund.*—A sum of Rs. 13,770 having been raised by public subscription for the erection of a memorial at Ootacamund to the late Right Honorable W. P. Adam, Governor of Madras, and the Committee having procured from England, at a cost of £830, a handsome iron fountain, the *fac-simile* of one in front of the Town Hall at Leeds, the Government undertook its erection, the construction of a stone basin, and its connection with the Ootacamund water-supply system. The total estimate for the work amounted to Rs. 16,850, the difference between which sum and the amount of subscriptions was contributed by the Government. The fountain was erected before the end of the year, on a site in front of the Collector's office, and is an ornament to the station.

22. *Additions to the Madras College of Engineering.*—To provide the additional accommodation necessary to meet the requirements of the sanctioned scheme for the reorganization of the College, an estimate, amounting to Rs. 90,066, was sanctioned in September 1886. Funds were provided late in the official year, but before its close rapid progress had been made. The new buildings will form an extensive addition to the south end of the College and will be in general keeping with the façade of the old palace.

23. *Public Works Stores.*—Mr. A. Joyce, Executive Engineer, 3rd grade, who was appointed to the charge of the Public Works Stores and Workshops on Mr. O'Connell proceeding on furlough to Europe, assumed charge on the 9th March 1887, and at once entered on taking stock of the Stores. The whole of the articles were counted and weighed, thus completing the checking of the entire stock, which was found correct, and corresponded with the ledger balances. Mr. Joyce also examined the machinery and the plant in the custody of the storekeeper of machinery and found them correct. This machinery belongs chiefly to the Ordnance and Paper Stamping Departments. An attempt was made to dispose of it, and several of the minor articles of stores appertaining to the Ordnance Department were removed by that department, while the remainder, consisting principally of machinery, was offered for sale.

When this has been disposed of there will be no necessity to retain the present establishment, which costs Rs. 112 per mensem.

The opening balance of stock in the Public Works Stores on 1st April 1886 was Rs. 2,01,057, and the receipts from all sources during the year amounted to Rs. 59,350, which, with the opening balance, made a total of Rs. 2,63,407.

The issues during the year amounted to Rs. 55,968, and the balance on the 31st March 1887 was Rs. 2,07,439, or Rs. 2,932 more than the opening balance.

The Buckingham canal route was made use of during the year in forwarding Public Works and Railway stores. No crane has as yet been erected at the basin, but one of the masonry platforms was widened to admit of a 5-ton crane being placed on it. The inconvenience to this department in loading boats with cases and packages weighing from one to two tons was very great. The Assistant Port Officer, however, placed a 2-ton pier crane at the disposal of this department, whereby much of the difficulty was overcome, and now that the platform is ready for use, the 2-ton crane will be returned for service on the pier.

Much work continued to be done by the Port Storekeeper's Department in receiving and despatching stores to both the Bellary-Kistna and Cuddapah-Nellore State Railways. The latter line closed its receiving dépôt at Tippagunlapollum, so that all stores hereafter will be sent by rail to Renigunta. The Bellary-Kistna Railway, however, opened up a dépôt at Chebrole, where all stores for the Kistna branch will be sent to be forwarded to Guntur.

During the year, 8,339 tons of railway materials and stores were received from England, and 1,307 tons from Rangoon.

There were 43 consignments from England, 19 from Calcutta, 9 from Rangoon, making in all 71 consignments received and despatched. The value of the stores from England amounted to £78,922-0-9, that from Rangoon Rs. 35,974-2-0, and of sundries received from Calcutta the value is not known.

24. *Public Works Workshops.*—New forms of accounts were introduced for adoption in the workshops from 1st April 1886, and the administrative accounts of the shops will be submitted to Government by the Examiner of Public Works Accounts.

Here, as in the Stores Department, Mr. Joyce, on assuming charge, took stock of the workshop stores, and the checking of the whole stock was completed.

The following additions were made to the Workshop's machinery, by indents on the India Office:—

- 2 Stocks with taps and dies to cut screws.
- 1 Revetting machine compound lever.
- 1 Circular saw for cutting hot iron.

25. *Government Brick and Tile Manufactory, Madras.*—In addition to the bricks manufactured for Government public works, 2,37,000 bricks were supplied to the Madras Municipality, on payment, for the drainage works, and 92,950 bricks for other municipal purposes; 6,21,675 bricks were also supplied to the Town Hall and Madras Christian College.

Six new drying-sheds were constructed, and four Claytons' brick presses were obtained from England. With these machines excellent bricks are being moulded, cheaper than those made by the old hand-presses. A flooring tile press for manufacture by the dry process was received, and also a machine for making leaden sashes for stained-glass windows.

26. *Government Lithographic Press.*—The value of work turned out during the year by the Government Lithographic Press was Rs. 15,529, while the working expenses amounted to Rs. 11,553.

27. *Transfer of Bridges at Madras to the Municipality.*—In the administration report for 1885-86, reference was made to the resolution of the Government to transfer to the municipality the care and maintenance of the bridges in Madras, which had previously been in charge of the Public Works Department. The transfer took effect from 1st April 1886, the Government making an annual grant to the municipality of Rs. 3,381, being the average yearly cost of repairing the bridges. On the transfer being effected, it was found that the maintenance grant did not include the cost of repairs to the bridges over the Buckingham canal within municipal limits. These bridges were therefore retained in charge of the Public Works Department, during 1886-87, and their transfer to the municipality was ordered to have effect from 1st April 1887, the maintenance grant being increased by Rs. 1,062. The Grant Duff and Revenue Board bridges within the Chopak Park were retained in charge of the Public Works Department, their maintenance being entrusted to the Consulting Architect.

28. *Revision of the Madras Public Works Code.*—The second edition of the Code having become much encumbered with standing orders, the preparation of a third edition was ordered at the end of 1885. The work of revising the text of the Code was begun in January and completed in June 1886; and the third edition was distributed in October and came into force from 1st December 1886. The laborious work of revision was done, mainly out of office hours, by the members of the Examiner's office entrusted with it, and it was thus completed in a comparatively short space of time. The new edition, in many respects, is an improvement on the second edition, while the cost, chiefly owing to the adoption of inexpensive binding, was very much less.

29. *Inspection of Light-houses.*—The light-houses at the undermentioned places were inspected and reported on by the Chief Engineer in January and February 1887:—

Mangalore.	Madras.
Tellicherry.	Pulicat.
Cannanore.	Armeghon.
Calicut.	Point Divi.
Cochin.	Hope Island.
Muttur.	Vakalapudi.
Tuticorin (Hare Island).	Santopilly.
Pamban.	Calingapatam.
Negapatam.	

30. *Grant of Courtesy Titles to Native Officers and Subordinates of the Public Works Department.*—In September 1886, the Government of India sanctioned the grant of the title of Rai Bahadur, Rao Bahadur, or Khan Bahadur *ex officio*, to all native gentlemen in the Public Works Department holding the substantive rank of Executive Engineer. Assistant Engineers and Upper Subordinates who attain the rank of Honorary Assistant Engineer may receive, *ex officio*, the title of Rai Sahib, Rao Sahib or Khan Sahib, and will be eligible for the title of Rai Bahadur, Rao Bahadur, or Khan Bahadur on the recommendation of the Local Government. Other Upper Subordinates of higher rank than overseer will be eligible for the title of Rai Sahib, Rao Sahib, or Khan Sahib, if they have held with credit for five years the charge of an important sub-division and are recommended for the distinction by the Local Government.

In accordance with these orders, the grant of the following *ex officio* courtesy titles to the undermentioned native gentlemen was notified in October 1886 :—

- S. Subharayachariyar, M.C.E., Executive Engineer, 4th Grade, Rai Bahadur.
- S. Gopala Krishna Aiyar, B.C.E., Assistant Engineer, 1st Grade, Rai Sahib.
- C. Muhammad Qasim Sahib, Honorary Assistant Engineer, Khan Sahib.
- S. A. Subrahmanya Aiyar, B.A., B.C.E., Assistant Engineer, 3rd Grade, Rai Sahib.
- T. Subrahmanya Pillai, Honorary Assistant Engineer, Rai Sahib.

Mr. S. Gopala Krishna Aiyar was subsequently granted, *ex officio*, the higher courtesy title of Rai Bahadur, and Mr. T. Subrahmanya Pillai was granted the personal title of Rai Bahadur in connection with the Jubilee honors of 16th February 1887.

31. *Service Books.*—The orders with respect to the due and correct maintenance of the service books of public servants appear to have been carefully attended to generally by officers of the Public Works Department.

32. *Appointment of Consulting Architect to Government.*—During Mr. R. F. Chisholm's incumbency of this appointment, a special and consolidated rate of salary was attached to it, but after the retirement of that gentleman, the Secretary of State for India sanctioned the continuance of the appointment as a permanent measure on the following conditions: that the appointment shall be open to an officer of any rank below that of Chief Engineer, and, should the officer be a Superintending Engineer, or should he rise during such employment to the rank of Superintending Engineer, he shall be treated as a supernumerary and receive promotion in his turn. On those conditions, Lieutenant-Colonel J. L. L. Morant, R.E., A.M.I.C.E., was gazetted to the permanent appointment on the 16th July 1886, but shortly afterwards intimation was received of his death in Australia on the 17th June 1886. No other officer of the Madras Public Works Department was found to possess the special qualifications needed for the post; and, on the nomination of the Government of India, Mr. J. W. Brassington, Executive Engineer, 2nd Grade, Rajputana, was appointed Consulting Architect on six months probation. Mr. Brassington assumed charge of the office on the 23rd November 1886.

33. *Departmental Establishment.*—At the suggestion of the Finance Committee, the Government, in the Financial Department, restricted the Provincial share of the cost of Public Works establishment to Rs. 6,50,000. The grants for public works under Imperial heads of service for the year 1887-88 were, at the same time, considerably less than those of previous years. In framing the preliminary issue of the Provincial budget for 1887-88, it was found, as a consequence, that the contributions from other funds on account of establishment, amounted to only Rs. 13,70,614, against Rs. 16,35,424 in the previous year; and the total provision for establishment including the Provincial contribution, amounted to Rs. 20,20,614, against Rs. 24,59,156, the grant for 1886-87. A large reduction of establishment therefore became necessary, and, at the end of February 1887, the services of the entire temporary establishment attached to the department were dispensed with. This temporary establishment had been gradually entertained during several preceding years to meet the expanding operations of the department, and, at the time of its reduction, consisted of seventeen temporary engineers, about eighty upper subordinates, and a large number of office and inferior servants, the whole costing about three and a quarter lakhs per annum. The reduction was carried out in the midst of the best working season and caused much inconvenience to the department, but to the credit of administrative officers it may be said that it was effected without friction of any kind.

34. *Divisional Changes.*—The reduced grant for establishment rendered it necessary to close the four Tank divisions in the beginning of March, and the following changes were ordered at the same time. The Ganjam and Rushikulya divisions were amalgamated, for account purposes, under the designation of the Ganjam division; the temporary Central Godavari division was combined with the Western Delta division; the temporary Godavada division was amalgamated with the Eastern Kistna division; the Sangam Project division was incorporated into the Nellore division, and the temporary Raminad division was amalgamated with the Madura division. The Godavari Central division was subsequently constituted a permanent division, in lieu of Sangam, and arrangements were being made to reconstitute the Raminad estate works into a separate temporary division. Late in the official year, the Government of India sanctioned an additional grant of three lakhs for tank restoration operations, and proposals were under consideration for continuing the tank schemes with more economical establishments than had previously been employed.

The other divisional changes which occurred during the year were the closure, in August 1886, of the "B" Project division in the IV Circle, and the "C" Project division in the III Circle. In the VI Circle, the Lower Coleroon and the Cauvery and Vennar Project divisions ceased to be independent divisions, and the works were merged into the ordinary divisions.

35. *Casualties, Engineer Establishment.*—During the year, the department suffered two severe losses by death. Lieutenant-Colonel J. L. L. Morant, R.E., Executive Engineer, 1st grade, and Superintending Engineer, 2nd class, temporary rank, died in Australia on the 17th June 1886 while on leave; and Mr. T. D. Harris, Executive Engineer, 1st grade, who had risen to that rank from the subordinate grades, died at Waltair on the 4th June 1886.

II.—PROGRESS OF WORKS.

I.—IMPERIAL—MILITARY WORKS.

36. *Ganjam.*—A sum of Rs. 1,397 was spent in repairing the military hospital, cholera and small-pox shed, and the floor of the quarter guard at Berhampore, and on account of house-rent to military medical subordinates at Berhampore and Chicacole.

37. *Vizagapatam.*—A sum of Rs. 2,573 was expended on the maintenance and repair of all military buildings and roads in the cantonment of Vizianagram.

38. *Godavari (East).*—Repairs to the military buildings at Samalkot were carried out at an outlay of Rs. 692.

39. *Bellary.*—The apothecaries' quarters (double) at Bellary were completed, with the exception of painting the doors and windows. The estimate was exceeded owing to the reconstruction of old foundations and basement; to the provision of sill slabs over doors and windows, not provided for in the original estimates; flooring with slabs; and substitution of new doors and windows for old ones rejected. The outlay amounted to Rs. 6,262 against the estimate of Rs. 6,222. A revised estimate of Rs. 7,856 was subsequently sanctioned.

40. *Stores and timber,* to the value of Rs. 1,084, were collected for the collar-maker and wheelers' shop at Bellary; estimate Rs. 5,663. The contractor, who undertook to spend Rs. 3,000 on the work before the end of the official year, failed to do so, owing to the allotment having been given late in the year.

41. The following minor works were carried out :—

- (1) The drainage system of the European Infantry barracks was improved at a cost of Rs. 1,703.

- (2) The coffee-shop of the Royal Artillery was re-roofed with Mangalore tiles at a cost of Rs. 948, and a temporary forge and shoeing shed erected for the Royal Artillery at a cost of Rs. 345.

42. Nilgiris.—The following works were completed or in progress :—

- (1) The bakery at Wellington was nearly completed; estimate Rs. 35,850, expenditure Rs. 30,132.
- (2) Two lying-in wards were added to the station hospital at Wellington at a cost of Rs. 2,909; estimate Rs. 3,036.
- (3) Quarters for a barrack sergeant at Wellington were commenced; estimate Rs. 7,348, expenditure Rs. 3,213.
- (4) The Lawrence Asylum buildings were improved at a cost of Rs. 4,595; estimate Rs. 5,790.
- (5) Repairs were executed to the Lawrence Asylum and the military buildings at a cost of Rs. 9,246 and Rs. 7,040, respectively.

43. Coimbatore.—The following minor original works were completed :—

- (1) Constructing two cisterns to hold water for fire-engines; fixing a weigh-bridge and constructing a shed over it in the stud lines; and improving the sepoy's lines at the Remount Depot, Matigiri. The estimates amounted to Rs. 1,330, 172 and 230, respectively.
- (2) Improving the rest-house at Pôdanûr; estimate Rs. 1,190.

44. Repairs to the military buildings at the Remount Depot at Matigiri and to the rest-houses at Pôdanûr and Mottujalaiyam were carried out at an outlay of Rs. 5,606.

45. West Coast.—The entire project of accommodating troops at Malapuram was completed according to the revised estimates. The buildings finished and occupied during the year were—

1. Block No. 2 with out-houses.
2. Ward for contagious diseases.
3. All the covered passages.
4. The drains.
5. Converting the wood godown into a bakery.
6. Cattle and sheep pen.

46. The allotment for several works in connection with the barracks was Rs. 8,315, of which Rs. 7,691 were expended, bringing the total expenditure at the end of the year to Rs. 1,22,672 against the estimate of Rs. 1,80,212.

