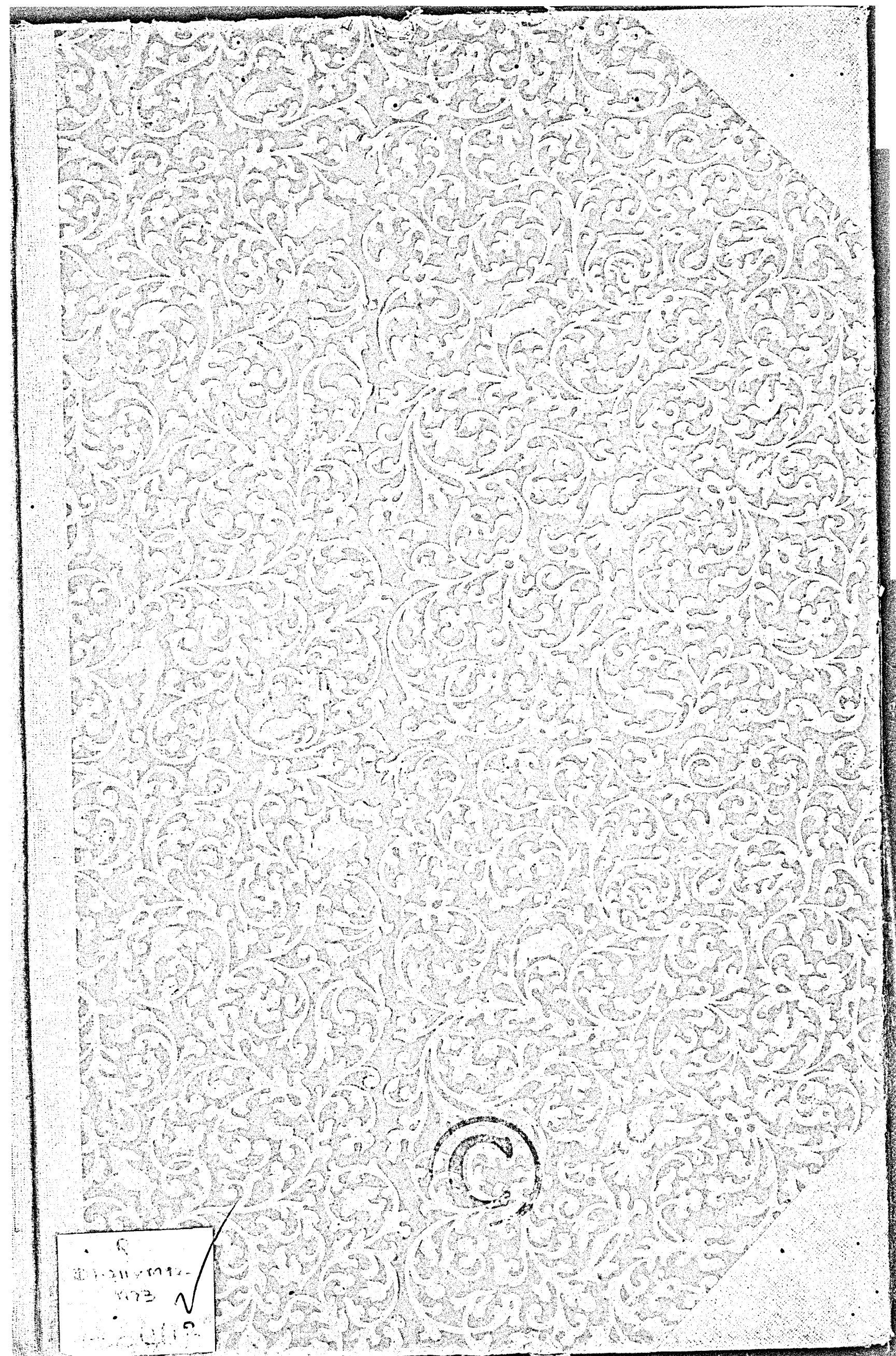
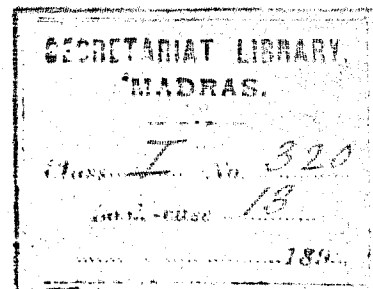
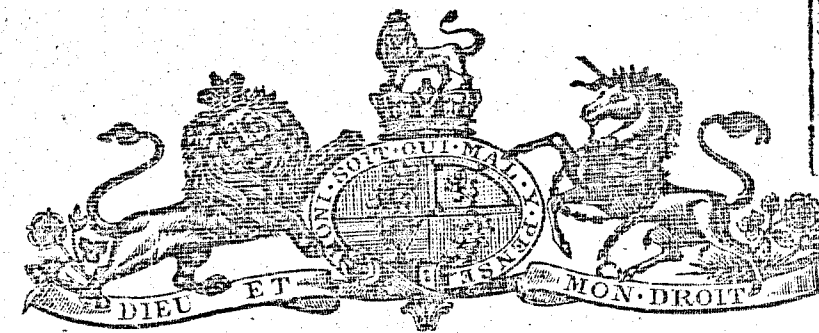






ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

(GENERAL, BUILDINGS AND ROADS BRANCH),

MADRAS PRESIDENCY,

FOR THE YEAR

1892-93.

MADRAS:

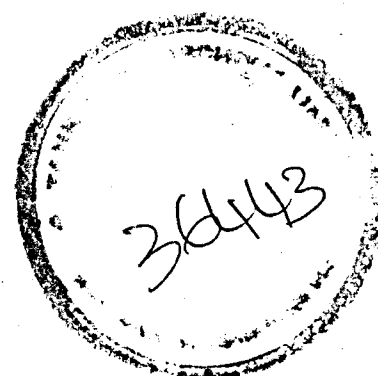
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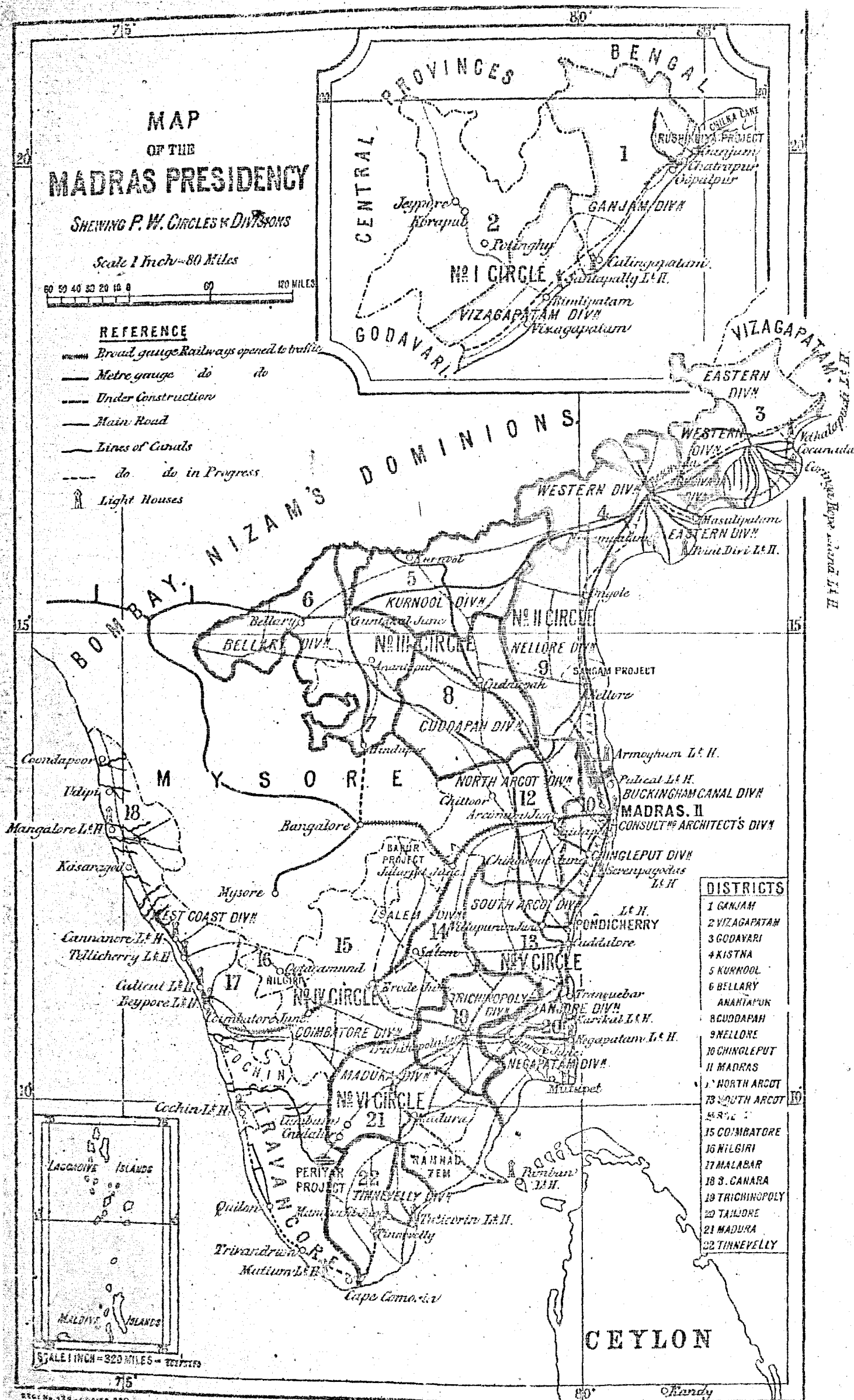
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ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT, MADRAS,

(GENERAL, BUILDINGS AND ROADS BRANCH),

FOR THE YEAR 1892-93.

I.—GENERAL REMARKS.

Administration.—Colonel J. Pennycuik, R.E., continued in charge of the department as Chief Engineer and Secretary to Government until October 1892, when he proceeded on furlough and was relieved by Mr. G. T. Walch, who acted as Chief Engineer and Secretary for the remainder of the year.

2. Circle Charges.—The circle charges were administered as follows:—The I Circle, with head-quarters at Dowlaishweram, continued throughout the year in charge of Mr. G. D. Wybrow. The II Circle, head-quarters Bezwada, was held by Mr. J. Hannan until July 1892, when he proceeded on leave and was relieved by Mr. J. W. Martin, who remained in charge for the rest of the year. The III Circle, head-quarters Bellary, was administered by Mr. J. W. Martin until July 1892, when, on his transfer to the II Circle, he was succeeded by Colonel A. T. Fraser, R.E., who held charge for the remainder of the year. The IV Circle, head-quarters Coimbatore, was held by Lieut.-Colonel R. R. E. Drake-Brockman, R.E., until October 1892, when he was transferred to the office of Chief Engineer for Irrigation. Mr. J. C. Larminie was then appointed to the charge of the circle. The V Circle, head-quarters Madras, was administered by Lieut.-Colonel D. McNeil Campbell, R.E., until July 1892, when on his transfer to Mysore, he was relieved by Mr. W. Hughes, B.A.; the latter officer was transferred to the office of Chief Engineer for Irrigation. Mr. J. C. Larminie was then appointed to the charge of the circle. The VI Circle, head-quarters Trichinopoly, remained in charge of Lieut.-Colonel A. C. Smith, R.E., until January 1893, when he proceeded on furlough; Mr. W. Hughes, B.A., then assumed charge for the rest of the year. The office of Consulting Architect remained in the hands of Mr. H. Irwin, C.I.E., throughout the year. The No. I Periyar division (water works) was administered by Mr. W. B. deWinton as Superintendent of Works until January 1893, when he proceeded on furlough and was succeeded by Mr. S. D. Pears.

3. Divisional Changes.—The Anantapur district which was formed into a separate temporary division in 1891-92 for famine relief purposes was again constituted a sub-division of the Bellary division on the closure of relief works in the Ceded districts in September 1892. The Ramnad zamindari was formed into a temporary Public Works division for famine relief purposes in March 1893, but as a timely fall of rain rendered relief works unnecessary, this special division was closed within the month.

4. Casualties.—There was one death among the superior officers of the department, that of Major C. B. Henderson, R.E., who died at Coonoor from dysentery on the 2nd May 1892.

5. *Grants and Expenditure.*—The following statement shows the grants and expenditure of the year under the different finance heads :—

Fund and financial heads.				Original grant.	Revised estimate.	Actual expenditure.
1				2	3	4
				RS.	RS.	RS.
Imperial Military works	..	..	..	90,000	1,08,300	95,690
Do. Civil works	..	..	..	31,500	37,400	37,646
Provincial do.	..	..	..	23,00,000	23,17,000	21,53,086
Local incorporated funds	..	..	..	25,000	1,78,000	1,92,613
Do. Excluded do.	..	..	..	2,052	31,439	32,800
Estate works	..	..	..	35,868	34,810	33,524
Total ..				24,91,420	27,06,999	25,44,769

6. *Famine Relief Works.*—In the Administration Report for 1891-92, an account was given of the famine relief operations conducted by the Public Works Department and the conditions under which they were carried out. In 1892-93 the operations of the department embraced the districts of Bellary, Anantapur, Kurnool and Cuddapah in the III Circle, North Arcot and Salem in the IV Circle, and Madura in the VI Circle.

At the close of the official year 1891-92 there were 46,059 persons employed under all agencies on relief works throughout the Presidency, and this number gradually rose till it reached the sum of 91,065 in the week ending 18th June 1892. The numbers then commenced to fall week by week till by the middle of September the coolies had all left the works. The number of persons exclusively employed on "Professional agency" works under the supervision of the Public Works Department never approximated to those figures. At the close of the official year there were only 9,606 coolies confined to the two districts of Kurnool and Anantapur on "Professional agency" works. Bellary with 516 persons was added during the week ending 9th April, and, by the 30th April, large accessions were made in Cuddapah, Nellore and Salem, bringing the total up to 27,521. This was the maximum attained during the famine. The numbers then fluctuated for a few weeks until, in July, they commenced to rapidly decline and by the middle of September they had wholly disappeared.