47. The following works were completed or in progress :—

- (1) Improvements to the elephant shed at Malapuram were in progress; estimate Rs. 2,060, expenditure Rs. 810.
- (2) A store-room for the Madras Infantry regiment stationed at Quilon was almost completed; outlay Rs. 6,653 against an estimate of Rs. 9,334.
- (3) The bomb-proof roof of the military magazine at Quilon was covered with an additional tiled roof to prevent the leakage frequently complained of. The lightning conductor of the magazine was renewed. The aggregate cost of the two works amounted to Rs. 3,153 against an estimate of Rs. 3,880.
- (4) The old jailor's quarters at Calicut were improved; estimate Rs. 1,200, outlay Rs. 1,076.
- (5) The family quarters of No. 2 block of West Hill barracks at Calicut were adapted for quarters for the Commissariat Sergeant and store-room; estimate Rs. 650, outlay Rs. 599.
- (6) The lightning conductors on the magazine at West Hill barracks were renewed at an outlay of Rs. 647 against an estimate of Rs. 730.
- (7) The supplemental estimate of Rs. 1,179 for converting the old cells in the Cannanore Fort into a double magazine and providing shelves and racks, &c., was worked out, bringing the total outlay to Rs. 3,233 against the estimate of Rs. 3,590. The expenditure under repairs, military, amounted to Rs. 32,307 against an allotment of Rs. 33,497.

48. North Arcot.—No major or minor works were carried out during the year.

49. A sum of Rs. 2,977 was spent under repairs, including the usual annual contribution of Rs. 1,000 paid to the municipality on account of the maintenance of Vellore cantonment roads.

50. South Arcot.—Rupees 425 were spent out of a grant of Rs. 444 on account of compensation for quarters for three military apprentice overseers and rent of quarters for the Sergeant Instructor of the South Indian Railway Volunteer Rifle Corps.

51. Chingleput.—The following works in connection with the new Royal Artillery barracks at the Mount were completed :—

- | | |
|--------------------------|-------------------|
| (a) Barrack, east block. | (e) Wheeler shop. |
| (b) Barrack, west block. | (f) Store-room. |
| (c) Three wash-houses. | (g) Latrine. |
| (d) Three kitchens. | |

52. The construction of a recreation-room, coffee-shop, plunge-bath, and drains at the barracks of the Artillery at the Mount was completed. The total outlay was Rs. 1,37,694 against an estimate of Rs. 1,46,910.

53. Granite head and heel stones were provided and three gearing rooms were constructed in the stables of the Royal Artillery at St. Thomas' Mount. The total outlay was Rs. 22,914 against an estimate of Rs. 21,300.

54. The construction of a coffee-shop with kitchen for the upper storey barracks, St. Thomas' Mount, was in progress. Rupees 2,165 were expended on an estimate of Rs. 6,690.

55. Seven minor new works were completed at a cost of Rs. 1,232.

56. The expenditure on minor new works and repairs was Rs. 28,851, and the total expenditure under repairs, including barrack-master's petty repairs, compensation for quarters, &c., was Rs. 36,236.

57. The principal buildings repaired were—

- (1) The south barracks at the Mount; estimate Rs. 3,020, outlay Rs. 2,817.
- (2) Garrison store-room in the staff office at Poonamallee; estimate Rs. 540, outlay Rs. 499.
- (3) Station hospital and out-houses at Poonamallee; estimate Rs. 860, outlay Rs. 782.
- (4) Three blocks of the west barracks and its out-houses at Mount; estimate Rs. 1,360, outlay Rs. 1,355.
- (5) Station hospital and its out-houses at Mount; estimate Rs. 910, outlay Rs. 882.
- (6) Roof of Sergeant-Major's quarters at Poonamallee; estimate Rs. 790, outlay Rs. 742.
- (7) Renewing soil of stables and horse lines of 2/1st Battery, Royal Artillery, Mount; estimate Rs. 6,050 and outlay Rs. 5,908.

58. Presidency and Bangalore.—The following works were completed :—

- (1) The conversion of A block family quarters, Fort St. George, into single men's barracks; estimate Rs. 15,877, outlay Rs. 5,955.
- (2) Additional work to the coast batteries and the maintenance of the casuarina plantations on the beach for the purpose of screening the coast batteries, at a cost of Rs. 1,965; total outlay Rs. 8,184, estimate Rs. 8,240.
- (3) Guard-rooms, kitchens and latrines for the coast batteries; estimate Rs. 6,025, outlay Rs. 5,843.
- (4) Improvements to the armament, Fort St. George; estimate Rs. 42,035, outlay Rs. 37,597.
- (5) The reconstruction of a wheel-wright shop at the Gun Carriage Factory; estimate Rs. 7,370, outlay Rs. 6,597.
- (6) Improvements to the wash-houses at the parade barracks, Bangalore; estimate Rs. 12,500; outlay Rs. 10,720.

- (7) Additions to the military prison at Agram; estimate Rs. 8,325, outlay Rs. 7,478.
- (8) Cavalry stables at Agram for 66 additional horses; estimate Rs. 5,930, outlay Rs. 5,560.
59. The following works were in progress :—
- (1) Conversion of racket-court in Fort St. George into a covered gymnasium; estimate Rs. 11,890, outlay Rs. 2,320.
 - (2) Improving the water-supply of Fort St. George; estimate Rs. 6,445, outlay Rs. 6,248.
 - (3) Public buildings for a regiment of Native Infantry on the Arab lines plateau at Bangalore; estimate Rs. 21,636, outlay Rs. 15,188.
60. Twenty-one minor new works at the Presidency and thirty-six at Bangalore were commenced and completed during the year at a cost of Rs. 10,432.
61. Two hundred and ninety-two repair works at the Presidency and two hundred and five at Bangalore were carried out during the year.
62. Payments, amounting to Rs. 19,297, were made to the Madras Municipality on account of house, water, and light taxes on Government military buildings outside Fort St. George, and Rs. 6,000 on account of maintenance and repairs to the esplanade and Fort beach roads.
63. At Bangalore Rs. 1,200 and Rs. 6,300 were paid to the Cantonment Municipality for the conservancy of the main sewer and the maintenance of the military roads.
64. The total outlay under repairs was Rs. 1,21,486 at the Presidency and Rs. 48,785 at Bangalore.
65. The most important of the repair works that were undertaken in the Presidency during the year were—
- (1) Repairing and lime-washing walls of European Infantry barracks, Fort St. George; estimate Rs. 3,690, outlay Rs. 1,389.
 - (2) Re-roofing mess-house, Fort St. George; estimate Rs. 6,400, outlay Rs. 4,107.
 - (3) Repairing and lime-washing public quarters at the Gun Powder Factory; estimate Rs. 3,570, outlay Rs. 811.
 - (4) Thorough repairs to the Government granary on the beach; estimate Rs. 8,800, outlay Rs. 6,802.
 - (5) General repairs and covering the floor of the Army Clothing Department office with asphalt; estimate Rs. 2,670, outlay Rs. 2,313.
 - (6) Supplying gravel to the parade-ground and sepoy's court-yards of the Native Infantry lines, Perambur; estimate Rs. 6,490, outlay Rs. 6,308.
66. The following repair works were carried out in Bangalore :—
- (1) Painting doors and windows of Cavalry Agram barracks; estimate Rs. 3,975, outlay Rs. 3,918.
 - (2) Painting doors and windows of Royal Artillery barracks; estimate Rs. 2,487, outlay Rs. 2,378.
 - (3) Renewing filtering materials of the cistern at the Ulsoor Rock; estimate Rs. 1,783, outlay Rs. 1,742.
 - (4) Renewing filtering materials of the cistern at Dhobie's Wells; estimate Rs. 1,577, outlay Rs. 1,516.
 - (5) Painting doors and windows of Ulsoor Royal Horse Artillery barracks; estimate Rs. 1,782, outlay Rs. 1,746.
67. **Trichinopoly.**—A sum of Rs. 4,532 was expended in repairing the military buildings and in paying compensation for quarters in the other divisions in the circle.
68. The construction of public buildings for a regiment of Native Infantry was continued, a magazine and cells having been under progress; the outlay was Rs. 1,753 against a grant of Rs. 3,593.

69. The construction of stone drains for the new lines mentioned above, for which a grant of Rs. 1,000 was given, could not be commenced, the estimate not having been sanctioned. The construction of these drains has since been ordered to be deferred.

II.—IMPERIAL—CIVIL WORKS.

70. **Vizagapatam.**—Repairs to the post offices at Vizagapatam, Narsapatnam and Koraput were completed.

71. The construction of a post office building at Sálúr, for which an estimate of Rs. 2,000 was sanctioned, was in progress. The outlay amounted to Rs. 311.

72. **Godavari (East).**—A sum of Rs. 735 (of which Rs. 306 were spent in the previous year) was expended on improvements to the post office building at Bhadrachalam against an estimate of Rs. 830. The work was fully completed.

73. An estimate, amounting to Rs. 34,135, was sanctioned for the construction of quarters for signallers to the Telegraph department at Cocanada. The work was completed at a total cost of Rs. 39,554, the expenditure during the year being Rs. 5,634.

74. Improvements to the telegraph office at Cocanada were carried out at a total cost of Rs. 3,821, against an estimate of Rs. 4,000.

75. **Kistna (East).**—A well in the compound of the Bezvada post office was constructed during the year. The outlay amounted to Rs. 307 against an estimate of Rs. 280. After three-fourths of the work had been completed the estimate required revision, owing to clay having been met with. The repairs to the telegraph offices at Bezvada and Masulipatam were executed.

76. **Kistna (West).**—Rupees 804 were expended in completing the Duggirala post office; estimate Rs. 900, allotment Rs. 757. The telegraph office at Guntur was repaired.

77. **Nellore.**—A sum of Rs. 842 was spent on the construction of quarters for the postmaster at Gúdur; estimate Rs. 1,260, grant Rs. 1,232. The work was almost completed.

78. The post offices at Kívali and Kristnapatam were repaired during the year, but the repairs of that at Gúdur could not be commenced till the quarters for the postmaster were finished.

79. **Bellary.**—The walls of the post office at Anantapur were raised to a height of 11 feet, and out-houses nearly finished; but the work was suspended pending sanction to the construction of a telegraph office-room, which it was proposed to attach to the post office. The expenditure amounted to Rs. 1,922 against the estimate of Rs. 4,051.

80. **Coimbatore.**—Repairs to five post offices were carried out during the year at an outlay of Rs. 762.

81. **Nilgiris.**—The Ootacamund telegraph office was repaired at a cost of Rs. 564, and the Wellington post office at an outlay of Rs. 158.

82. **West Coast.**—Certain vacant buildings in the Fort at Tellicherry (late district jail) were converted into a post office and postmaster's quarters. The estimate amounted to Rs. 1,810 and the expenditure to Rs. 1,788. The work was completed. Rupees 637 were spent in repairs to eight postal buildings.

83. **North Arcot.**—A sum of Rs. 76 was spent on the construction of a well for the Punganur post office.

84. Rupees 350 were spent on repairs to postal buildings and Rs. 41 on repairs to telegraph buildings.

85. **South Arcot.**—A sum of Rs. 148 was expended on repairs to postal buildings.

86. **Presidency and Bangalore.**—The out-offices for the combined post and telegraph offices at Madras were completed by the conversion of the Commissariat

mule stables on the foreshore into stables for the post office and the construction of quarters for the sergeant in charge of the mails. The total expenditure on the combined offices amounted to Rs. 6,89,931 while the estimate was Rs. 6,92,094.

87. Under minor works an estimate of Rs. 2,790 was sanctioned for additions to the lightning conductors of the post and telegraph office to bring them into accordance with the new code of regulations, and other minor additions required by the departmental officers.

88. The following repairs were carried out:—

- (1) Repairing and white-washing walls of the Mylapore post and telegraph offices; estimate Rs. 155, outlay Rs. 152.
- (2) Repairing and white-washing the Shoolay post and telegraph offices, Bangalore; estimate Rs. 186, outlay Rs. 172.

89. **Trichinopoly.**—Slight improvements were carried out to the post office at Teppakulam and the sub-post office at Trichinopoly at a cost of Rs. 45 and Rs. 30, respectively.

90. **Tanjore.**—Out of an allotment of Rs. 1,292, Rs. 1,079 were utilized. The chief item on which short outlay was incurred was the extension of Kumbakonam post office. The work was completed.

91. **Madura.**—The construction of a post office at Butlagundu was proceeded with. Out of the grant of Rs. 795, Rs. 795 were spent and the work was nearly completed.

92. An outlay of Rs. 109 was incurred in repairing the post offices at Kovilur and Ammayanayakanūr.

93. **Ramnad.**—The grant of Rs. 751 was fully spent in completing the additions to the post office building at Ramnad.

94. **Tinnevely.**—An expenditure of Rs. 437 was incurred on repairing the post offices at Palamcottah and Srivaikuntham. The former was completed and the latter in progress.

III.—PROVINCIAL—CIVIL BUILDINGS.

95. **Ganjam.**—A building, for the residence and office of the Executive Engineer at Chicacole, was purchased for a sum of Rs. 1,250, and thoroughly repaired; estimate Rs. 3,440, outlay Rs. 3,606.

96. **Vizagapatam.**—The construction of a residence for the Assistant Superintendent of Police at Jeypore was completed; estimate Rs. 15,350, outlay Rs. 15,068.

97. An expenditure of Rs. 9,017 was incurred in connection with the provision of additional accommodation to the huzur treasury at Vizagapatam against an estimate of Rs. 9,360. The work was completed and the building handed over to the Revenue Department.

98. The following works were in progress:—

- (1) A police station-house at Komarada; estimate Rs. 1,520, outlay Rs. 426.
- (2) Additions and alterations to the deputy tahsildar's office at Palkonda and the construction of a police station-house in its compound; estimate Rs. 4,920, outlay Rs. 1,876.
- (3) Police station-house at Koraput; estimate Rs. 3,895, outlay Rs. 2,079.
- (4) Additions to the deputy tahsildar's office at Bimlipatam; estimate Rs. 1,040, outlay Rs. 947.
- (5) Improvements to the district court-house at Vizagapatam; estimate Rs. 1,861, outlay Rs. 2,231. The Executive Engineer stated that it was found necessary to do more work than was estimated for; hence the excess.

99. About Rs. 24,000 were reserved to meet the cost of the iron bridges on the Pottinghi ghāt road ordered from and to be paid in England, but no notice has been received that this amount was utilised.

100. Under Repairs a short outlay of Rs. 1,000 was due chiefly to a saving in repairs to warders' lines in the Lunatic Asylum, Waltair, it having been decided not to put teak in the roofs of these huts.

101. **Godavari (East).**—The following works were completed or in progress:—

- (1) Constructing a district munsif's court-house at Peddapuram; estimate Rs. 10,300, outlay Rs. 11,847.
- (2) Sub-magistrate's cutcherry at Pithapuram; estimate Rs. 8,983, outlay Rs. 9,576.
- (3) Water-supply and improvements to the existing drainage of the central jail at Rajahmundry; estimate Rs. 33,030, outlay Rs. 30,748.
- (4) Constructing registrar's office at Cocanada; estimate Rs. 4,700, outlay Rs. 4,598.
- (5) Constructing a sub-magistrate's cutcherry at Tunni; estimate Rs. 9,436, outlay Rs. 7,256.
- (6) Materials for the construction of a dispensary at Bhadrachalam were being collected; estimate Rs. 4,246, outlay Rs. 839.
- (7) Constructing a residence at Dowlaishweram for the Superintending Engineer; estimate Rs. 22,400, outlay Rs. 21,697.
- (8) Constructing a residence for the Executive Engineer at Dowlaishweram; estimate Rs. 12,500, outlay Rs. 9,114. Work in progress.
- (9) Improvements to the sea-customs buildings at Cocanada; estimate Rs. 4,310, outlay Rs. 4,820.
- (10) Constructing a sub-registrar's office at Pithapuram; estimate Rs. 2,300, outlay Rs. 2,315.
- (11) Constructing quarters for the hospital assistant attached to the Public Works Department dispensary at Dowlaishweram; estimate Rs. 605, outlay Rs. 540.
- (12) Extension to the Provincial College, Rajahmundry; estimate Rs. 1,620, outlay Rs. 1,526.
- (13) Constructing a second-class station-house at Bhadrachalam; estimate Rs. 1,826, outlay Rs. 1,769.

102. **Godavari (West).**—A sub-registrar's office at Pentapad was completed; estimate Rs. 2,710, outlay Rs. 2,679.

103. The following works were in progress:—

- (1) Sub-registrar's office at Tanuku; estimate Rs. 3,090, outlay Rs. 268.
- (2) Taluk cutcherry at Tanuku; estimate Rs. 21,420, outlay Rs. 20,458.
- (3) Taluk cutcherry at Bhimavaram; estimate Rs. 22,650, outlay Rs. 22,299.

104. **Godavari (Central).**—The construction of a sub-registrar's office at Razole was in progress; estimate Rs. 2,730, expenditure Rs. 2,205.

105. **Kistna Eastern Division.**—The construction of a residence and office for the Superintending Engineer was completed, with the exception of the latrines; estimate Rs. 26,775, expenditure Rs. 27,961. Out of an allotment of Rs. 1,000 for raising the compound round the Superintending Engineer's residence, Rs. 401 were spent.

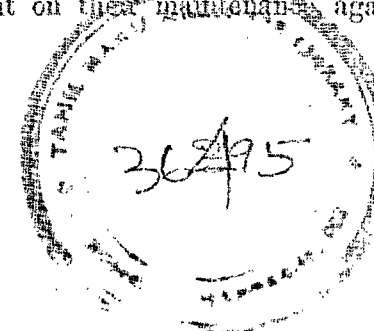
106. An allotment of Rs. 1,170 was granted for the addition of a room to the new treasury in the Gudivada taluk office. Nothing was spent during the year owing to the late receipt of the allotment.

107. A sum of Rs. 800 was allotted for the construction of head constables' and constables' huts at Bezvada. Rs. 408 were spent in collecting materials and the work had then to be stopped owing to the refusal of the Church Mission Society to give up the land in their school compound, where it was proposed to build the huts.

108. Repairs to the following were completed:—

- | | |
|----------------------------|-----------------------------------|
| (1) The Collector's house. | (3) Eastern division office. |
| (2) St. Mary's Church. | (4) Northern sub-division office. |

109. **Kistna Western Division.**—Trees were planted in the compound of the division office and a sum of Rs. 33 spent on their maintenance against a grant of Rs. 115.



110. Slight repairs to the division office at Duggirala and the jail buildings at Guntūr were carried out.

111. **Nellore.**—The following works were completed during the year :—

- (1) Sub-registrar's office at Gūdūr.
- (2) Police huts at Kandukūr.
- (3) Extension of the sawyers' shed, Nellore workshops.

The sub-registrar's office at Addanki was in progress.

112. Under Repairs the following buildings were attended to :—

- (1) Hill bungalow at Ongole.
- (2) Sub-Collector's bungalow at Ongole.
- (3) Police Assistant Superintendent's bungalow at Ongole.
- (4) Kodavulur bungalow.
- (5) Collector's bungalow at Nellore.
- (6) Taluk cutcherry and sub-jail at Kandukūr.
- (7) Police station-house at Nāyudupet.
- (8) Deputy tahsildar's cutcherry and sub-jail at Venkatagiri.
- (9) Taluk cutcherry at Atmakūr.
- (10) District jail, Nellore.

113. **Bellary.**—The second-class taluk office at Siruguppa was completed during the year; but final payment was not made owing to the delay on the contractor's part in rectifying defects in the roof, which caused the measurements to be postponed. The expenditure amounted to Rs. 12,704, against the estimate of Rs. 12,680.

114. The Collector's office at Anantapur was completed with the exception of a stair case to the upper story, parapets, second coat of plaster, and wood oiling, fitting doors and ventilators, laying slabs to upper verandah, and substituting iron railing for masonry parapet walls. The progress of the work was not quite satisfactory owing to the contractor's failure to make proper arrangements. The expenditure on the work amounted to Rs. 49,902, against the estimate of Rs. 55,000.

115. The Head Assistant Collector's office at Penukonda was completed and handed over. The expenditure amounted to Rs. 16,091, against the estimate of Rs. 16,682.

116. The second-class taluk office at Bukkapatnam was completed and occupied during the year. The expenditure amounted to Rs. 12,777, against the estimate of Rs. 12,200.

117. The old structure in the Collector's residence at Anantapur was removed; but nothing more could be done as no contractor came forward to take up the work, and it was not possible to arrange for the execution of the work departmentally within the short time left to close the official year. The expenditure on the work amounted to Rs. 15,997, against the estimate of Rs. 28,190.

118. Improvements to the Collector's office at Bellary were in progress. The walls of the rooms in east and west wings were completed to a height of 8 feet above basement level; and door and window frames were fixed. The expenditure amounted to Rs. 8,518, against the estimate of Rs. 47,540.

119. The undermentioned minor new works were carried out :—

- (1) Enlarging the Collector's printing office at Bellary; estimate Rs. 1,745, outlay Rs. 1,719;
- (2) A police hospital at Hospet at a cost of Rs. 653;
- (3) A sub-registrar's office at Hadgally for Rs. 2,353;
- (4) A sub-registrar's office at Hospet at an outlay of Rs. 2,167;
- (5) The civil cemetery at Bellary was provided with a gateway and robing-room at a cost of Rs. 430;
- (6) Out-houses for the Head Assistant Collector's bungalow at a cost of Rs. 460; and
- (7) A strong-room in the taluk office at Kūdligi at a cost of Rs. 603.

120. **Cuddapah.**—The construction of a taluk office at Vāyalpād was in fair progress. The expenditure amounted to Rs. 9,910, against the estimate of Rs. 25,700.

121. Work was in progress on the Collector's office at Cuddapah. The foundation and basement of the printing office were finished, and the superstructure was in progress. The foundation of the main buildings was nearly completed; estimate Rs. 1,43,741, expenditure Rs. 37,695.

122. Of the sanctioned additions and alterations to the district jail at Cuddapah, the female ward was almost completed and the male ward No. 1 completed, except flooring and painting. The expenditure amounted to Rs. 14,741, against the estimate of Rs. 32,800.

123. The number of works below Rs. 2,500 that were carried out during the year was fifteen, the outlay being Rs. 6,051.

124. **Kurnool.**—The taluk office at Nandyāl was in slow progress owing to difficulty in procuring labor on account of extensive railway works. The expenditure amounted to Rs. 15,662, against the estimate of Rs. 34,676.

125. The sub-divisional officer's quarters at Cumbum were completed on the revised estimate of Rs. 4,794, the expenditure amounting to Rs. 4,770.

126. **Nilgiris.**—A sum of Rs. 3,866 was spent in providing stone steps to the terraces, and guttering to the roof with masonry drains at Government House, Ootacamund.

127. The Protestant church at Wellington was completed during the year within the amount of the revised estimate (Rs. 47,810); the outlay for the year amounted to Rs. 9,574.

128. A Bench Magistrates' court at Kōtagiri was commenced and nearly completed; estimate Rs. 8,060, expenditure Rs. 5,442.

129. Of the undermentioned works, the first five were completed, the others were in progress :—

- (1) Construction of an exercise yard for European convicts in the Ootacamund jail; outlay Rs. 4,472, estimate Rs. 5,790
- (2) The conversion of Rowe's bungalow into a police station, the outlay for the year being Rs. 5,168. The total expenditure amounted to Rs. 9,184, against an estimate of Rs. 9,170.
- (3) Improvements to the Executive Engineer's office at Ootacamund.
- (4) Provision of drains to the police lines at Ootacamund and to the Coonoor cemetery.
- (5) Repairs to Government House, on which a sum of Rs. 9,177 was spent.
- (6) The new buildings for Brecks' Memorial School were in progress; estimate Rs. 38,180, outlay Rs. 21,750.
- (7) The construction of a Roman Catholic church at Wellington; estimate Rs. 30,526, expenditure Rs. 7,000.
- (8) Construction of a new police station at Naduvatam.

130. Four minor works were carried out during the year and the buildings on Mountstuart at Ootacamund were repaired at a cost of Rs. 4,011.

131. **Coimbatore.**—A new room for the huzar treasury at Salem was constructed at a cost of Rs. 2,876.

132. The following works were in progress :—

- (1) Alterations and additions to the quarters of the Superintendent, Central Jail, Salem; estimate Rs. 3,600, outlay Rs. 2,604.
- (2) Construction of quarters for the deputy jailor attached to the Central Jail, Salem; estimate Rs. 3,660, outlay Rs. 2,852.
- (3) Reconstruction of a portion of the district munsif's court at Nāmakal; estimate Rs. 3,595, outlay Rs. 2,514.
- (4) The purchase and improvement of the Police Assistant Superintendent's residence at Tirupatūr; estimate Rs. 4,768, outlay Rs. 4,673.
- (5) The construction of a close prison at Coimbatore; estimate Rs. 19,582, expenditure of the year Rs. 1,534.
- (6) Improvements to the central jail at Coimbatore; estimate Rs. 5,745, expenditure Rs. 4,474.

133. Five minor works were undertaken and fully completed during the year at an outlay of Rs. 1,892.

134. Thirty-five repair works were carried out during the year at a cost of Rs. 3,482.

135. **West Coast.**—The district munsif's court and the record-room at Calicut, which remained incomplete at the end of the previous year, were finished, and with these buildings the whole project of the law courts at Calicut as originally designed was completed at a cost of Rs. 1,03,918, against an estimate of Rs. 1,04,570. The buildings were handed over to the Judicial Department.

136. Improvements to the Government Church at Cochin, which were commenced in the previous year but stopped pending sanction to the estimate, were resumed. Rs. 15,052 (which includes an outlay of Rs. 5,519 incurred in the previous year) were spent, against an estimate of Rs. 20,680.

137. Satisfactory progress was made with the new public offices at Ponani. The year's allotment, Rs. 20,000, was fully expended. The total expenditure up to the end of the year amounted to Rs. 50,784, against the estimate of Rs. 74,521.

138. The following works were in progress:—

- (1) A residence for the Assistant Superintendent of Police at Malapuram; estimate Rs. 13,600, expenditure Rs. 7,222.
- (2) A sub-registrar's office at Chevayar; estimate Rs. 3,020, expenditure Rs. 1,400.
- (3) Improvements to the munsif's court at Betatnad; allotment, Rs. 2,000 was fully worked out; estimate Rs. 4,295.
- (4) Additions and improvements to the Police Superintendent's office at Mangalore; the full allotment of Rs. 3,000 was spent; estimate Rs. 9,200.
- (5) A sub-registrar's office at Puthur and another at Udipi; expenditure Rs. 1,000 and Rs. 1,200, and estimates Rs. 3,120 and Rs. 3,370, respectively.
- (6) A sub-registrar's office at Mannarghat, for which an estimate of Rs. 2,450 was sanctioned.

139. The Head Assistant Collector's residence at Coondapoor, an incomplete work of the previous year, was completed and handed over to the Revenue Department. The total expenditure was Rs. 16,680 against an estimate of Rs. 17,000, the outlay for the year being Rs. 8,915, against an allotment of Rs. 9,235.

140. The following works were completed:—

- (1) The conversion of a vacant building in the fort at Tellicherry (late jail) into a Sub-Collector's cutcherry. Outlay amounted to Rs. 1,665.
- (2) Additions and alterations to the district munsif's court-house at Paynad, commenced in the previous year. The total outlay was Rs. 1,509, against an estimate of Rs. 1,520.
- (3) The conversion of the sweepers' quarters at the lunatic asylum, Calicut, into a patients' ward. The expenditure amounted to Rs. 2,268, against an estimate of Rs. 2,740.
- (4) The erection of a temporary shed for the accommodation of 36 patients at the lunatic asylum at Calicut for Rs. 850.

141. A sum of Rs. 6,683 was spent on repairs, the chief items being:—

- (1) Repairing the roof of St. John's church at Cannanore, Rs. 1,715;
- (2) Rebuilding the turret of the district munsif's court-house at Tellicherry, Rs. 475;
- (3) Repairing the record room of the huzur cutcherry at Calicut, Rs. 572;
- (4) Repairing the Malapuram church and belfry, Rs. 650;
- (5) Repairing the taluk cutcherry at Manjeri, Rs. 1,580.

142. **North Arcot.**—The construction of a sub-magistrate's cutcherry with out-houses at Arkonam was in progress. The outlay was Rs. 8,186, against an estimate of Rs. 14,245.

143. Improvements to the sub-magistrate's cutcherry at Punganur were put in hand, and an outlay of Rs. 2,410 was incurred, on an estimate of Rs. 4,480.

144. Seven minor new works were in progress, of which five were completed. The total outlay amounted to Rs. 7,484.

145. Twelve repair works were carried out at a cost of Rs. 5,501.

146. **South Arcot.**—A sum of Rs. 1,000 was spent on collecting materials for the construction of a sub-registrar's office at Villupuram; estimate Rs. 3,020.

147. Eight minor new works, on which a sum of Rs. 2,636 was spent, were in progress, of which three were completed, viz.:—

- (1) Sub-registrar's office at Oolundurpett.
- (2) Conversion of the office of the Assistant Superintendent of Police into a sub-registrar's office at Tirukoilur.
- (3) Lascars sheds in the compound of the South Arcot divisional office, Cuddalore.

148. Under Repairs a sum of Rs. 1,985 was spent.

149. A contribution by the Cuddalore Municipality of Rs. 60 for survey establishment in connection with the preparation of an estimate for a bridge across the Gadilam river was spent. A sum of Rs. 14, being the balance of a contribution given by the same municipality in 1885-86 for repairs to the powder magazine at Munjakuppam, was utilized in refixing the lightning conductor.

150. **Chingleput.**—The upper-storey of the Agricultural College at Saidapet, for which an estimate of Rs. 18,370 was sanctioned in March 1885, was commenced and completed, with the exception of the tower and lightning conductors. The expenditure was Rs. 16,096.

151. Seven minor new works were completed at a total cost of Rs. 6,974.

152. The buildings at Government House, Quindy Park, and other buildings were repaired at a total outlay of Rs. 15,502.

153. **Presidency and Bangalore.**—An expenditure of Rs. 4,718 was incurred on materials for the alterations to the roof of the north and south wings of the Public Works offices at Chepak. The sanctioned estimate was Rs. 5,035. The work was completed during the year. The saving was chiefly due to the utilization of materials in the old roof.

154. An estimate of Rs. 5,764 was sanctioned for the construction of tiffin-rooms for the clerks of the Revenue Board offices and students of the College of Engineering. The old tiffin-rooms, which stood on the south side of the College of Engineering, an old Carnatic building, a part of which was in a dilapidated state, were pulled down to make room for the extensions to the College of Engineering and a new range of tiffin-rooms was constructed on another site. By utilizing a large quantity of the serviceable materials belonging to the old tiffin-rooms a saving was effected on the estimate. The total expenditure amounted to Rs. 5,215.

155. The construction of covered passages at the new Ophthalmic hospital at Madras was completed. The outlay amounted to Rs. 9,192, against an estimate of Rs. 11,010. An expenditure of Rs. 616 was incurred for laying out the grounds with plants and shrubs.

156. A total expenditure of Rs. 10,610 was incurred on repairs to the Lying-in-hospital at Madras. The general repairs chiefly consisted in replastering the lower portions of wards with Portland cement, painting wood and iron works, washing, &c. The special repairs consisted in taking up and relaying the tiled roofing with a lining of Willesdon paper. The buildings were placed in excellent order.