The following is a brief summary of the operations of the Public Works Department in the affected tracts :—

III Circle.—Scarcity more or less severe was felt from the beginning of the official year 1891-92 over the whole area comprised within this circle, but it was not till the close of that year, after the failure of both monsoons, that the Government considered it necessary to formally declare the tracts to be "distressed" under the provisions of the Famine Code. "Relief works" in the technical sense were started in Bellary and Kurnool in December 1891 and in Anantapur in March 1892. In Cuddapah the relief works were started under the supervision of the civil authorities. During the official year 1891-92 the distress never assumed a severe character and no more than 35,200 coolies were ever employed at one time on relief works in the circle.

Bellary.—Nine works, mostly irrigation improvements, were started in this district. The outlay was Rs. 12,146, of which Rs. 10,158 is the estimated normal value of the work done. Payments were made weekly, second and third class wages being generally earned. The coolies put on task work were only able to earn third-class wages in the majority of cases. The piece-work system was also tried, the rates earned being generally as follows :—

						First class.	Second class.	Third class.
						A. P.	A. P.	A. P.
Men	...	...	...	...	...	2 4	1 9	1 7
Women	...	...	...	...	...	1 8	1 4	1 3
Children	...	...	...	...	...	1 2	0 11	0 10

Hutting accommodation was not found to be necessary, the coolies being sufficiently near their villages to return home at night.

Two surveyors were employed on irrigation investigations and in the preparation of estimates, besides a special establishment for supervision of work consisting of two engineers and four subordinates.

Anantapur.—Distress in this district was confined to the northern portion, the southern or hilly tracts being more favored in regard to rainfall and soil, did not require the opening of works of relief. The affected or northern taluks comprise about three-fourths of the whole district and about 75 per cent. of the population numbering upwards of 600,000. Judging by the numbers who resorted to relief works the distress could neither have been widespread nor acute. They never reached 900 on Professional agency works, and the Collector's return comprising works of all classes shows 1,513 as the maximum at any one time. The Public Works Department works were opened in March and closed in July 1892, the expenditure having been Rs. 6,181. Of this outlay Rs. 3,467 have been classed as infructuous, being in excess of the normal value of the work done. The supervising staff in this district was well organised and payments were made frequently and with great regularity; the tasks were arranged with exactness, but this did not always suit the coolies and they more than once temporarily ceased work. Finding, however, that nothing was gained by such procedure, they returned and succeeded in earning a sufficient wage.

Kurnool.—Relief works were started at the end of the year 1891, and, when the official year 1891-92 closed, there were 14 works in progress affording employment to nearly 9,000 persons. The number of works rose ultimately to 39 and the number of laborers to 22,717. In May 1892 the number of laborers commenced to diminish. There was a gradual but steady decline till the middle of September 1892 when the works were finally closed. All the works taken up by the Public Works Department were tanks, but in May 1892 38 miles of Local Fund roads were placed under the supervision of the department. The total expenditure was upwards of 2 lakhs, the bulk being on irrigation works. The infructuous outlay was 36 of the total expenditure, and the following are, among others, the causes which contribute to such outlay on famine relief works :—

- Sunday wages paid during cessation of work.
- The minimum wage being paid to weak persons unable to earn it.
- Supply of drinking water to camps.
- Extra supervision due to the nature of famine labour.
- Expenditure on sanitation of camps.

The tasks were laid out on principles similar to those already described in case of other districts and the rates paid as the third-class wage ranged for—

						A. P.	A. P.
A man from	...	...	...	...	...	1 5	to 1 9
A woman from	...	...	...	...	...	1 2	.. 1 3
A child from	...	...	...	...	...	0 9	.. 0 10

The coolies were paid in cash twice and sometimes three times a week by paymasters appointed by the Collector and placed under the subordinates in charge of the works. The Executive Engineer and sub-divisional officer had drawing accounts and the subordinates of lower ranks were provided with imprests according to requirements, the amount of the imprests being limited generally to Rs. 1,000. Special police guards were necessary for the security of the large cash balances kept on the works. No hutting accommodation was required, the coolies being able to return to their homes at night.

Cuddapah.—Relief works under the supervision of the Public Works Department commenced in April 1892. Previous to this date, relief was afforded by the collection of road metal under the direction of the Local Fund staff. The earthwork of the Sagilera upper project was started on the 18th April and it immediately attracted a large number of persons. By the fourth week of the month they had increased to 3,098. The numbers for the whole district never rose beyond 6,349 out of a total population of 1,268,887. On the night of the 2nd June a heavy fall of rain occurred

which ameliorated the condition of things. Agricultural operations were resumed and the numbers on relief works commenced shortly afterwards to decline. By the end of August they had diminished to 1,458 and by the middle of September the works were finally closed. The works undertaken were principally irrigation works, and of these the Sagilera project absorbed a very large proportion of the labour. The tasks were calculated for a typical gang of 50 coolies, consisting of 24 men, 20 women and 6 children, and were fixed as follows:—

Classification of soil.	First-class task.	Second-class task.	Third-class task.	Remarks.
<i>Excavating.</i>	C. FT.	C. FT.	C. FT.	
Soft soil	2,376	1,782	1,188	Third-class tasks were raised after the soil had been softened by rain.
Hard soil and gravel	1,344	1,458	972	
Rocky soil-soft and decomposed rock	900	675	450	
Lime stone	650	467.5	325	
Rock-cutting	450	337.5	225	

The following statement shows the rates of wages:—

	FIRST CLASS.			SECOND CLASS.			THIRD CLASS.		
	Man.	Woman.	Child.	Man.	Woman.	Child.	Man.	Woman.	Child.
	A. P.	A. P.	A. P.	A. P.	A. P.	A. P.	A. P.	A. P.	A. P.
April—May	2 8	1 11	1 4	2 2	1 8	1 1	1 8	1 4	0 10
May—July	2 6	1 10	1 3	2 0	1 7	1 0	1 7	1 3	0 19
Last week in July and August	2 3	1 8	1 2	1 9	1 5	0 11	1 5	1 1	0 9

Coolies coming from a distance found accommodation in the adjacent villages and it was only necessary therefore to construct 10 temporary huts at distances of half a mile apart. These were roofed with mats or date palms supported on wooden posts and rafters. A hospital for cases of general disease was also erected. The total cost of hutting came to Rs. 328. Cholera broke out among the coolies on the 22nd June and measures were at once taken to check the spread of the disease. The affected gangs were isolated and sheds erected to serve as a cholera hospital, to which patients were conveyed in a dhooly by bearers organised for the purpose. Twenty-eight persons in all were attacked, of whom 4 died.

The total expenditure on Professional agency works throughout the district amounted to Rs. 59,490, of which Rs. 14,931 is classed as abnormal.

IV Circle—Punganuru Zamindari, North Arcot District.—This portion of the district became affected late in the year 1891. Relief works were started in the first instance by the civil authorities, but, at the beginning of April 1892, the Public Works Department took them over. The following were the works transferred:—

(1) Constructing a road from Ramasamudram to the Cuddapah frontier *via* Chembacore; sanctioned estimate Rs. 7,400.

(2) Remetalling the road from Punganuru to Chowdapalli; sanctioned estimate Rs. 17,938.

(3) Repairing the road from Punganuru to the Kolar-Pulimmar road *via* Sunkaroyalpet; sanctioned estimate Rs. 10,020.