157. The construction of a latrine, on the bank of the Buckingham canal, west of the Senate House, which was commenced in 1885-86, was completed; expenditure Rs. 6,390; estimate Rs. 6,600.

158. The work of constructing cook-houses and fencing the compounds of the several quarters attached to the College of Engineering was completed; expenditure Rs. 3,851; estimate Rs. 3,872.

159. Alterations and additions to the Presidency College, especially to the physical science department, were carried out. The outlay amounted to Rs. 2,775.

160. The estimate, amounting to Rs. 27,139, for improvements to the roads and maintenance of trees and plants in the Chepak park, was worked out. Most of the expenditure was incurred in 1886-87, and the total outlay amounted to Rs. 27,802.

161. An estimate of Rs. 2,455 was sanctioned for the repair and maintenance of the roads in Chepak park; the expenditure amounted to Rs. 2,463.

162. A sum of Rs. 10,529 was spent during the year for minor (original) works, principally—

(1) Making a road in the open land north of the Ophthalmic hospital.

(2) Cleaning and levelling the site of the old fishing village.

163. Rs. 17,717 were spent on repairs to buildings during the year, including the maintenance of the foreshore and ride at the south beach and the repairs executed to the old eye infirmary; Rs. 4,809 were paid on account of municipal taxes for the Public Works Department offices and Government brickfields.

164. New seats were provided to St. Matthias' Church, Vepery, at a cost of Rs. 2,404; estimate Rs. 2,930.

165. Rupees 3,937 were spent on improvements to, and extension of, the verandah of the main record-room, Government office, Fort St. George; estimate Rs. 4,290.

166. The construction of the city reserve police lines at Pudupet was commenced, and an outlay of Rs. 5,461 was incurred against the estimate of Rs. 27,785 in the collection of materials.

167. The construction of an upper storey to the office of the Deputy Commissioner of Police was commenced, and an outlay of Rs. 2,537 was incurred in the collection of materials against an estimate of Rs. 10,290.

168. The following works at Her Majesty's Penitentiary were in progress:

(1) Quarters for the hospital assistants; estimate Rs. 5,774, outlay Rs. 4,960

(2) A new-work shed; estimate Rs. 3,200, outlay Rs. 2,631.

(3) New roofs to the close prison cells; estimate Rs. 11,200, outlay Rs. 2,290

(4) Twelve solitary cells, commenced in the previous year, were completed estimate Rs. 5,750, outlay Rs. 5,308.

169. A sum of Rs. 1,907 was spent on an estimate of Rs. 2,711 for ornamenting the ceilings of the nave of St. George's Cathedral, and the work was postponed for completion in 1887-88.

170. A commencement was made on the new gate-way for St. Mary's Cemetery, and Rs. 3,302 were spent on an estimate of Rs. 6,285.

171. The property known as the Government Female Normal School at Egmore was purchased for Rs. 12,000.

172. A cottage for twelve lunatics and a block of six rooms for native criminals at the lunatic asylum were commenced and completed at an outlay of Rs. 8,862 against an estimate of Rs. 9,630.

173. A sum of Rs. 5,145 was spent at Madras on furniture for Government-house at Madras, Guindy and Ootacamund.

174. Thirty-two minor new works were carried out at a cost of Rs. 10,098.

175. One hundred and twenty-five repair works at Madras and twelve in Bangalore were carried out. None of the works at Bangalore were of much importance.

176. The following are the more important repairs of those carried out in Madras:

(1) Repairs to the Government Secretariat buildings, Fort St. George; estimate Rs. 5,635, outlay Rs. 1,857.

(2) General repairs to Government House, Banquetting Hall, Marine Villa, and out-houses attached; estimate Rs. 14,300, outlay Rs. 14,851.

(3) Repairs to the Lock Hospital, Black Town, Madras; estimate Rs. 6,755, outlay Rs. 4,249.

(4) Repairs to the roofs of the Public Works Workshops and Stores and renewal of the roof of the Workshop foundry; estimate Rs. 6,885, outlay Rs. 5,495.

177. A sum of Rs. 536 was spent on alterations and additions to the petroleum shed on the beach which was completed last year.

178. Under repairs a sum of Rs. 298 was received from the Secretary, Biden Home Committee, for carrying out repairs to the Home, and Rs. 3,422 from the Secretary, Military Female Orphan Asylum, for carrying out certain works to the asylum buildings. Out of the first mentioned contribution, a sum of Rs. 282 was spent and the work completed. The other contribution was received only in March.

179. **Trichinopoly.**—The construction of a district jail in Trichinopoly, for which a grant of Rs. 11,500 was sanctioned, was in progress. The expenditure amounted to Rs. 11,131.

180. The sub-registrar's office at Manaparai was completed at a cost of Rs. 2,184, the sanctioned estimate being Rs. 2,090.

181. The following repairs were carried out:—

(1) Re-roofing block No. 1, Central jail. The repairs were nearly completed at an outlay of Rs. 2,586.

(2) District munsif's court at Ariyalur, on which a sum of Rs. 560 was spent.

182. **Tanjore.**—The following works were completed:—

(1) A district jail at Tanjore; estimate Rs. 2,11,109, outlay Rs. 2,02,771.

(2) A police station-house at Tanjore; estimate Rs. 6,740, expenditure Rs. 7,113.

(3) Compound mud-walls of the warders' huts attached to the district jail, at a cost of Rs. 1,195, against an estimate of Rs. 1,420.

(4) Alterations to a portion of the old taluk cutcherry for the accommodation of the sub-registrar's office at Triviar; estimate Rs. 1,220, outlay Rs. 1,225.

183. The following works were in progress:—

(1) A combined court-house for the district munsifs of Kumbakonam and Valangiman; estimate Rs. 34,342, expenditure Rs. 7,607.

(2) A first-class taluk cutcherry at Kumbakonam; estimate Rs. 19,240, expenditure Rs. 249.

(3) Extensions to the police station-house at Kumbakonam; estimate Rs. 2,700, outlay Rs. 1,379.

(4) Police station at Kornad, in the Mayavaram taluk; estimate Rs. 1,130, expenditure Rs. 1,102.

(5) Construction of six huts for the land custom police at Nalladay; estimate Rs. 1,950, expenditure for land compensation Rs. 141. Work held in abeyance.

184. Repairs to the buildings below mentioned were put in hand:—

(1) District court, Tanjore, to which lightning conductors were added. Work completed; estimate Rs. 1,127.

(2) Taluk cutcherry at Shiyali in progress; estimate Rs. 1,240.

185. **Negapatam.**—An estimate, amounting to Rs. 1,200, was sanctioned for extending the Government cemetery at Negapatam; outlay Rs. 459.

186. The compound of the Executive Engineer's office at Kadamabady was metalled at a cost of Rs. 147.

187. Rupees 1,073 were paid as compensation for the land taken over for the district munsif's court at Tiruvallur.

188. The following repair works were carried out:—

(1) The portion of St. Joseph's College buildings where the tahsildar holds his office, at a cost of Rs. 1,132.

(2) The sub-registrar's office at Tiruturaipundi, at a cost of Rs. 86.

(3) Other sundry repairs to the extent of Rs. 196.

189. **Madura.**—The following works were in progress:—

- (1) The construction of a sub-magistrate's cutcherry at Madura; estimate Rs. 17,889, allotment Rs. 9,889. A sum of Rs. 5,000 was expended up to the end of 1885-86 and Rs. 9,889 in 1886-87.
- (2) The construction of a second-class police station-house at Saptūr; estimate Rs. 4,850; allotment Rs. 2,350, outlay Rs. 2,086.
- (3) The construction of a sub-registrar's office at Tirumangalam; estimate Rs. 2,864; allotment Rs. 950.
- (4) Improvements to the deputy tahsildar's cutcherry at Tirashuli; estimate Rs. 3,785; allotment Rs. 1,000.
- (5) The construction of a second-class police station-house and one head and five constables' huts at Ammyanayakanūr; estimate Rs. 3,850; allotment Rs. 1,200, out of which Rs. 570 only were expended.

190. The following works were completed:—

- (1) A deputy tahsildar's cutcherry at Vedaundur; estimate Rs. 11,828, total expenditure Rs. 12,200.
- (2) A deputy tahsildar's cutcherry at Uthamapoli; estimate Rs. 11,993, expenditure Rs. 12,547.
- (3) A deputy tahsildar's cutcherry at Nellakōta; estimate Rs. 11,828, expenditure Rs. 12,319.
- (4) A sub-registrar's office at Usilampatti; estimate Rs. 2,580, expenditure Rs. 2,611.

191. The allotment under Minor Original Works was Rs. 1,345; expenditure Rs. 1,217; of this Rs. 1,055 were expended in constructing a second-class police station-house at Iyalur and Rs. 143 on securing the treasury-room of the taluk cutcherry at Tirumangalam; and these two works were nearly completed.

192. A sum of Rs. 1,800 was allotted to repairs. The expenditure, which amounted to Rs. 2,188, was utilized chiefly in:—

- (1) Repairing the Sub-Collector's bungalow, taluk cutcherry and Public Works office at Dindigul;
- (2) Maintaining the garden in Terumal Naick's palace at Madura; and
- (3) Fixing lightning conductors in the palace at Madura.

193. **Ramnad.**—The expenditure during the year on the work of converting the police hospital at Ramnad into a residence for the Assistant Superintendent of Police was Rs. 3,152, against the grant of Rs. 3,239; the work was fully completed.

194. **Tinnevely.**—The following works were completed:—

- (1) The construction of a record-room and improvements to the district court-house at Kokarakulam; estimate Rs. 17,875, expenditure Rs. 12,183.
- (2) The construction of a registrar's office at Kokarakulam; estimate Rs. 4,380, expenditure Rs. 4,268.
- (3) The construction of a sub-registrar's office at Srivilliputtur; estimate Rs. 2,705, expenditure Rs. 2,638.
- (4) Addition of a compound wall to the sub-jail at Sankaranainarkoil; estimate Rs. 4,312, expenditure Rs. 3,817.

195. The following minor original works were completed or in progress:—

- (1) Sub-registrar's office at Vattirayirupur; estimate Rs. 2,200, expenditure Rs. 2,142.
- (2) Sub-registrar's office at Sattankulam; estimate Rs. 2,080, expenditure Rs. 2,014.
- (3) Third-class police station-house at Singhikulam; estimate Rs. 1,397, expenditure Rs. 1,104.
- (4) Drainage work for the district jail at Palamcottah; estimate Rs. 370, expenditure Rs. 368.

196. Repairs to the buildings below mentioned were completed:—

- (1) Head Assistant Collector's bungalow.
- (2) Public Works Department sub-divisional officer's bungalow at Shermadevi.
- (3) The Sub-Collector's bungalow at Tuticorin and some other petty works.

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT, MADRAS,

(GENERAL, BUILDINGS AND ROADS BRANCH.)

FOR THE YEAR 1886-87.

I.—GENERAL REMARKS.

1. The administration of the department devolved, during the year under review, on Colonel J. O. Hasted, R.E., in succession to Colonel Shaw-Stewart, R.E., who resigned his position as Chief Engineer and Secretary to Government on the 8th September 1886.

The following is an extract from the Proceedings of Government recorded on the occasion:—

"In accepting Colonel Shaw-Stewart's resignation of his appointment as Chief Engineer and Secretary to Government, Public Works Department, from the date named, His Excellency the Governor in Council desires to place on record his very high appreciation of the service which that able and zealous officer has rendered to the State during the long period of his connection with the Public Works Department."

In succession to Colonel Hasted, Lieutenant-Colonel J. Pennycook, R.E., officiated as Chief Engineer for Irrigation and Joint Secretary to Government from the 8th September 1886 to the 23rd March 1887, when Colonel H. R. Mead, R.E., returned from furlough and assumed the permanent appointment, with the rank of Chief Engineer, II Class.

2. *Grants and Expenditure.*—The original grant under *Imperial, Military Works*, was Rs. 6,44,400, the revised estimate was Rs. 6,23,400, and the expenditure amounted to Rs. 5,67,207.

Under *Imperial, Civil Works*, the original grant was Rs. 37,600, the revised estimate was Rs. 57,000, and the expenditure amounted to Rs. 43,300.

Under *Provincial* the figures were: original grant Rs. 21,00,000, revised estimate Rs. 22,84,000, and expenditure Rs. 21,56,317.

3. *Madras Harbour Works.*—As stated in the administration report for 1885-86, the Act to provide Trustees for the Harbour of Madras received the assent of the Viceroy and Governor-General on the 20th February 1886. The Act was brought into force from 1st June 1886, from which date the control of the harbour works and its establishment was made over to the Harbour Trust Board. For the remainder of the year, the audit of the construction accounts was conducted, as before, by the Examiner, Public Works Accounts.

The progress made on the harbour works was much less than was hoped for, but still a decided advance was accomplished during the year, and the new system of building and protecting the walls was thoroughly started.

The superstructure of the north pier was advanced by a length of 445 lineal feet, 645 concrete blocks having been used for this purpose, all thoroughly bonded together and secured by iron cramps to one another.

In addition to this work, 828 blocks, representing 24,382 tons of concrete, were deposited in the wave-breaker on the sea side of the north pier.

In the rubble foundations 98,560 tons of stone were deposited during the year.

The south pier superstructure was advanced by a length of 300 feet, 583 blocks being used in the construction. There were also 552½ blocks placed outside to form a wave-breaker, and 16,242 tons of stone were deposited in the foundation. Much difficulty was experienced at the south pier in consequence of old blocks from the ruined work being thrown by the sea into the line of new foundations; but many of these blocks were removed in a complete state, and were deposited in the wave-breaker at each pier.

Concrete blockmaking progressed fairly well during the year, and 2,151 blocks of different shapes were made, but the full speed of blockmaking was not attained in any one month.

From Pallavaram quarries 201,451 tons of stone were received in the year under review, and the work at the quarry was kept up to the required degree of speed on the whole. In December 1886 the contractor for this branch of the work died suddenly, and a new contractor was appointed by the Harbour Trust Board.

The expenditure during the year was Rs. 8,02,965, divided as below:—

	RS.
Works	7,85,717
Establishment	65,774
Tools and Plant	70,666
	9,22,157
Deduct debits to suspense heads of account	1,19,192
Net expenditure ...	8,02,965

The grant for the financial year was Rs. 10,19,100.

On 23rd May and on 8th and 9th November two severe cyclones passed near Madras and raised very high seas. No damage was done to the works, however, but the storm of November caused serious encroachments of the sea at Ráyapuram, and a portion of the enclosure wall of the Biden Home for sailors was destroyed.

On 23rd May two native vessels were totally wrecked, and some of the divers on the works behaved very gallantly in rescuing the crews, for which acts they were rewarded with silver medals by the Harbour Trust Board.

4. *Gopálpur Pier.*—At the end of 1885-86, almost all the materials for this work, as designed, had been delivered; and construction had progressed to the tenth bay. During the year the progress was not so great as had been expected, and the end of the year found the work carried out only as far as the seventieth bay (there will be ninety-three in all, exclusive of the prolongation of the pier shorewards, instead of a masonry abutment). As the work was carried on, it was found that differences in sea-bed levels from those which obtained when the design was made, necessitated the use, after the seventeenth tier, of longer piles than those provided for, and this rendered it advisable to put extra bracing to the end sections of the pier. Some hard ground was also met with, for screwing through which the contractors made additional claim. A revised estimate, therefore, became necessary, and was under preparation at the close of the year. The total expenditure on the work to the end of the year was Rs. 2,13,593.

5. *Cruz Milagre Dam.*—The only work carried out during the year in connection with the dam was dropping stones along the toe of the revetment on the back-water side, and raising the revetment on the lagoon side to a uniform level. The expenditure was Rs. 186.

6. *Mangalore Harbour.*—In March 1886, the Superintending Engineer submitted suggestions for cutting off the connection between the two rivers flowing into the harbour by means of strong bunds thrown across the backwater, each bund to contain a lock for the passage of country vessels. These proposals, the cost of which was roughly estimated at Rs. 1,50,000, were characterised by the Port Officer, Madras, as providing a very complete solution of the Mangalore difficulties, if only the intractable nature of the rivers and the shifting propensities of the sea sand could be kept out of sight. He considered, at the same time, that the circumstances of the port did not justify the large expenditure involved, while the success of the proposed operations was far from certain. It was found, moreover, that the monsoon floods of 1886 had improved the condition of the harbour, and the Port Officer strongly advised that

34. *Divisional Changes.*—The reduced grant for establishment rendered it necessary to close the four Tank divisions in the beginning of March, and the following changes were ordered at the same time. The Ganjam and Rushikulya divisions were amalgamated, for account purposes, under the designation of the Ganjam division; the temporary Central Godavari division was combined with the Western Delta division; the temporary Gudirāda division was amalgamated with the Eastern Kistva division; the Sangam Project division was incorporated into the Nellore division, and the temporary Ramnad division was amalgamated with the Madura division. The Godavari Central division was subsequently constituted a permanent division, in lieu of Sangam, and arrangements were being made to reconstitute the Ramnad estate works into a separate temporary division. Late in the official year, the Government of India sanctioned an additional grant of three lakhs for tank restoration operations, and proposals were under consideration for continuing the tank schemes with more economical establishments than had previously been employed.

The other divisional changes which occurred during the year were the closure, in August 1886, of the "B" Project division in the IV Circle, and the "C" Project division in the III Circle. In the VI Circle, the Lower Coleroon and the Cauvery and Vennar Project divisions ceased to be independent divisions, and the works were merged into the ordinary divisions.

35. *Casualties, Engineer Establishment.*—During the year, the department suffered two severe losses by death. Lieutenant-Colonel J. L. L. Morant, R.E., Executive Engineer, 1st grade, and Superintending Engineer, 2nd class, temporary rank, died in Australia on the 17th June 1886 while on leave; and Mr. T. D. Harris, Executive Engineer, 1st grade, who had risen to that rank from the subordinate grades, died at Waltair on the 4th June 1886.

II.—PROGRESS OF WORKS.

I.—IMPERIAL—MILITARY WORKS.

36. **Ganjam.**—A sum of Rs. 1,397 was spent in repairing the military hospital, cholera and small-pox shed, and the floor of the quarter guard at Berhampore, and on account of house-rent to military medical subordinates at Berhampore and Chicacole.

37. **Vizagapatam.**—A sum of Rs. 2,573 was expended on the maintenance and repair of all military buildings and roads in the cantonment of Vizianagrum.

38. **Godavari (East.)**—Repairs to the military buildings at Sāmalkōt were carried out at an outlay of Rs. 692.

39. **Bellary.**—The apothecaries' quarters (double) at Bellary were completed, with the exception of painting the doors and windows. The estimate was exceeded owing to the reconstruction of old foundations and basement; to the provision of sill slabs over doors and windows, not provided for in the original estimates; flooring with slabs; and substitution of new doors and windows for old ones rejected. The outlay amounted to Rs. 6,262 against the estimate of Rs. 6,222. A revised estimate of Rs. 7,856 was subsequently sanctioned.

40. Stores and timber, to the value of Rs. 1,084, were collected for the collar-maker and wheeler's shop at Bellary; estimate Rs. 5,663. The contractor, who undertook to spend Rs. 3,000 on the work before the end of the official year, failed to do so, owing to the allotment having been given late in the year.

41. The following minor works were carried out:—

(1) The drainage system of the European Infantry barracks was improved at a cost of Rs. 1,703.

- (2) The coffee-shop of the Royal Artillery was re-roofed with Mangalore tiles at a cost of Rs. 948, and a temporary forge and shoeing shed erected for the Royal Artillery at a cost of Rs. 845.

42. **Nilgiris.**—The following works were completed or in progress :—

- (1) The bakery at Wellington was nearly completed; estimate Rs. 35,850, expenditure Rs. 30,132.
- (2) Two lying-in wards were added to the station hospital at Wellington at a cost of Rs. 2,909; estimate Rs. 3,036.
- (3) Quarters for a barrack sergeant at Wellington were commenced; estimate Rs. 7,318, expenditure Rs. 3,213.
- (4) The Lawrence Asylum buildings were improved at a cost of Rs. 4,595; estimate Rs. 5,790.
- (5) Repairs were executed to the Lawrence Asylum and the military buildings at a cost of Rs. 9,246 and Rs. 7,040, respectively.

43. **Coimbatore.**—The following minor original works were completed :—

- (1) Constructing two cisterns to hold water for fire-engines; fixing a weigh-bridge and constructing a shed over it in the stud lines; and improving the sepoys' lines at the Remount Depot, Matigiri. The estimates amounted to Rs. 1,330, 172 and 230, respectively.
- (2) Improving the rest-house at Pôdanûr; estimate Rs. 1,190.

44. Repairs to the military buildings at the Remount Depot at Matigiri and to the rest-houses at Pôdanûr and Mettupalayam were carried out at an outlay of Rs. 5,606.

45. **West Coast.**—The entire project of accommodating troops at Malapuram was completed according to the revised estimates. The buildings finished and occupied during the year were—

1. Block No. 2 with out-houses.
2. Ward for contagious diseases.
3. All the covered passages.
4. The drains.
5. Converting the wood godown into a bakery.
6. Cattle and sheep pen.

46. The allotment for several works in connection with the barracks was Rs. 8,315, of which Rs. 7,691 were expended, bringing the total expenditure at the end of the year to Rs. 1,22,672 against the estimate of Rs. 1,80,212.

47. The following works were completed or in progress :—

- (1) Improvements to the elephant shed at Malapuram were in progress; estimate Rs. 2,060, expenditure Rs. 810.
- (2) A store-room for the Madras Infantry regiment stationed at Quilon was almost completed; outlay Rs. 6,653 against an estimate of Rs. 9,334.
- (3) The bomb-proof roof of the military magazine at Quilon was covered with an additional tiled roof to prevent the leakage frequently complained of. The lightning conductor of the magazine was renewed. The aggregate cost of the two works amounted to Rs. 3,153 against an estimate of Rs. 3,880.
- (4) The old jailor's quarters at Calicut were improved; estimate Rs. 1,200, outlay Rs. 1,076.
- (5) The family quarters of No. 2 block of West Hill barracks at Calicut were adapted for quarters for the Commissariat Sergeant and store-room; estimate Rs. 650, outlay Rs. 599.
- (6) The lightning conductors on the magazine at West Hill barracks were renewed at an outlay of Rs. 647 against an estimate of Rs. 730.
- (7) The supplemental estimate of Rs. 1,170 for converting the old cells in the Cannanore Fort into a double magazine and providing shelves and racks, &c., was worked out, bringing the total outlay to Rs. 3,233 against the estimate of Rs. 3,590. The expenditure under repairs, military, amounted to Rs. 32,307 against an allotment of Rs. 33,497.

48. **North Arcot.**—No major or minor works were carried out during the year.

49. A sum of Rs. 2,977 was spent under repairs, including the usual annual contribution of Rs. 1,000 paid to the municipality on account of the maintenance of Vellore cantonment roads.

50. **South Arcot.**—Rupees 425 were spent out of a grant of Rs. 444 on account of compensation for quarters for three military apprentice overseers and rent of quarters for the Sergeant Instructor of the South Indian Railway Volunteer Rifle Corps.

51. **Chingleput.**—The following works in connection with the new Royal Artillery barracks at the Mount were completed :—

(a) Barrack, east block.	(e) Wheeler shop.
(b) Barrack, west block.	(f) Store-room.
(c) Three wash-houses.	(g) Latrine.
(d) Three kitchens.	

52. The construction of a recreation-room, coffee-shop, plunge-bath, and drains at the barracks of the Artillery at the Mount was completed. The total outlay was Rs. 1,37,694 against an estimate of Rs. 1,46,910.

53. Granite head and heel stones were provided and three gearing rooms were constructed in the stables of the Royal Artillery at St. Thomas' Mount. The total outlay was Rs. 22,914 against an estimate of Rs. 21,300.

54. The construction of a coffee-shop with kitchen for the upper storey barracks, St. Thomas' Mount, was in progress. Rupees 2,165 were expended on an estimate of Rs. 6,690.

55. Seven minor new works were completed at a cost of Rs. 1,232.

56. The expenditure on minor new works and repairs was Rs. 28,851, and the total expenditure under repairs, including barrack-master's petty repairs, compensation for quarters, &c., was Rs. 36,236.

57. The principal buildings repaired were—

- (1) The south barracks at the Mount; estimate Rs. 3,020, outlay Rs. 2,817.
- (2) Garrison store-room in the staff office at Poonamallee; estimate Rs. 540, outlay Rs. 499.
- (3) Station hospital and out-houses at Poonamallee; estimate Rs. 860, outlay Rs. 782.
- (4) Three blocks of the west barracks and its out-houses at Mount; estimate Rs. 1,360, outlay Rs. 1,355.
- (5) Station hospital and its out-houses at Mount; estimate Rs. 910, outlay Rs. 882.
- (6) Roof of Sergeant-Major's quarters at Poonamallee; estimate Rs. 790, outlay Rs. 742.
- (7) Renewing soil of stables and horse lines of 2/1st Battery, Royal Artillery, Mount; estimate Rs. 6,050 and outlay Rs. 5,908.

58. **Presidency and Bangalore.**—The following works were completed :—

- (1) The conversion of A block family quarters, Fort St. George, into single men's barracks; estimate Rs. 15,877, outlay Rs. 5,955.
- (2) Additional work to the coast batteries and the maintenance of the casuarina plantations on the beach for the purpose of screening the coast batteries, at a cost of Rs. 1,965; total outlay Rs. 8,184, estimate Rs. 8,240.
- (3) Guard-rooms, kitchens and latrines for the coast batteries; estimate Rs. 6,025, outlay Rs. 5,843.
- (4) Improvements to the armament, Fort St. George; estimate Rs. 42,035, outlay Rs. 37,597.
- (5) The reconstruction of a wheel-wright shop at the Gun Carriage Factory; estimate Rs. 7,370, outlay, Rs. 6,597.
- (6) Improvements to the wash-houses at the parade barracks, Bangalore; estimate Rs. 12,500; outlay Rs. 10,720.

(7) Additions to the military prison at Agram; estimate Rs. 8,325, outlay Rs. 7,478.

(8) Cavalry stables at Agram for 66 additional horses; estimate Rs. 5,930, outlay Rs. 5,560.

59. The following works were in progress:—

(1) Conversion of racket-court in Fort St. George into a covered gymnasium; estimate Rs. 11,890, outlay Rs. 2,320.

(2) Improving the water-supply of Fort St. George; estimate Rs. 6,445, outlay Rs. 6,248.

(3) Public buildings for a regiment of Native Infantry on the Arab lines plateau at Bangalore; estimate Rs. 21,636, outlay Rs. 15,188.

60. Twenty-one minor new works at the Presidency and thirty-six at Bangalore were commenced and completed during the year at a cost of Rs. 10,432.

61. Two hundred and ninety-two repair works at the Presidency and two hundred and five at Bangalore were carried out during the year.

62. Payments, amounting to Rs. 19,297, were made to the Madras Municipality on account of house, water, and light taxes on Government military buildings outside Fort St. George, and Rs. 6,000 on account of maintenance and repairs to the esplanade and Fort beach roads.

63. At Bangalore Rs. 1,200 and Rs. 6,300 were paid to the Cantonment Municipality for the conservancy of the main sewer and the maintenance of the military roads.

64. The total outlay under repairs was Rs. 1,21,486 at the Presidency and Rs. 48,785 at Bangalore.

65. The most important of the repair works that were undertaken in the Presidency during the year were—

(1) Repairing and lime-washing walls of European Infantry barracks, Fort St. George; estimate Rs. 3,690, outlay Rs. 1,389.

(2) Re-roofing mess-house, Fort St. George; estimate Rs. 6,400, outlay Rs. 4,107.

(3) Repairing and lime-washing public quarters at the Gun Powder Factory; estimate Rs. 3,570, outlay Rs. 811.

(4) Thorough repairs to the Government granary on the beach; estimate Rs. 8,800, outlay Rs. 6,802.

(5) General repairs and covering the floor of the Army Clothing Department office with asphalt; estimate Rs. 2,670, outlay Rs. 2,313.

(6) Supplying gravel to the parade-ground and sepoy's court-yards of the Native Infantry lines, Perambur; estimate Rs. 6,490, outlay Rs. 6,308.

66. The following repair works were carried out in Bangalore:—

(1) Painting doors and windows of Cavalry Agram barracks; estimate Rs. 3,975, outlay Rs. 3,918.

(2) Painting doors and windows of Royal Artillery barracks; estimate Rs. 2,487, outlay Rs. 2,378.

(3) Renewing filtering materials of the cistern at the Ulsoor Rock; estimate Rs. 1,783, outlay Rs. 1,742.

(4) Renewing filtering materials of the cistern at Dhobie's Wells; estimate Rs. 1,577, outlay Rs. 1,516.

(5) Painting doors and windows of Ulsoor Royal Horse Artillery barracks; estimate Rs. 1,782, outlay Rs. 1,746.

67. **Trichinopoly.**—A sum of Rs. 4,532 was expended in repairing the military buildings and in paying compensation for quarters in the other divisions in the circle.

68. The construction of public buildings for a regiment of Native Infantry was continued, a magazine and cells having been under progress; the outlay was Rs. 1,753 against a grant of Rs. 3,593.

69. The construction of stone drains for the new lines mentioned above, for which a grant of Rs. 1,000 was given, could not be commenced, the estimate not having been sanctioned. The construction of these drains has since been ordered to be deferred.

II.—IMPERIAL—CIVIL WORKS.

70. **Vizagapatam.**—Repairs to the post offices at Vizagapatam, Narsapatnam and Koraput were completed.

71. The construction of a post office building at Sálúr, for which an estimate of Rs. 2,000 was sanctioned, was in progress. The outlay amounted to Rs. 311.

72. **Godavari (East).**—A sum of Rs. 735 (of which Rs. 306 were spent in the previous year) was expended on improvements to the post office building at Bhadráchalani against an estimate of Rs. 830. The work was fully completed.

73. An estimate, amounting to Rs. 34,135, was sanctioned for the construction of quarters for signallers to the Telegraph department at Cocanada. The work was completed at a total cost of Rs. 30,554, the expenditure during the year being Rs. 5,634.

74. Improvements to the telegraph office at Cocanada were carried out at a total cost of Rs. 3,821, against an estimate of Rs. 4,000.

75. **Kistna (East).**—A well in the compound of the Bezváda post office was constructed during the year. The outlay amounted to Rs. 307 against an estimate of Rs. 280. After three-fourths of the work had been completed the estimate required revision, owing to clay having been met with. The repairs to the telegraph offices at Bezváda and Masulipatam were executed.

76. **Kistna (West).**—Rupees 804 were expended in completing the Duggirala post office; estimate Rs. 900, allotment Rs. 757. The telegraph office at Gantúr was repaired.

77. **Nellore.**—A sum of Rs. 842 was spent on the construction of quarters for the postmaster at Gúdúr; estimate Rs. 1,260, grant Rs. 1,232. The work was almost completed.

78. The post offices at Káivali and Kristnapatam were repaired during the year, but the repairs of that at Gúdúr could not be commenced till the quarters for the postmaster were finished.