During May the following additional work was placed under Public Works Department supervision, viz., the improvements of the village water-supply and the digging and cleansing of wells.

The coolies were tasked and paid in accordance with the provisions of the Famine Code, earning usually second-class wages.

At the end of April there were 545 coolies on the works. The numbers gradually rose to 1,764 by the end of June. In July they rapidly diminished, and, by the 15th of that month, there was no longer any need for keeping the works open.

The total expenditure was as follows:—

	RS.	A.	P.
(1) Ramasamudram-Chembacore road	3,384	12	11
(2) Punganuru-Chowdapalli road	5,823	1	4
(3) Punganuru-Sunkaroyalpet road	6,188	2	3
(4) Improvement of village water-supply	1,169	14	8
(5) Saddam tank investigating	39	8	0

Salem.—The distress in this district was confined to a portion of the Tiruchengodu taluk and was of short duration. The portion affected is an elevated rocky stretch of country. A few tanks in its neighbourhood were thoroughly repaired. The works were started in April and continued till June when they were closed owing to rain-fall. The total expenditure was Rs. 1,114.

VI Circle—Madura.—There were no actual transactions under this head. Parts of the Madura district were threatened with distress owing to the want of rain and the Palni taluk and the Ramnad zamindari were especially in a very bad state. In February 1893 the Government sanctioned the formation of a special (Ramnad) division, which was organised by the beginning of March and every arrangement was made for starting relief works, but the fall of rain in the month of March, which was pretty general all over the district, fortunately mitigated the distress in all the affected parts, so much so that no one came to the work which was opened to give employment at famine rates of wages, although it was kept open for a week or 10 days. The special temporary division was consequently closed at the end of March 1893.

The following statement shows the total expenditure throughout the Presidency incurred during the year on famine relief works under all heads by the agency of the Public Works Department:—

	RS.	A.	P.
Irrigation works	2,01,542	15	1
Roads	79,858	12	3
Miscellaneous	3,997	10	3
Establishment	67,272	3	4
Total	3,52,671	8	11

7. Madras Harbour Works.—The progress made towards the reconstruction of the Madras harbour during the official year 1892–93 was confined to the construction of the massive pier heads for completing the harbour with an eastern entrance of 520 feet in width, with a minimum depth of 39 feet of water at De Havilland's mean sea-level.

The general section of the harbour walls as far as the commencement of the pier heads is 24 feet wide and founded at 22 feet below sea-level; this section was during the year widened and deepened until a section of 38 feet wide and 40 feet deep below sea-level was reached; and this increased width and depth was the cause of so small an advance or progress having been made to each pier head above sea-level, while in reality heavier and more difficult work was done in founding each pier head at this greater depth. Much of the old consolidated rubble base had to be raised by dredging together with portions of old broken blocks, which could only be handled by divers in smooth water. No comparison therefore can be made with any of the former years' progress, as the work is of quite a different nature and has involved considerable extra labour and time; but, nevertheless, the general progress throughout the year was satisfactory.

North Pier Head Superstructure.—During the year a length of 61 feet 9 inches of the pier head was built, consisting of 11 courses, made up of 264 concrete blocks; of these 24 blocks or one course was set in June or the first quarter of the official year.

Four courses or 97 blocks were set in the second quarter; only one course of 23 blocks was set in the third quarter, due to the necessary stoppage of 11 weeks for the monsoon; and 5 courses or 120 blocks were set in the fourth quarter ending

31st March 1893; the rate of advance of completed work for each respective quarter was, therefore, 6 feet 3 inches, 23 feet 3 inches, 5 feet $4\frac{1}{2}$ inches, 26 feet $10\frac{1}{2}$ inches, or a total advance of 61 feet 9 inches during the year.

The total length of the north pier, inclusive of the pier head, on the 31st March 1893, was $3,753\frac{1}{4}$ feet from the commencement of the concrete blockwork in shore, leaving $20\frac{1}{4}$ feet of superstructure to be set before the point is reached, at which the caisson is to terminate the north pier head.

Wavebreaker.—Along the outer straight of the north arm between the point 3,375 feet and 3,691 feet from shore, where the wavebreaker protection had not been made up to the full section of 40 feet owing to the limited overhang of the old titan crane, 138 wavebreaker blocks of 30 ton each were deposited by the new all-round titan crane to the full width, and this number of blocks completed the work in accordance with the sanctioned design up to the commencement of the pier heads. In the third quarter, or early in October 1892, 63 wavebreaker blocks were deposited along the new length of pier head built, completing the wavebreaker protection up to a point 3,725 feet from the shore.

Apron or Protection to Rubble Base.—North pier rubble base was paved or consolidated with Portland cement concrete along the inside of the pier for a length of 46 feet of completed work, and an additional length of 309 feet 5 inches was prepared ready to receive the concrete.

South-Pier Head Superstructure.—The progress made at the south pier during the year was less than half of that recorded at the north pier and this was owing to there being more of the rubble base to be raised by divers. The stone is too large to dredge and a large quantity of it is so mixed up with portions of the old broken blocks that no dredger can be employed, but each stone has to be removed by hand, and, in addition to this difficulty, the titan crane at this arm is of the old type and unsuitable to the work.

During the year 28 feet $7\frac{1}{2}$ inches of the pier head was built at the widest and deepest section and this progress was made by setting five courses, composed of 121 blocks; of this number 24 blocks or one course was set in the first quarter, 24 blocks or one course in the second quarter, none during the third quarter owing to the short working season and monsoon, and three courses of 73 blocks were set in the fourth quarter ending 31st March 1893; the rate of advance of completed work each quarter was, therefore, 6 feet 3 inches, 6 feet 3 inches, and 16 feet $1\frac{1}{2}$ inches = 28 feet $7\frac{1}{2}$ inches.

The total length of the south pier, inclusive of the pier heads, on the 31st March 1893, was $3,846\frac{1}{2}$ feet from the commencement of the concrete blocks on shore, leaving a length of $47\frac{1}{4}$ feet of blockwork to be built before the cylindrical head is reached.

Wavebreaker.—The wavebreaker screen was continued along the new work to the full width of 40 feet east of the new bounded superstructure of 38 feet in width and completed as far as the permanent work had advanced; this protection necessitated dropping 35 large blocks from the old wavebreaker crane.

Apron or Protection to Rubble Base.—The south pier rubble base was paved with Portland cement concrete for a length of 76 feet $\times$ 20 feet wide, which brought the total length of base so protected up to 997 feet, leaving only a few feet more to complete this work up to the commencement of the south pier head.

Concrete Blockmaking.—During the year 152 blocks were made, which completed the necessary number required for the pier heads. Of this number 14 blocks were of a special shape to act as a footing to the caisson, and the concrete of which these blocks were made was of a stronger mixture, being in the proportions of 1 to 6.

Supply of Portland Cement.—During the year tons 716-5-0-0 of Portland cement were received from England and the balance from the previous year on hand was tons 1,283-5-1-23.

The quantity of cement used during the year for all purposes was tons 395-1-1-0, which left a balance in store on the 31st March 1893 of tons 1,577-10-1-13.