79. **Bellary.**—The walls of the post office at Anantapur were raised to a height of 11 feet, and out-houses nearly finished; but the work was suspended pending sanction to the construction of a telegraph office-room, which it was proposed to attach to the post office. The expenditure amounted to Rs. 1,922 against the estimate of Rs. 4,051.

80. **Coimbatore.**—Repairs to five post offices were carried out during the year at an outlay of Rs. 762.

81. **Nilgiris.**—The Ootacamund telegraph office was repaired at a cost of Rs. 564, and the Wellington post office at an outlay of Rs. 158.

82. **West Coast.**—Certain vacant buildings in the Fort at Tellicherry (late district jail) were converted into a post office and postmaster's quarters. The estimate amounted to Rs. 1,810 and the expenditure to Rs. 1,738. The work was completed. Rupees 637 were spent in repairs to eight postal buildings.

83. **North Arcot.**—A sum of Rs. 76 was spent on the construction of a well for the Punganúr post office.

84. Rupees 350 were spent on repairs to postal buildings and Rs. 41 on repairs to telegraph buildings.

85. **South Arcot.**—A sum of Rs. 148 was expended on repairs to postal buildings.

86. **Presidency and Bangalore.**—The out-offices for the combined post and telegraph offices at Madras were completed by the conversion of the Commissariat

mule stables on the foreshore into stables for the post office and the construction of quarters for the sergeant in charge of the mails. The total expenditure on the combined offices amounted to Rs. 6,89,931 while the estimate was Rs. 6,92,094.

87. Under minor works an estimate of Rs. 2,790 was sanctioned for additions to the lightning conductors of the post and telegraph office to bring them into accordance with the new code of regulations, and other minor additions required by the departmental officers.

88. The following repairs were carried out:—

- (1) Repairing and white-washing walls of the Mylapore post and telegraph offices; estimate Rs. 155, outlay Rs. 152.
- (2) Repairing and white-washing the Shoolay post and telegraph offices, Bangalore; estimate Rs. 186, outlay Rs. 172.

89. **Trichinopoly.**—Slight improvements were carried out to the post office at Teppakulam and the sub-post office at Trichinopoly at a cost of Rs. 45 and Rs. 30, respectively.

90. **Tanjore.**—Out of an allotment of Rs. 1,292, Rs. 1,079 were utilized. The chief item on which short outlay was incurred was the extension of Kumbakonam post office. The work was completed.

91. **Madura.**—The construction of a post office at Butlagundu was proceeded with. Out of the grant of Rs. 795, Rs. 795 were spent and the work was nearly completed.

92. An outlay of Rs. 109 was incurred in repairing the post offices at Kovilur and Ammayanayakanur.

93. **Ramnad.**—The grant of Rs. 751 was fully spent in completing the additions to the post office building at Ramnad.

94. **Tinnevelly.**—An expenditure of Rs. 437 was incurred on repairing the post offices at Palamcottah and Srivaikuntham. The former was completed and the latter in progress.

III.—PROVINCIAL—CIVIL BUILDINGS.

95. **Ganjam.**—A building, for the residence and office of the Executive Engineer at Chicacole, was purchased for a sum of Rs. 1,250, and thoroughly repaired; estimate Rs. 3,440, outlay Rs. 3,606.

96. **Vizagapatam.**—The construction of a residence for the Assistant Superintendent of Police at Jeypore was completed; estimate Rs. 15,350, outlay Rs. 15,068.

97. An expenditure of Rs. 9,017 was incurred in connection with the provision of additional accommodation to the huzur treasury at Vizagapatam against an estimate of Rs. 9,360. The work was completed and the building handed over to the Revenue Department.

98. The following works were in progress:—

- (1) A police station-house at Komarada; estimate Rs. 1,520, outlay Rs. 426.
- (2) Additions and alterations to the deputy tahsildar's office at Palkonda and the construction of a police station-house in its compound; estimate Rs. 4,920, outlay Rs. 1,876.
- (3) Police station-house at Koraput; estimate Rs. 3,895, outlay Rs. 2,079.
- (4) Additions to the deputy tahsildar's office at Bimlipatam; estimate Rs. 1,040, outlay Rs. 947.
- (5) Improvements to the district court-house at Vizagapatam; estimate Rs. 1,861, outlay Rs. 2,231. The Executive Engineer stated that it was found necessary to do more work than was estimated for: hence the excess.

99. About Rs. 24,000 were reserved to meet the cost of the iron bridges on the Potinghi ghât road ordered from and to be paid in England, but no notice has been received that this amount was utilised.

100. Under Repairs a short outlay of Rs. 1,000 was due chiefly to a saving in repairs to warders' lines in the Lunatic Asylum, Waltair, it having been decided not to put teak in the roofs of these huts.

101. **Godavari (East).**—The following works were completed or in progress :—

- (1) Constructing a district munsif's court-house at Peddapuram; estimate Rs. 10,300, outlay Rs. 11,847.
- (2) Sub-magistrate's cutcherry at Pithapuram; estimate Rs. 8,983, outlay Rs. 9,576.
- (3) Water-supply and improvements to the existing drainage of the central jail at Rajahmundry; estimate Rs. 33,030, outlay Rs. 30,748.
- (4) Constructing registrar's office at Cocanada; estimate Rs. 4,700, outlay Rs. 4,598.
- (5) Constructing a sub-magistrate's cutcherry at Tuni; estimate Rs. 9,436, outlay Rs. 7,256.
- (6) Materials for the construction of a dispensary at Bhadrachalam were being collected; estimate Rs. 4,246, outlay Rs. 839.
- (7) Constructing a residence at Dowlaiswaram for the Superintending Engineer; estimate Rs. 22,400, outlay Rs. 21,697.
- (8) Constructing a residence for the Executive Engineer at Dowlaiswaram; estimate Rs. 12,500, outlay Rs. 9,114. Work in progress.
- (9) Improvements to the sea-customs buildings at Cocanada; estimate Rs. 4,310, outlay Rs. 4,820.
- (10) Constructing a sub-registrar's office at Pithapuram; estimate Rs. 2,300, outlay Rs. 2,315.
- (11) Constructing quarters for the hospital assistant attached to the Public Works Department dispensary at Dowlaiswaram; estimate Rs. 605, outlay Rs. 540.
- (12) Extension to the Provincial College, Rajahmundry; estimate Rs. 1,620, outlay Rs. 1,526.
- (13) Constructing a second-class station-house at Bhadrachalam; estimate Rs. 1,826, outlay Rs. 1,769.

102. **Godavari (West).**—A sub-registrar's office at Pentapad was completed; estimate Rs. 2,710, outlay Rs. 2,679.

103. The following works were in progress :—

- (1) Sub-registrar's office at Tanuku; estimate Rs. 3,090, outlay Rs. 268.
- (2) Taluk cutcherry at Tanuku; estimate Rs. 21,420, outlay Rs. 20,458.
- (3) Taluk cutcherry at Bhimavaram; estimate Rs. 22,650, outlay Rs. 22,299.

104. **Godavari (Central).**—The construction of a sub-registrar's office at Razole was in progress; estimate Rs. 2,750, expenditure Rs. 2,205.

105. **Kistna Eastern Division.**—The construction of a residence and office for the Superintending Engineer was completed, with the exception of the latrines; estimate Rs. 26,775, expenditure Rs. 27,961. Out of an allotment of Rs. 1,000 for raising the compound round the Superintending Engineer's residence, Rs. 401 were spent.

106. An allotment of Rs. 1,170 was granted for the addition of a room to the new treasury in the Gudivada taluk office. Nothing was spent during the year owing to the late receipt of the allotment.

107. A sum of Rs. 800 was allotted for the construction of head constables' and constables' huts at Bezvada. Rs. 408 were spent in collecting materials and the work had then to be stopped owing to the refusal of the Church Mission Society to give up the land in their school compound, where it was proposed to build the huts.

108. Repairs to the following were completed :—

- | | |
|----------------------------|-----------------------------------|
| (1) The Collector's house. | (3) Eastern division office. |
| (2) St. Mary's Church. | (4) Northern sub-division office. |

109. **Kistna Western Division.**—Trees were planted in the compound of the division office and a sum of Rs. 33 spent on the maintenance against a grant of Rs. 115.

26295

110. Slight repairs to the division office at Duggirala and the jail buildings at Guntūr were carried out.

111. **Nellore.**—The following works were completed during the year :—

- (1) Sub-registrar's office at Gūdūr.
- (2) Police huts at Kandukūr.
- (3) Extension of the sawyers' shed, Nellore workshops.

The sub-registrar's office at Addanki was in progress.

112. Under Repairs the following buildings were attended to :—

- (1) Hill bungalow at Ongole.
- (2) Sub-Collector's bungalow at Ongole.
- (3) Police Assistant Superintendent's bungalow at Ongole.
- (4) Kodavulur bungalow.
- (5) Collector's bungalow at Nellore.
- (6) Taluk cutcherry and sub-jail at Kandukūr.
- (7) Police station-house at Nāyudupet.
- (8) Deputy tahsildar's cutcherry and sub-jail at Venkatagiri.
- (9) Taluk cutcherry at Atmakūr.
- (10) District jail, Nellore.

113. **Bellary.**—The second-class taluk office at Siruguppa was completed during the year; but final payment was not made owing to the delay on the contractor's part in rectifying defects in the roof, which caused the measurements to be postponed. The expenditure amounted to Rs. 12,704, against the estimate of Rs. 12,680.

114. The Collector's office at Anantapur was completed with the exception of a stair case to the upper story, parapets, second coat of plaster, and wood oiling, fitting doors and ventilators, laying slabs to upper verandah, and substituting iron railing for masonry parapet walls. The progress of the work was not quite satisfactory owing to the contractor's failure to make proper arrangements. The expenditure on the work amounted to Rs. 49,902, against the estimate of Rs. 55,000.

115. The Head Assistant Collector's office at Penukonda was completed and handed over. The expenditure amounted to Rs. 16,091, against the estimate of Rs. 16,682.

116. The second-class taluk office at Bukkapatnam was completed and occupied during the year. The expenditure amounted to Rs. 12,777, against the estimate of Rs. 12,200.

117. The old structure in the Collector's residence at Anantapur was removed; but nothing more could be done as no contractor came forward to take up the work, and it was not possible to arrange for the execution of the work departmentally within the short time left to close the official year. The expenditure on the work amounted to Rs. 15,997, against the estimate of Rs. 28,190.

118. Improvements to the Collector's office at Bellary were in progress. The walls of the rooms in east and west wings were completed to a height of 8 feet above basement level; and door and window frames were fixed. The expenditure amounted to Rs. 8,518, against the estimate of Rs. 47,540.

119. The undermentioned minor new works were carried out :—

- (1) Enlarging the Collector's printing office at Bellary; estimate Rs. 1,745, outlay Rs. 1,719;
- (2) A police hospital at Hospet at a cost of Rs. 653;
- (3) A sub-registrar's office at Hadgally for Rs. 2,353;
- (4) A sub-registrar's office at Hospet at an outlay of Rs. 2,167;
- (5) The civil cemetery at Bellary was provided with a gateway and robing-room at a cost of Rs. 430;
- (6) Out-houses for the Head Assistant Collector's bungalow at a cost of Rs. 460; and
- (7) A strong-room in the taluk office at Kūdligi at a cost of Rs. 603.

120. **Cuddapah.**—The construction of a taluk office at Vāyalpād was in fair progress. The expenditure amounted to Rs. 9,910, against the estimate of Rs. 25,700.

121. Work was in progress on the Collector's office at Cuddapah. The foundation and basement of the printing office were finished, and the superstructure was in progress. The foundation of the main buildings was nearly completed; estimate Rs. 1,43,741, expenditure Rs. 37,695.

122. Of the sanctioned additions and alterations to the district jail at Cuddapah, the female ward was almost completed and the male ward No. 1 completed, except flooring and painting. The expenditure amounted to Rs. 14,741, against the estimate of Rs. 31,900.

123. The number of works below Rs. 2,500 that were carried out during the year was fifteen, the outlay being Rs. 6,051.

124. **Kurnool.**—The taluk office at Nandyal was in slow progress owing to difficulty in procuring labor on account of extensive railway works. The expenditure amounted to Rs. 15,662, against the estimate of Rs. 34,676.

125. The sub-divisional officer's quarters at Cumbum were completed on the revised estimate of Rs. 4,794, the expenditure amounting to Rs. 4,770.

126. **Nilgiris.**—A sum of Rs. 3,566 was spent in providing stone steps to the terraces, and guttering to the roof with masonry drains at Government House, Ootacamund.

127. The Protestant church at Wellington was completed during the year within the amount of the revised estimate (Rs. 47,810); the outlay for the year amounted to Rs. 9,574.

128. A Bench Magistrates' court at Kotagiri was commenced and nearly completed; estimate Rs. 8,000, expenditure Rs. 5,442.

129. Of the undermentioned works, the first five were completed, the others were in progress:—

- (1) Construction of an exercise yard for European convicts in the Ootacamund jail; outlay Rs. 4,472, estimate Rs. 5,799.
- (2) The conversion of Rowe's bungalow into a police station, the outlay for the year being Rs. 5,168. The total expenditure amounted to Rs. 9,184, against an estimate of Rs. 9,170.
- (3) Improvements to the Executive Engineer's office at Ootacamund.
- (4) Provision of drains to the police lines at Ootacamund and to the Coonoor cemetery.
- (5) Repairs to Government House, on which a sum of Rs. 9,177 was spent.
- (6) The new buildings for Brecks' Memorial School were in progress; estimate Rs. 38,180, outlay Rs. 21,750.
- (7) The construction of a Roman Catholic church at Wellington; estimate Rs. 30,526, expenditure Rs. 7,000.
- (8) Construction of a new police station at Naduvatam.

130. Four minor works were carried out during the year and the buildings on Mountstuart at Ootacamund were repaired at a cost of Rs. 4,011.

131. **Coimbatore.**—A new room for the huzur treasury at Salem was constructed at a cost of Rs. 2,876.

132. The following works were in progress:—

- (1) Alterations and additions to the quarters of the Superintendent, Central Jail, Salem; estimate Rs. 3,600, outlay Rs. 2,604.
- (2) Construction of quarters for the deputy jailor attached to the Central Jail, Salem; estimate Rs. 3,660, outlay Rs. 2,852.
- (3) Reconstruction of a portion of the district munsif's court at Namakal; estimate Rs. 3,595, outlay Rs. 2,514.
- (4) The purchase and improvement of the Police Assistant Superintendent's residence at Tirupatūr; estimate Rs. 4,768, outlay Rs. 4,673.
- (5) The construction of a close prison at Coimbatore; estimate Rs. 19,582, expenditure of the year Rs. 1,534.
- (6) Improvements to the central jail at Coimbatore; estimate Rs. 5,745, expenditure Rs. 4,474.

133. Five minor works were undertaken and fully completed during the year at an outlay of Rs. 1,892.

134. Thirty-five repair works were carried out during the year at a cost of Rs. 3,482.

135. **West Coast.**—The district munsif's court and the record-room at Calicut, which remained incomplete at the end of the previous year, were finished, and with these buildings the whole project of the law courts at Calicut as originally designed was completed at a cost of Rs. 1,03,918, against an estimate of Rs. 1,04,570. The buildings were handed over to the Judicial Department.

136. Improvements to the Government Church at Cochin, which were commenced in the previous year but stopped pending sanction to the estimate, were resumed. Rs. 15,052 (which includes an outlay of Rs. 5,519 incurred in the previous year) were spent, against an estimate of Rs. 20,680.

137. Satisfactory progress was made with the new public offices at Ponani. The year's allotment, Rs. 20,000, was fully expended. The total expenditure up to the end of the year amounted to Rs. 50,784, against the estimate of Rs. 74,521.