Of the total quantity of cement in store, 516 tons have been on the works since 25th December 1890 and this cement has, with all later supplies, been recently retested; there were no signs of deterioration through long stacking, for the climate of India does not affect cement as a damp and variable one does. A shipment in March 1892 has shown an improved tensile strain upon the test it stood on arrival in India. Of the supply of cement on hand, tons 507 will be used in February 1894 for the north pier caisson and the balance in capping and setting the south pier caisson in October 1894, when a further supply will be required.

Pallavaram Quarries.—The quarries at Pallavaram continued to be worked by the same contractor throughout the year, but, as the works are nearing completion, a less outturn of stone is required each year. The total supply made during the year was therefore only $1,851\frac{1}{4}$ tons of chips for blockmaking and $7,078\frac{3}{4}$ tons of large rubble stone for the protective works north of the harbour and the whole of this supply was delivered in 42 trains by the South Indian Railway Company.

Protective Works north of the Harbour.—Seven thousand seventy-eight and three-quarter tons of large stone were during the year deposited at points where the slope had become flattened from the heavy seas which continually play upon it. There still remained at the close of the year a small balance of stone to be deposited under the already sanctioned estimate, but a further expenditure to the extent of approximately a $\frac{1}{4}$ lakh a year will have to be spent upon reforming the slope until it has permanently settled down, which will not be under two years hence.

Foreshore south of the Harbour.—There has been an advance seawards of about 120 feet of sand close to the pier.

Sea Bottom within the Harbour.—A complete marine survey of the inside of the harbour has not been made since the year 1889 owing to bad weather generally, but several soundings were taken in 1893 and no difference in depth could be detected. All that takes place inside the harbour is the shifting of the high water line and this is dependent upon the state of the sea inside the harbour during the previous two or three months and whether the sea had been smooth or not.

Summary of Progress.—The following is a summary of the progress made on the harbour works during the year under review:—

ADMINISTRATION REPORT OF THE PUBLIC WORKS DEPARTMENT

No. of item.	Particulars and quantity of work, &c.	Sub-heads of work.	NORTH PIER.				SOUTH PIER.				Pallavaram quarries outturn.	Concrete block-making.	Harbour and protective works, railways, &c.	Total expenditure 1892-93.
			Rubble base.	Head founded at 40' below sea-level.	Wave-breaker.	Pase protection.	Rubble base.	Head founded at 40' below sea-level.	Wave-breaker.	Pase protection.				
1	Total quantity rubble stone received on works and deposited	Tons.	1,250 1/2								72,253 1/2		70,993 1/2	
2	Total quantity of chips received on works and deposited	"		245 2/3							16,755 1/2			
3	Concrete blocks set by divers	No.			464 2/3									
4	" deposited in wavebreaker	"			201									
5	" made for pier heads	"										720 62		
6	" wave-breaker	"										272 30		
7	Wrought iron cramps fixed in position	"		30 26										
8	Total outturn of concrete	C. yds.		75 0 6		269 1/2						15,504 1/2		
9	Advance or progress of completed superstructure					12 1/2						2,955 1/2		
10	Rubble base protected with concrete					236 3/3								
11	Expenditure under sub-heads of work approximately		4,850	55,072	3,801	11,303	1,516	26,297	1,416	4,892	10,869	50,979	43,532	214,627

Portland Cement.

Balance from last year	1,283 5 1 23
Received from England during year	716 5 0 0
Used for block-making	379 16 1 0
Do. other work	15 5 0 0
Balance on 31st March 1893	1,577 10 1 13

GENERAL, BUILDINGS AND ROADS BRANCH.

Expenditure.—The total outlay on the works during the year, including the expenditure on the protective works north of the harbour, was Rs. 2,56,019 made up as follows:—

	RS.
Outlay on works	1,95,104
Do. on establishment	54,953
Do. on tools and plant	41,098
Net debits to suspense heads	2,91,155
Net outlay in the year	35,136
	2,56,019

The total expenditure up to the end of the year was Rs. 1,19,38,529 against the total estimated cost of Rs. 1,23,83,386.

Miscellaneous.—During the year a new building was designed and erected at a cost of Rs. 6,902 as the Harbour Master's offices on the beach.

The whole of the machinery, cranes and trucks, &c., were kept in working order for the traffic department and all haulage was done by the harbour works locomotives.

8. *Vizagapatam Harbour.*—In the report for the previous year mention was made of the deputation by the Secretary of State of Mr. F. N. Thorowgood to investigate locally the condition of the port of Vizagapatam and to submit proposals for its improvement. Mr. Thorowgood's report was received through the Secretary of State in July 1892 and the measures proposed by him were briefly (1) the construction of a groyne from the shore north of the river mouth, (2) the excavation of some reclaimed land with the object of increasing the tidal capacity of the estuary, and (3) the dredging of the mouth of the channel. The total outlay involved in these improvements was estimated at Rs. 6,11,271.

A larger scheme estimated to cost Rs. 43,27,272 was also proposed by Mr. Thorowgood with the object of forming a deep sea harbour, enclosed by piers constructed from the shore north and south of the entrance to the river.

On a review of these proposals, the Government of India expressed the opinion that the improvement of the harbour was a measure that was desirable in the interests of the traffic that would be accommodated by the East Coast Railway and of the inland traffic from the direction of Raipur that finds its natural outlet at Vizagapatam. That Government was therefore disposed to approve the execution of Mr. Thorowgood's smaller scheme, but was not prepared to make any assignment from Imperial revenues for the project, the cost of which, including the provision of a sand pump dredger and of a margin for unforeseen outlay, was put down at between eight and ten lakhs of rupees. The condition of Provincial finances was such as to preclude the Madras Government from taking up the scheme and it was therefore decided that the desired improvements must be deferred. At the close of the year it was intimated to Government that there was some likelihood of the formation of a company for the construction of the boat harbour proposed by Mr. Thorowgood.

9. *Negapatam Harbour.*—The proposal to construct an iron screw pile pier at this port was in abeyance. Plans and estimates for the two stone groynes recommended by the port committee were under consideration. The diversion of the main town drain approved in 1891 had not been put in hand owing to want of funds. The limits of the port were demarcated at a cost of Rs. 201.

10. *New Law Courts, Madras.*—This building was completed with the exception of the main central tower, and at a grand and impressive ceremony the courts were formally opened by His Excellency the Governor on the 12th July 1892. A number of small alterations and fittings subsequently asked for by the Honorable the Judges were executed to their satisfaction.

The large central tower was built to a height of 140 feet, leaving only one-third of the stone dome to be erected. The cupola in which the lantern of the light-house is to be fixed had arrived from England. The machinery for the new lamp was

received and put together. The lightning conductor protection of the building was completed, with the exception of that for the large tower. The furniture was manufactured by local workmen on the site of the work from different descriptions of Indian wood in designs suited to the architecture of the building and received the unqualified approval of the Honorable the Judges and other officers using it. The City Civil Court and Vakils' chambers were completed during the year. Their Excellencies the Viceroy and the Governor opened the building for public use in November. This large block with its towers and difficult stone work was completed within a short space of 16 months.

The total estimate for the New Law courts amounts to Rs. 13,06,640 and the expenditure during the year was Rs. 1,94,102, the outlay to date having been Rs. 12,28,196.

11. *Workshops for the College of Engineering.*—To render the courses of study at the college as practical as possible, the provision of a permanent workshop for the students was sanctioned during the year. A site was selected to the south of the college buildings and at the end of the year the walls had been carried up to their full height and roof materials were under preparation. The estimate for the workshops amounted to Rs. 56,126 and, of this sum, Rs. 23,607 represented the cost of the building and the balance the value of machinery, water-supply and contingencies. The shop will contain machine tools driven by steam and a large iron testing machine which it is anticipated will be of use to the public.

12. *Extensions to the Presidency College.*—The number of applicants for the chemistry class having been found to be out of all proportion to the space available in the chemical laboratory of the Presidency College, an estimate, amounting to Rs. 32,125, for additions to the building was sanctioned and the work was commenced in 1891-92. During the year under review the entire building was completed, with the exception of some fittings, the particulars of which had to be obtained from the Professor of Chemistry. Plans and estimates for removing and reconstructing the tower of the Presidency College and for improvements to the façade of the building were submitted during the year, but it was decided to postpone their execution until after the completion of other works of more pressing necessity.

13. *Law College, Madras.*—The Secretary of State having sanctioned the scheme for the establishment of a Law College at Madras, and in view of the fact that accommodation would have to be provided for between four and five hundred students, the Government considered it advisable to construct an entirely new building for the college. The Consulting Architect was accordingly directed to draw up the necessary plans and estimates. A site was selected for the building on the Esplanade to the west of the new Law Courts and sketch plans with an approximate estimate of nearly three lakhs of rupees were approved by Government with certain modifications. The detailed plans and estimates were nearly ready at the close of the year and funds for the commencement of the work in 1893-94 were provided in the budget for that year.

14. *Coonoor Ghat and Kullar Bridge.*—These works again suffered much damage from unexpected floods. The rainfall at Coonoor during February and March 1893 was above 40 inches, 21 inches having fallen in March against an average of 3.79. The new bridge over the Kullar river, which had been commenced in the previous year, was in good progress and one of the girders was ready for lifting, when a sudden fresh damaged it in October 1892. The work was stopped until January and both girders were then erected and the bridge nearly completed, when the unprecedented series of floods in March culminated in the entire destruction of the right abutment and iron work on March 12th.

On the ghat several heavy land slips occurred on the first mile below Coonoor, blocking up the road and delaying the mails, and a large deposit of mud was washed down from the railway cutting above the twenty-first mile, which caused much delay to traffic. These land slips, due to railway operations and the lamentable failure of the Kullar bridge, caused much anxiety and trouble to the officers of the department. The road was, however, rendered passable with commendable rapidity.

At the Kullar river the temporary bridge was washed away on 1st March and several roughstone causeways, built to keep traffic going till the new bridge was ready, were successively destroyed. After the new bridge was swept away another temporary bridge was at once built over which traffic has since passed, and a temporary suspension bridge of 200 feet span was commenced to accommodate foot passengers.

15. *Light-houses.*—The undermentioned light-houses were inspected by the Superintending Engineer, I Circle :—

Calingapatnam.	Vakalapudi.
Santopalli.	Hope Island.

16. *Works in Wards' Estates.*—The works in the following estates were in charge of the Public Works Department during the year :—

Ganjām division.

- (1) Atagada and Kallikóta.
- (2) Aska.
- (3) Dhārākóta.
- (4) Bodagoda.
- (5) Chakipalli.

Goddavari Western division.

- (6) Lakkavaram.
- (7) Tangellamudi.

Of these, Atagada and Kallikóta were handed over to the proprietor at end of January. The following statement exhibits the outlay as compared with grants for works which under Government would be classed as "Civil works." Those falling under "Irrigation" will receive separate notice in the report of the Irrigation branch of the department :—

	BUILDINGS.				COMMUNICATIONS.			
	Original works.		Repairs.		Original works.		Repairs.	
	Revised grant.	Outlay.	Revised grant.	Outlay.	Revised grant.	Outlay.	Revised grant.	Outlay.
<i>Ganjām division.</i>	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Atagada and Kallikóta	1,200	1,100	500	504	443	443	447	429
Aska	..	..	10	9	..	..	..	..
Dhārākóta	122	122	1,000	920	..	..	50	41
Bodagoda	1,500	1,547	100	110	120	150	..	..
Chakipalli	..	..	..	..	..	..	..	..
Total	2,822	2,859	1,610	1,543	563	593	497	470
<i>Goddavari Western division.</i>								
Tangellamudi	..	..	2,300	1,828	..	..	..	..
Lakkavaram	..	..	..	..	..	..	..	..

Atagada and Kallikóta.—Under Civil buildings, original, the following works were completed :—

- (1) Reconstructing zamindar's house next to Boyirani cutcherry; estimate Rs. 670, expenditure Rs. 667.
- (2) Constructing a masonry compound wall at Nermalajhoro; expenditure Rs. 3,261.
- (3) Reconstructing marriage mantapam and putting up new roof to bathing mantapam in Nermalajhoro compound; expenditure Rs. 906.

Under "Buildings, repairs," the following works were completed :—

- (1) Repairing Kallikóta palace; expenditure Rs. 1,264.
- (2) Repairing second gateway of Kallikóta; outlay Rs. 70.

Under "Communications" the only work executed was constructing a metalled road in Kallikóta town, the expenditure on which was Rs. 1,975 against an estimate of Rs. 1,670. The excess was due to the substitution of culverts for the road dams sanctioned and to the omission of certain portions of road from the estimate.

Four works were repaired at a cost of Rs. 428 against an allotment of Rs. 417.

Aská.—The grant of Rs. 500 under "Buildings, repairs," which was subsequently transferred to original works, was surrendered pending the settlement of the question regarding the new building (malukdar's quarters). The damaged portion of the terrace of the upstairs building of the malukdar's house was demolished at a cost of Rs. 9.

Dhárakóta.—The only work in progress under "Buildings, original," was "re-constructing Kunjeebehara Swamy's mattam, the expenditure on which was Rs. 867 against an estimate of Rs. 950. As this work was considered unnecessary, it was stopped and the balance of grant surrendered. Four buildings were repaired at a cost of Rs. 920 against a grant of Rs. 1,000.

Under "Communications, repairs," the work, maintaining Dhárakóta Mahadevy's road, on which an expenditure of Rs. 40 was incurred against an estimate of Rs. 70, was in progress.

Bodagoda.—Under Buildings the work "constructing manager's office at Bodagoda" was completed at a cost of Rs. 1,706 and two buildings were repaired. A road from the palace to the police station at Bodagoda was completed at a cost of Rs. 652.

Tangellamudi.—Repairs to the zemindari building at Tangellamudi were in progress, the expenditure having been Rs. 1,823.

17. *Public Works Stores.*—Mr. L. L. Wickham, Assistant Engineer, first grade, continued in charge. Stock-taking was completed during the year.