138. The following works were in progress :—

- (1) A residence for the Assistant Superintendent of Police at Malapuram; estimate Rs. 13,660, expenditure Rs. 7,222.
- (2) A sub-registrar's office at Chevayur; estimate Rs. 3,020, expenditure Rs. 1,400.
- (3) Improvements to the munsif's court at Betanad; allotment, Rs. 2,000 was fully worked out; estimate Rs. 4,295.
- (4) Additions and improvements to the Police Superintendent's office at Mangalore; the full allotment of Rs. 3,000 was spent; estimate Rs. 9,200.
- (5) A sub-registrar's office at Puttur and another at Udipi; expenditure Rs. 1,000 and Rs. 1,200, and estimates Rs. 3,120 and Rs. 3,370, respectively.
- (6) A sub-registrar's office at Mannarghat, for which an estimate of Rs. 2,450 was sanctioned.

139. The Head Assistant Collector's residence at Coondapoor, an incomplete work of the previous year, was completed and handed over to the Revenue Department. The total expenditure was Rs. 16,680 against an estimate of Rs. 17,000, the outlay for the year being Rs. 8,915, against an allotment of Rs. 9,235.

140. The following works were completed :—

- (1) The conversion of a vacant building in the fort at Tellicherry (late jail) into a Sub-Collector's cutcherry. Outlay amounted to Rs. 1,665.
- (2) Additions and alterations to the district munsif's court-house at Paynad, commenced in the previous year. The total outlay was Rs. 1,509, against an estimate of Rs. 1,520.
- (3) The conversion of the sweepers' quarters at the lunatic asylum, Calicut, into a patients' ward. The expenditure amounted to Rs. 2,268, against an estimate of Rs. 2,740.
- (4) The erection of a temporary shed for the accommodation of 36 patients at the lunatic asylum at Calicut for Rs. 850.

141. A sum of Rs. 6,683 was spent on repairs, the chief items being :—

- (1) Repairing the roof of St. John's church at Cannanore, Rs. 1,715;
- (2) Rebuilding the turret of the district munsif's court-house at Tellicherry, Rs. 475;
- (3) Repairing the record room of the huzur cutcherry at Calicut, Rs. 572;
- (4) Repairing the Malapuram church and belfry, Rs. 650;
- (5) Repairing the taluk cutcherry at Manjeri, Rs. 1,580.

142. **North Arcot.**—The construction of a sub-magistrate's cutcherry with out-houses at Arkonam was in progress. The outlay was Rs. 8,186, against an estimate of Rs. 14,245.

143. Improvements to the sub-magistrate's catcherry at Punganūr were put in hand, and an outlay of Rs. 2,410 was incurred, on an estimate of Rs. 4,480.

144. Seven minor new works were in progress, of which five were completed. The total outlay amounted to Rs. 7,484.

145. Twelve repair works were carried out at a cost of Rs. 5,501.

146. **South Arcot.**—A sum of Rs. 1,000 was spent on collecting materials for the construction of a sub-registrar's office at Villupuram; estimate Rs. 3,020.

147. Eight minor new works, on which a sum of Rs. 2,636 was spent, were in progress, of which three were completed, viz. :—

- (1) Sub-registrar's office at Oolundurpett.
- (2) Conversion of the office of the Assistant Superintendent of Police into a sub-registrar's office at Tirukoilur.
- (3) Lascars sheds in the compound of the South Arcot divisional office, Cuddalore.

148. Under Repairs a sum of Rs. 1,985 was spent.

149. A contribution by the Cuddalore Municipality of Rs. 60 for survey establishment in connection with the preparation of an estimate for a bridge across the Gadilam river was spent. A sum of Rs. 14, being the balance of a contribution given by the same municipality in 1885-86 for repairs to the powder magazine at Munjakuppam, was utilized in refixing the lightning conductor.

150. **Chingleput.**—The upper-storey of the Agricultural College at Saidāpet, for which an estimate of Rs. 18,370 was sanctioned in March 1885, was commenced and completed, with the exception of the tower and lightning conductors. The expenditure was Rs. 16,096.

151. Seven minor new works were completed at a total cost of Rs. 6,974.

152. The buildings at Government House, Guindy Park, and other buildings were repaired at a total outlay of Rs. 15,502.

153. **Presidency and Bangalore.**—An expenditure of Rs. 4,718 was incurred on materials for the alterations to the roof of the north and south wings of the Public Works offices at Chepāk. The sanctioned estimate was Rs. 5,035. The work was completed during the year. The saving was chiefly due to the utilization of materials in the old roof.

154. An estimate of Rs. 5,764 was sanctioned for the construction of tiffin-rooms for the clerks of the Revenue Board offices and students of the College of Engineering. The old tiffin-rooms, which stood on the south side of the College of Engineering, an old Carnatic building, a part of which was in a dilapidated state, were pulled down to make room for the extensions to the College of Engineering and a new range of tiffin-rooms was constructed on another site. By utilizing a large quantity of the serviceable materials belonging to the old tiffin-rooms a saving was effected on the estimate. The total expenditure amounted to Rs. 5,215.

155. The construction of covered passages at the new Ophthalmic hospital at Madras was completed. The outlay amounted to Rs. 9,192, against an estimate of Rs. 11,010. An expenditure of Rs. 616 was incurred for laying out the grounds with plants and shrubs.

156. A total expenditure of Rs. 10,640 was incurred on repairs to the Lying-in-hospital at Madras. The general repairs chiefly consisted in replastering the lower portions of wards with Portland cement, painting wood and iron works, washing, &c. The special repairs consisted in taking up and relaying the tiled roofing with a lining of Willesdon paper. The buildings were placed in excellent order.

157. The construction of a latrine, on the bank of the Buckingham canal, west of the Senate House, which was commenced in 1885-86, was completed; expenditure Rs. 6,390; estimate Rs. 6,600.

158. The work of constructing cook-houses and fencing the compounds of the several quarters attached to the College of Engineering was completed; expenditure Rs. 3,851; estimate Rs. 3,872.

159. Alterations and additions to the Presidency College, especially to the physical science department, were carried out. The outlay amounted to Rs. 2,775.

160. The estimate, amounting to Rs. 27,139, for improvements to the roads and maintenance of trees and plants in the Chepāk park, was worked out. Most of the expenditure was incurred in 1886-87, and the total outlay amounted to Rs. 27,802.

161. An estimate of Rs. 2,456 was sanctioned for the repair and maintenance of the roads in Chepāk park; the expenditure amounted to Rs. 2,463.

162. A sum of Rs. 10,529 was spent during the year for minor (original) works, principally—

- (1) Making a road in the open land north of the Ophthalmic hospital.
- (2) Cleaning and levelling the site of the old fishing village.

163. Rs. 17,717 were spent on repairs to buildings during the year, including the maintenance of the foreshore and ride at the south beach and the repairs executed to the old eye infirmary; Rs. 4,809 were paid on account of municipal taxes for the Public Works Department offices and Government brickfields.

164. New seats were provided to St. Matthias' Church, Vepery, at a cost of Rs. 2,404; estimate Rs. 2,930.

165. Rupees 3,937 were spent on improvements to, and extension of, the verandah of the main record-room, Government office, Fort St. George; estimate Rs. 4,290.

166. The construction of the city reserve police lines at Pudupet was commenced, and an outlay of Rs. 5,461 was incurred against the estimate of Rs. 27,785 in the collection of materials.

167. The construction of an upper storey to the office of the Deputy Commissioner of Police was commenced, and an outlay of Rs. 2,537 was incurred in the collection of materials against an estimate of Rs. 10,290.

168. The following works at Her Majesty's Penitentiary were in progress:—

- (1) Quarters for the hospital assistants; estimate Rs. 5,774, outlay Rs. 4,960.
- (2) A new work shed; estimate Rs. 3,200, outlay Rs. 2,631.
- (3) New roofs to the close prison cells; estimate Rs. 11,200, outlay Rs. 2,290.
- (4) Twelve solitary cells, commenced in the previous year, were completed; estimate Rs. 5,750, outlay Rs. 5,308.

169. A sum of Rs. 1,907 was spent on an estimate of Rs. 2,711 for ornamenting the ceilings of the nave of St. George's Cathedral, and the work was postponed for completion in 1887-88.

170. A commencement was made on the new gate-way for St. Mary's Cemetery, and Rs. 3,302 were spent on an estimate of Rs. 6,285.

171. The property known as the Government Female Normal School at Egmore was purchased for Rs. 12,000.

172. A cottage for twelve lunatics and a block of six rooms for native criminals at the lunatic asylum were commenced and completed at an outlay of Rs. 8,862 against an estimate of Rs. 9,630.

173. A sum of Rs. 5,143 was spent at Madras on furniture for Government-house at Madras, Guindy and Ootacamund.

174. Thirty-two minor new works were carried out at a cost of Rs. 10,098.

175. One hundred and twenty-five repair works at Madras and twelve in Bangalore were carried out. None of the works at Bangalore were of much importance.

176. The following are the more important repairs of those carried out in Madras:—

- (1) Repairs to the Government Secretariat buildings, Fort St. George; estimate Rs. 3,635, outlay Rs. 1,857.
- (2) General repairs to Government House, Barmington Hall, Marine Villa, and out-houses attached; estimate Rs. 14,300, outlay Rs. 14,851.
- (3) Repairs to the Lock Hospital, Black Town, Madras; estimate Rs. 6,755, outlay Rs. 4,249.
- (4) Repairs to the roofs of the Public Works Workshops and Stores and renewal of the roof of the Workshop foundry; estimate Rs. 6,885, outlay Rs. 5,495.

177. A sum of Rs. 536 was spent on alterations and additions to the petroleum shed on the beach which was completed last year.

178. Under repairs a sum of Rs. 298 was received from the Secretary, Biden Home Committee, for carrying out repairs to the Home, and Rs. 3,422 from the Secretary, Military Female Orphan Asylum, for carrying out certain works to the asylum buildings. Out of the first mentioned contribution, a sum of Rs. 252 was spent and the work completed. The other contribution was received only in March.

179. **Trichinopoly.**—The construction of a district jail in Trichinopoly, for which a grant of Rs. 11,500 was sanctioned, was in progress. The expenditure amounted to Rs. 11,131.

180. The sub-registrar's office at Manaparai was completed at a cost of Rs. 2,184, the sanctioned estimate being Rs. 2,090.

181. The following repairs were carried out:—

- (1) Re-roofing block No. 1, Central jail. The repairs were nearly completed at an outlay of Rs. 2,586.
- (2) District munsif's court at Ariyalūr, on which a sum of Rs. 560 was spent.

182. **Tanjore.**—The following works were completed:—

- (1) A district jail at Tanjore; estimate Rs. 2,11,100, outlay Rs. 2,02,771.
- (2) A police station-house at Tanjore; estimate Rs. 6,740, expenditure Rs. 7,113.
- (3) Compound mud-walls of the warders' huts attached to the district jail, at a cost of Rs. 1,195, against an estimate of Rs. 1,420.
- (4) Alterations to a portion of the old taluk cutcherry for the accommodation of the sub-registrar's office at Triviar; estimate Rs. 1,220, outlay Rs. 1,225.

183. The following works were in progress:—

- (1) A combined court-house for the district munsifs of Kumbakonam and Valangiman; estimate Rs. 34,342, expenditure Rs. 7,607.
- (2) A first-class taluk cutcherry at Kumbakonam; estimate Rs. 19,240, expenditure Rs. 249.
- (3) Extensions to the police station-house at Kumbakonam; estimate Rs. 2,700, outlay Rs. 1,379.
- (4) Police station at Kornad, in the Mayavaram taluk; estimate Rs. 1,130, expenditure Rs. 1,102.
- (5) Construction of six huts for the land custom police at Nalladay; estimate Rs. 1,950, expenditure for land compensation Rs. 141. Work held in abeyance.

184. Repairs to the buildings below mentioned were put in hand:—

- (1) District court, Tanjore, to which lightning conductors were added. Work completed; estimate Rs. 1,127.
- (2) Taluk cutcherry at Shiyāli in progress; estimate Rs. 1,240.

185. **Negapatam.**—An estimate, amounting to Rs. 1,200, was sanctioned for extending the Government cemetery at Negapatam; outlay Rs. 459.

186. The compound of the Executive Engineer's office at Kadambady was metalled at a cost of Rs. 147.

187. Rupees 1,073 were paid as compensation for the land taken over for the district munsif's court at Tiruvālūr.

188. The following repair works were carried out:—

- (1) The portion of St. Joseph's College buildings where the tahsildar holds his office, at a cost of Rs. 1,132.
- (2) The sub-registrar's office at Tiruturaipundi, at a cost of Rs. 86.
- (3) Other sundry repairs to the extent of Rs. 196.

189. **Madura.**—The following works were in progress :—

- (1) The construction of a sub-magistrate's cutcherry at Madura; estimate Rs. 17,889, allotment Rs. 9,889. A sum of Rs. 5,000 was expended up to the end of 1885-86 and Rs. 9,889 in 1886-87.
- (2) The construction of a second-class police station-house at Saptūr; estimate Rs. 4,850; allotment Rs. 2,350, outlay Rs. 2,086.
- (3) The construction of a sub-registrar's office at Tirumangalam; estimate Rs. 2,864; allotment Rs. 950.
- (4) Improvements to the deputy tahsildar's cutcherry at Tirushuli; estimate Rs. 3,785; allotment Rs. 1,000.
- (5) The construction of a second-class police station-house and one head and five constables' huts at Ammayanayakanūr; estimate Rs. 3,850; allotment Rs. 1,200, out of which Rs. 570 only were expended.

190. The following works were completed :—

- (1) A deputy tahsildar's cutcherry at Vedasundur; estimate Rs. 11,828, total expenditure Rs. 12,200.
- (2) A deputy tahsildar's cutcherry at Uthamapoliām; estimate Rs. 11,993, expenditure Rs. 12,547.
- (3) A deputy tahsildar's cutcherry at Nellakōta; estimate Rs. 11,828, expenditure Rs. 12,319.
- (4) A sub-registrar's office at Usilampatti; estimate Rs. 2,580, expenditure Rs. 2,611.

191. The allotment under Minor Original Works was Rs. 1,345; expenditure Rs. 1,217; of this Rs. 1,055 were expended in constructing a second-class police station-house at Iyalur and Rs. 143 on securing the treasury-room of the taluk cutcherry at Tirumangalam; and these two works were nearly completed.

192. A sum of Rs. 1,800 was allotted to repairs. The expenditure, which amounted to Rs. 2,188, was utilized chiefly in :—

- (1) Repairing the Sub-Collector's bungalow, taluk cutcherry and Public Works office at Dindigul;
- (2) Maintaining the garden in Terumal Naick's palace at Madura; and
- (3) Fixing lightning conductors in the palace at Madura.

193. **Ramnad.**—The expenditure during the year on the work of converting the police hospital at Ramnad into a residence for the Assistant Superintendent of Police was Rs. 3,152, against the grant of Rs. 3,239; the work was fully completed.

194. **Tinnevely.**—The following works were completed :—

- (1) The construction of a record-room and improvements to the district court-house at Kokarakulam; estimate Rs. 17,875, expenditure Rs. 12,183.
- (2) The construction of a registrar's office at Kokarakulam; estimate Rs. 4,380, expenditure Rs. 4,268.
- (3) The construction of a sub-registrar's office at Srivilliputur; estimate Rs. 2,705, expenditure Rs. 2,638.
- (4) Addition of a compound wall to the sub-jail at Sankaranainārkoil; estimate Rs. 4,312, expenditure Rs. 3,817.

195. The following minor original works were completed or in progress :—

- (1) Sub-registrar's office at Vattirayirupur; estimate Rs. 2,200, expenditure Rs. 2,142.
- (2) Sub-registrar's office at Sattankulām; estimate Rs. 2,080, expenditure Rs. 2,014.
- (3) Third-class police station-house at Singhikulam; estimate Rs. 1,397, expenditure Rs. 1,104.
- (4) Drainage work for the district jail at Palamcottah; estimate Rs. 370, expenditure Rs. 368.