	RS.	A.	P.
The opening balance was	1,91,527	6	8
The receipts during the year were—			
From London	23,854	11	9
Public Works Divisions	186	4	0
Workshops	1,271	9	3
other departments	250	5	5
provinces	4	10	6
excess in stock-taking	29	10	5
local purchases	419	1	4
	26,016	4	8
Total	2,17,543	11	4
The issues were—			
To Public Works Department	13,723	8	1
Workshops	21,384	6	3
State Railways	291	4	6
tools and plant of Public Works Stores	33	12	10
articles valued at Rs. 10 and below transferred to other divisions and departments	159	9	4
private sales	111	7	7
	35,704	0	7
Leaving a balance of	1,81,839	10	9

This closing balance is in excess of the reserve limit of Rs. 1,50,000 by Rs. 31,839-10-9 and is due to the receipt of useful stock articles from England during the year to meet the requirements of Public Works Workshops and the ordinary divisions.

The balance of stock above shown includes value of obsolete articles in stores treated as surplus. Obsolete stores to the value of Rs. 2,610 were sold during the year, leaving a balance on hand of the value of Rs. 77,317.

Special stores to the value of Rs. 69,317 were obtained from England on account of other divisions and despatched to their destinations. Local purchases of stores were made to the value of Rs. 419.

Tools, &c., to the value of Rs. 22,696 were sold to Public Works divisions and other departments of Government.

Forty-five consignments were received from England and there were 57 shipments to Public Works divisions as against 49 and 52 in the previous year.

18. *Presidency Public Works Workshops.*—The value of work executed in the shops during the year was Rs. 1,11,562-9-1 against Rs. 1,10,431-3-2 in the previous year showing an increase of Rs. 1,131-5-11. The following is a statement of the work done in the shops during the year as compared with that of the previous year:—

	1892-93.	1891-92.	More than 1891-92.	Less than 1891-92.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Work done for Public Works Department including the Military Works Department and State Railways	87,234 8 9	72,399 9 1	14,835 8 8	4,366 4 6
Work done for other departments	28,104 6 1	32,479 10 6	..	5,141 8 9
Do. for private parties	419 15 10	6,661 8 7	..	..
Total	1,15,758 14 8	1,10,431 3 2	14,835 8 8	9,597 13 2

The total value of work done in 1892-93 includes Rs. 4,196-5-7, the cost of materials belonging to other divisions utilized in the workshops but not passed through the workshop accounts. Deducting this sum of Rs. 4,196-5-7, the value of work done would be Rs. 1,11,562-9-1 or Rs. 1,131-5-11 more than that of the previous year as stated above.

The value of machinery and plant in the shops at the beginning of the year was Rs. 1,03,227. After deducting the usual 4 per cent. for depreciation and adding receipts, amounting to Rs. 519, the balance at the close of the year amounted to Rs. 99,291. The expenditure on tools and plant was Rs. 526 from a grant of Rs. 1,500, while the balance of materials on hand at the end of the year was Rs. 19,611-12-8 which is within the sanctioned reserved limit of Rs. 25,000.

19. *Nellore Workshops.*—The outturn during the year was Rs. 14,053-3-11 against Rs. 17,443-6-9 in the preceding year. The cost of general charges on account of establishment and contingencies amounted to Rs. 1,577-11-10 against Rs. 1,234-3-11, being the centage on works resulting in a loss of Rs. 343-7-11.

20. *Bezawada Workshops.*—The outturn of these shops was Rs. 1,11,561-14-2 against Rs. 1,11,535 for preceding year. The total charges at 1 per cent. on the transactions of the year on account of general charges amounted to Rs. 717-4-3, while the charges debitable to this head were Rs. 358-10-6, leaving a net profit of Rs. 358-9-9.

21. *Dowlaiswaram Workshops.*—The following is a statement of the work done in the shops excluding centages during the year under review as compared with the previous year:—

	1892-93.	1891-92.	More than 1891-92.	Less than 1891-92.
	RS.	RS.	RS.	RS.
Work done for the Public Works Department excluding centage	67,385	72,947	..	5,562
Work done for other departments excluding centage	3,717	4,747	..	1,030
Do. for private parties	1,734	1,005	739	..
Total	72,836	78,699	739	6,592

It will be seen that the value of work done amounted to Rs. 72,896 as against Rs. 78,699 in the preceding year. The falling off occurred almost wholly under work done for the Public Works Department and was due to the completion of works connected with the Gôdâvari delta system.

22. *Upkeep of Roads on River Banks.*—Rules for the construction and upkeep of Local Fund roads on river embankments in the Tanjore district were issued during the year. These rules defined the conditions under which masonry or other works on such roads can be undertaken by the District Board or Public Works officers and the proprietary rights of the two departments to the roadways, masonry works, inner and outer slopes of embankments and trees growing thereon were clearly described.

23. *Roads.*—The following statement shows the length of road communication maintained by public authorities in Madras during the year 1892-93:—

Name of division.	Name of district.	Length of metalled roads maintained by the Public Works Department.	Length of unmetalled roads maintained by the Public Works Department.	Length of metalled roads maintained by local authorities.	Length of unmetalled roads maintained by local authorities.	Total of metalled roads.	Total of unmetalled roads.
		MILES.	MILES.	MILES.	MILES.	MILES.	MILES.
Ganjam and Rushikulya.	Ganjam ..	11.80	..	732	22	743.80	22
Vizagapatam ..	Vizagapatam ..	61.76	..	329	524	393.76	524
Godavari (Eastern and Western) ..	Godavari ..	4	..	713	264	717	264
Kistna (Eastern and Western) ..	Kistna ..	0.62	26.50	558	284	558.62	310.50
Nellore ..	Nellore ..	0.40	..	974	109	974.40	109
Bellary ..	Bellary ..	..	..	146	550	146	550
Cuddapah ..	Cuddapah ..	..	..	44	517	44	517
Kurnool ..	Kurnool ..	..	..	321	850	321	850
Coimbatore ..	Coimbatore ..	54.44	7.40	500	130	500	130
Salem ..	Salem ..	..	..	469	118.44	469	118.44
West Coast ..	West Coast ..	..	..	936	547	936	547
North Arcot ..	North Arcot ..	61	..	554	1,394	554	1,394
Chingleput ..	Chingleput ..	..	..	475	816	475	816
South Arcot ..	South Arcot ..	..	..	148	896	148	896
Tanjore and Negapatam.	Tanjore ..	..	..	1,433	..	1,433	..
Trichinopoly ..	Trichinopoly ..	..	..	607	77	607	77
Madure ..	Madure ..	20.87	..	694	439	694	439
Tinnevely ..	Tinnevely ..	..	..	164	1,337	164	1,337
Consulting Architect ..	Presidency ..	4.30	..	516	141	516.87	141
		..	..	568	684	568	684
		..	..	817	125	817	125
		..	..	..	..	4.30	..
Total ..		222.18	240.40	11,293	10,195	11,615.18	10,435.40

NOTE.—This statement does not include roads and streets within municipal limits.

24. *Government Brick and Tile Manufactory, Madras.*—About 6,945,603 bricks, 264,360 flooring tiles, 131,160 roofing tiles, 33,804 Mangalore pattern roofing tiles and a large quantity of terracotta were manufactured and supplied to Government works. 254,500 bricks and 22,750 tiles were sold to contractors and others at an advanced rate of more than 24½ per cent.

The tramway and the steam machinery plant was all at work and was found to be very useful, the pugging of the clay for bricks being a great improvement on the former plan of hand and bullock labour. Rupees 52,912 were expended in manufacturing bricks, tiles, terracotta, &c., and Rs. 8,455 at the lime kiln in manufacturing lime.