196. Repairs to the buildings below mentioned were completed :—

- (1) Head Assistant Collector's bungalow.
- (2) Public Works Department sub-divisional officer's bungalow at Shermādevi.
- (3) The Sub-Collector's bungalow at Tuticorin and some other petty works.

IV.—PROVINCIAL—COMMUNICATIONS.

197. **Vizagapatam.**—The construction of the Potinghi ghât road was completed with the exception of the iron work for one of the two bridges, which had been ordered from England; estimate Rs. 4,56,581, outlay Rs. 4,34,592.

198. An estimate of Rs. 2,72,700 was sanctioned for the construction of a road from Potinghi to Koraput. A sum of Rs. 30,569 was spent on the work, which was in slow progress owing to great difficulties experienced.

199. The work of surveying and levelling the road from Koraput to Jagadalapur was put in hand. Plans and surveys of 35 miles beyond Koraput towards the Central Provinces were completed. Upwards of 100 miles remained to be done. The expenditure amounted to Rs. 1,213, against an estimate of Rs. 1,500.

200. Under Repairs a sum of Rs. 18,691 was expended in maintaining the Potinghi ghât road, against a grant of Rs. 18,170. The roads were maintained in fair order and the damages done to the road by the heavy rains during the monsoon were repaired.

201. **Godavari (East).**—The navigation works at Dumagudiem were maintained at a cost of Rs. 7,738 during the year.

202. **Nilgiris.**—Under this head the following works were completed :—

- (1) A new road round Mountstuart at a cost of Rs. 8,627.
- (2) Improvements to the road from Ootacamund to Gûdalûr.
- (3) Rest-house with out-houses on the ghât at the 9th mile below Coonoor at a cost of Rs. 7,359.
- (4) Widening and remetalling the ghât road from Kullar to Gûdalûr at a cost of Rs. 3,671.
- (5) A new bridge at Bârliyâr was partly completed.

203. **Presidency and Bangalore.**—A sum of Rs. 9,058 was paid to the Madras Municipality for the maintenance of the roads leading from the Fort to the Mount and Poonamallee.

V.—PROVINCIAL—MISCELLANEOUS PUBLIC IMPROVEMENTS.

204. **Buckingham Canal Division.**—An outlay of Rs. 417 was incurred on clearing trees on two islands in the Adyar river. The work was in progress.

205. **Nilgiris.**—Under Repairs a sum of Rs. 933 was spent on the escapes of Ootacamund and St. Lawrence lakes.

206. **West Coast.**—The revetment constructed for the protection of the town of Ponâni was extended to 520 feet and Rs. 3,295 expended, against an estimate of Rs. 4,280. The work was in progress and the revetment almost completed.

207. **South Arcot.**—The embankment of the Gadilam river for the protection of the town of Tirupâpuliûr from floods, which was commenced last year, was nearly completed. The total outlay was Rs. 6,022, against the estimate of Rs. 8,550.

208. **Presidency.**—Four bunds were thrown up across the Cooum river to keep the river-bed covered with water up to the South Indian Railway bridge. An expenditure of Rs. 723 was incurred on this account and a further outlay of Rs. 835 on repairs to the bunds, and clearing the water between them of weeds. Rs. 850 were spent on the general conservancy of the river.

209. **Tanjore.**—A masonry wall for the protection of Kumbakônânam town on the south side of the Cauvery was constructed at a cost of Rs. 2,113, against an estimate of Rs. 2,330.

VI.—LOCAL INCORPORATED.

210. **Godavari (East).**—The total expenditure up to the end of the year on the Kovur-Munjair junction canal amounted to Rs. 1,39,505, against an estimate of Rs. 1,45,525.

211. A sum of Rs. 5,431 was spent on the construction of an iron lattice girder bridge at Vencatakrisnapuram lock, of the Sāmalkōt canal, against an estimate of Rs. 5,550. The bridge was completed and opened for traffic.

212. **Kistna (East).**—The construction of a landing stage at Bezvāda was in progress. Out of a grant of Rs. 7,788, only Rs. 4,098 were spent. The retaining wall was nearly completed and about one-third of the stone pitching to the bank carried out. The total expenditure amounted to Rs. 17,875, against the estimate of Rs. 21,566.

213. **Kistna (West).**—The river and canal banks used as roads were maintained in proper order at an expenditure of Rs. 937, against a grant of Rs. 1,000.

214. Materials were collected for the construction of a culvert under the good-water channel at Nizampatam. Owing to the late sanction, a sum of Rs. 229 only was spent on an estimate of Rs. 900.

215. **Trichinopoly.**—A sum of Rs. 646 was spent in maintaining 20 miles of road in this district.

216. **Tanjore.**—Under this head a sum of Rs. 5,987 was spent in maintaining 109 miles of road in this district.

217. **Negapatam.**—A sum of Rs. 3,940 was spent in maintaining 42½ miles of road in this district.

VII.—LOCAL—EXCLUDED.

218. **Godavari (East).**—A sum of Rs. 1,031 was spent in setting up a new fourth order dioptric light at the Hope Island light-house against an estimate of Rs. 954.

219. **Vizagapatam.**—The second-class order light for the Santapally light-house was unpacked and set up at a cost of Rs. 308.

220. A new lightning conductor was ordered from the Public Works Stores, Madras.

221. **Kistna (East).**—The silt in the salt creek below the tidal lock at Masulipatam was cleared out. Rupees 457 only were spent out of an allotment of Rs. 1,560 owing to the allotment having been given late in the year.

222. **Nellore.**—The grant and outlay under this head in the Buckingham canal division were Rs. 4,364 and 3,664, respectively. Improvements to the superintendent's quarters at Armeghon light-house were nearly completed, and the following works were in progress:—

- (1) Further improvements and alterations to the superintendent's quarters at Armeghon light-house.
- (2) Constructing lines for the lascars attached to the above named light-house.
- (3) Constructing lines for the lascars attached to the light-house at Pulicat.
- (4) Repairing the damages which these light-houses received during the cyclone of November 1886.

223. **Chingleput.**—The light-house at the Seven Pagodas was in progress on an estimate of Rs. 8,165.

224. The work consists of—

- (1) The construction of a stone platform for a fourth order light.
- (2) the construction of Superintendent's quarters.
- (3) the construction of lascar's lines.
- (4) the construction of two sentry boxes.

225. **Presidency.**—The following major works were completed:—

- (1) Paving the vaults of the Senate house; estimate Rs. 4,343, outlay Rs. 3,715.

(2) Closing the openings to the vaults of the Senate house; estimate Rs. 2,600, outlay Rs. 2,614.

226. Some minor new works were executed at a total cost of Rs. 1,013 and repairs to the extent of Rs. 799.

227. Rupees 108 were expended in maintaining and laying out the ground near the Senate house with shrubs and plants.

228. **Ramnād.**—The port officer's bungalow at Pāmban was repaired at a cost of Rs. 921 against a grant of Rs. 934.

229. **Tinnevely.**—Out of a grant of Rs. 42 for forming a new earth-plate, &c., to the lightning conductor attached to the light-house on Hare Island Rs. 7 were spent.

230. A grant of Rs. 230 was sanctioned for repairs to the light-house superintendent's quarters at Mutium, which were completed at an outlay of Rs. 228.

BENGAL PRESIDENCY

JEYPORE ZEMINDARI

SECRET

VIJAYAGARH

GODAVARI

VIZAGAPATAM

GODI VARE

GODAVARI. D. 1000

WESTERN DIV

CENTRAL DIV

~~SECRET~~ (Canada)
EASTERN DIV.

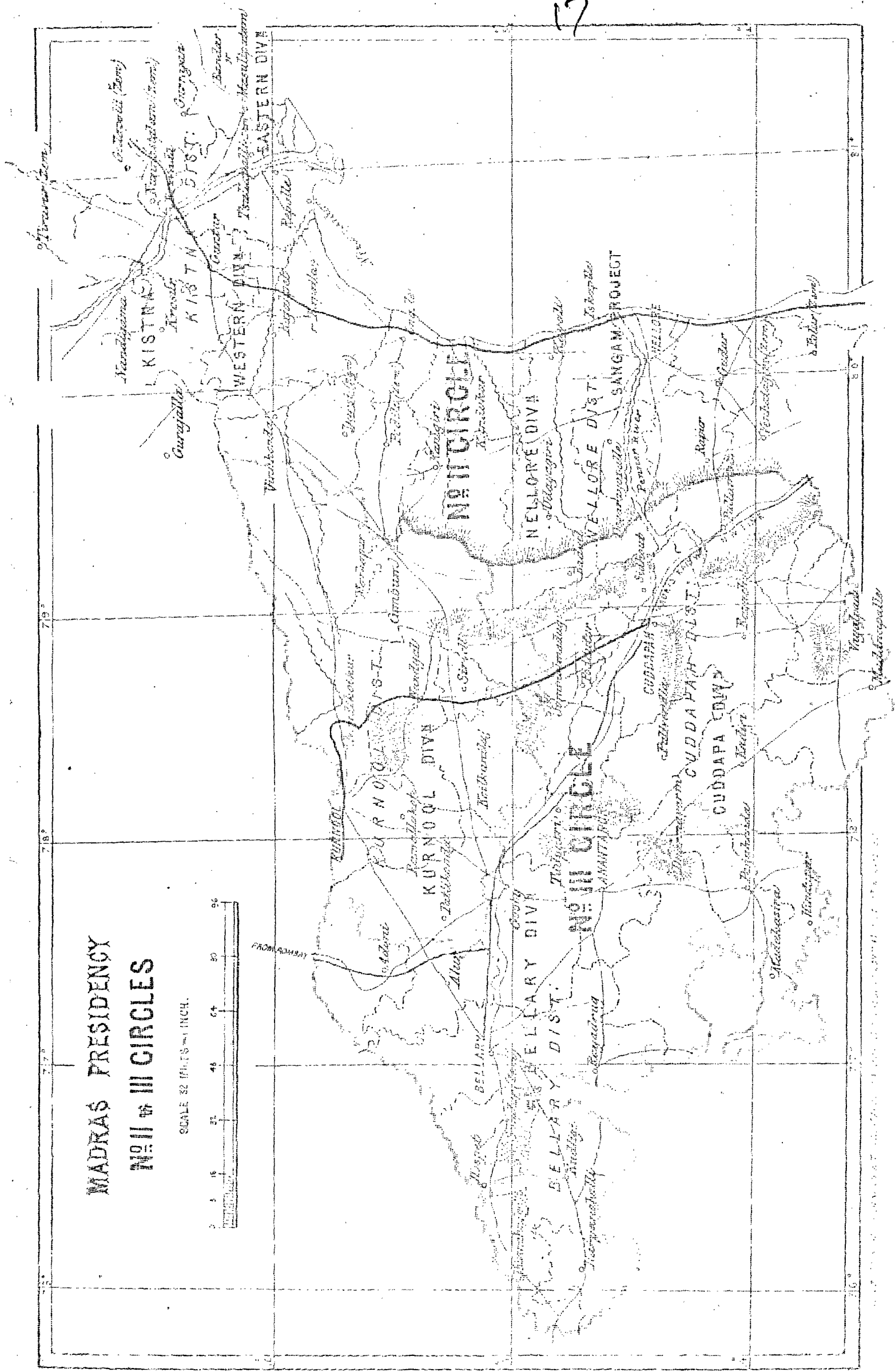
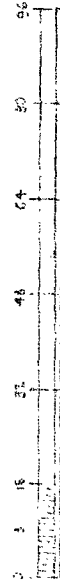
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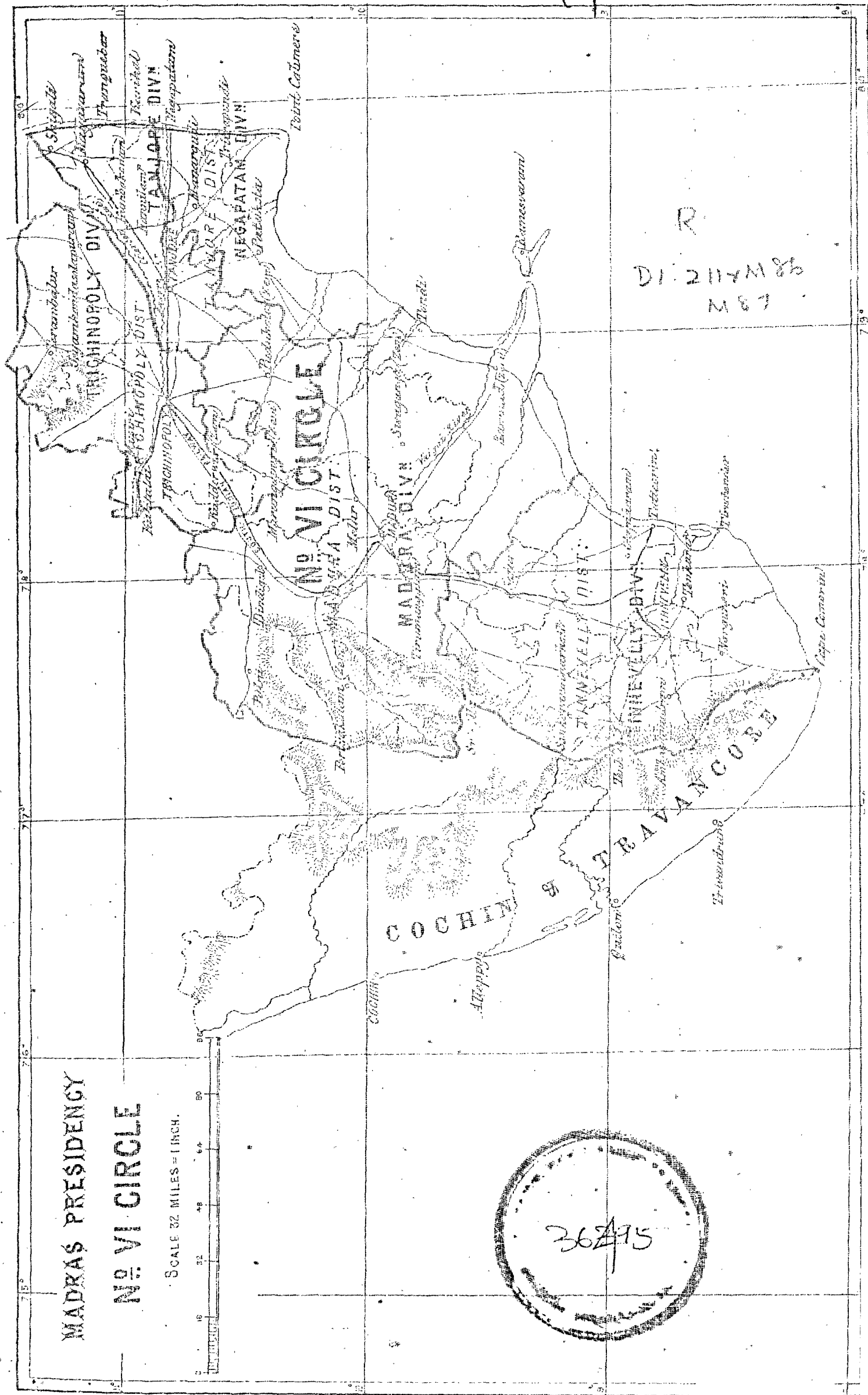
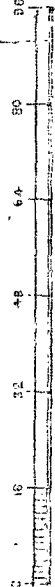
MADRAS PRESIDENCY
NO II & III CIRCLES

SCALE 32 MILES = 1 INCH.



MADRAS PRESIDENCY
No VI CIRCLE

SCALE 32 MILES = 1 INCH.



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