25. *Type Designs.*—Detailed drawings of doors and windows of taluk officers were prepared by the Consulting Architect and issued to the department as accompaniments to the standard plans. A design for a residence for Assistant Superintendents of Police was also drawn up, but the cost at Madras rates was found to be in excess of the limit allowed by code rules. In circulating the design, the Government remarked that it should not be regarded as a standard, but that it might be adopted in localities in which it was possible to construct such a bungalow for Rs. 5,970.

26. *Service Books.*—The orders with respect to the due and correct maintenance and the verification of service books of public servants are reported to have received careful attention at the hands of officers of the Public Works Department.

II.—PROGRESS OF WORKS.

I.—IMPERIAL—MILITARY WORKS.

27. *Ganjam.*—The only work in progress during the year was constructing a well for the use of the public, in lieu of the one reserved for the exclusive use of the regiment at Berhampur; estimate Rs. 920. The expenditure to the end of the year was Rs. 913. The rainfall having been exceptionally good, there was water to a depth of 15 feet in the well, but it was considered advisable to go to a further depth of 10 feet, and a revised estimate was under preparation.

28. The works in progress under repairs during the year were 19 in number, all of which were completed at a cost of Rs. 1,768 against an allotment of Rs. 1,800.

29. *Godavari (Eastern).*—Repairs to the military buildings at Samalkot were carried out at a cost of Rs. 38. Rs. 162 were spent on collection of materials for repairs of military lines and Rs. 326 were paid on account of compensation for quarters for Sergeant Instructors of the East Coast Volunteers. The total expenditure amounted to Rs. 526 against a grant of Rs. 540.

30. *Vizagapatam.*—The following minor works were completed at a cost of Rs. 1,148 against an allotment of Rs. 1,000:—

(1) Improvements to the regimental hospital, Vizianagram; estimate Rs. 545, outlay Rs. 530.

(2) Constructing a bath-room in the regimental hospital, Vizianagram; estimate Rs. 515, outlay Rs. 208.

(3) Constructing a well and new drains to flush the existing drains in the Native Infantry lines at Vizianagram; estimate Rs. 1,300, outlay Rs. 410.

There was no allotment for the latter work, the cost of which, including the previous year's expenditure (Rs. 1,051) exceeded the estimate because the well had to be sunk deeper than was expected. The well has proved efficient and is largely used.

31. The expenditure on repairs was Rs. 2,673 against an allotment of Rs. 2,500 for repairing the roads and military buildings in the cantonment of Vizianagram and also for paying assessment on military buildings at Vizagapatam and house-rent for medical subordinates.

32. *West Coast.*—New barracks for 30 men at West Hill, Calicut. The building was completed and occupied by the detachment. Rs. 13,638 were spent during the year against the grant of Rs. 13,798. The total outlay up to the end of the year was Rs. 35,243 against an estimate of Rs. 35,000.

33. Sheds for transport animals at Calicut. A supplemental estimate of Rupees 2,500 for wire fencing and improving the lines was sanctioned during the year and an outlay of Rs. 760 incurred in the collection of materials. The work was not completed owing to the non-acquisition of the additional land required.

34. Officers' mess at Malappuram. Walls of main building and out-houses were raised to their full height and roofing in progress; estimate Rs. 7,920. Rs. 6,179 were spent during the year against a grant of Rs. 5,920.

35. Swimming bath at West Hill, Calicut. Foundation trenches for the bath were dug, well sunk to the full depth of 70 feet and the steining built up to a height of 40 feet; estimate Rs. 8,000. An outlay of Rs. 1,993 was incurred against a grant of Rs. 1,992.

36. Four blocks of corrugated iron latrine for the Madras Infantry at Cannanore. Against an estimate and grant of Rs. 2,590, Rs. 1,000 were spent on materials which arrived too late from Bombay to complete the work within the year.

37. Constructing quarters for 8 men of the Army Hospital Native Corps, Calicut. Work approaching completion. Rs. 844 were expended against a grant of Rs. 1,650 and estimate Rs. 1,900.

38. The following minor works were completed:—

- (1) Compound wall to the apothecary's quarters at Malappuram; estimate Rs. 670, outlay Rs. 660.
- (2) Improvements to the hospital kitchen at Malappuram; estimate Rs. 510, outlay Rs. 487.
- (3) Masonry tank for the wash-house, Calicut; estimate Rs. 100, outlay Rs. 96.
- (4) Improvements to the commissariat bakery at Malappuram; estimate Rs. 50, outlay Rs. 50.
- (5) Banking road and demarcating foot-path in the cantonment of Malappuram; estimate Rs. 230, outlay Rs. 234.
- (6) Fixing lamp posts with lanterns at Malappuram; estimate Rs. 50, outlay Rs. 50.
- (7) Improvements to the drains and latrines of the barracks at Malappuram; estimate Rs. 125, outlay Rs. 114.
- (8) Providing beds to the guard-room at Malappuram; estimate Rs. 110, outlay Rs. 101.
- (9) Rebuilding the damaged embrasures in the fort at Cannanore; estimate Rs. 730, outlay Rs. 731.
- (10) Providing lightning conductor to the powder magazine at Mangalore; estimate Rs. 1,310, outlay Rs. 825.
- (11) Constructing a culvert on the cantonment main road at Mangalore; estimate Rs. 140, outlay Rs. 140.
- (12) Providing ammunition boxes for the Madras Infantry at Quilon; estimate Rs. 333, outlay Rs. 246.
- (13) Renewing the roof of the armoury, Volunteer Rifles, Tellicherry; estimate Rs. 370, outlay Rs. 354.

39. The expenditure on repairs was Rs. 26,804 against an allotment of Rupees 26,188 incurred in the upkeep of cantonment roads and military buildings at the several military stations in the division.

40. **Coimbatore.**—Constructing quarters for the Sergeant Instructor attached to the Madras Railway Volunteer Corps at Podanur. The expenditure was Rs. 2,950 against an estimate of Rs. 3,800, the savings being due to low tendered rates. The building was completed and the military authorities requested to take over charge.

41. The following minor works were completed:—

- (1) Providing a stand for Commander-in-Chief's tents at Ootacamund; estimate Rs. 60, outlay Rs. 56.
- (2) Providing ammunition box for the detachment of 8th Madras Infantry stationed at Ootacamund; estimate Rs. 15, outlay Rs. 15.
- (3) Constructing out-houses for Volunteer Instructor's quarters on Jail Hill, Ootacamund; estimate Rs. 860, outlay Rs. 865.
- (4) Laying on water pipe in Lawrence Asylum Press buildings at Ootacamund; estimate Rs. 70, outlay Rs. 74.

42. The total outlay under repairs was Rs. 10,992 against an allotment of Rs. 11,030, of which Rs. 2,530 were paid as compensation in lieu of quarters and rents of hired buildings for military subordinates. The rest of the outlay was incurred on repairs to the undermentioned military buildings and roads. The short outlay is due to the credit to this head on account of moiety of rent due from the Staff Captain, Royal Artillery, for the building used as his office; also to the late date on which an additional grant of Rs. 4,910 was made available:—

- (1) Lawrence Asylum buildings at Ootacamund; outlay Rs. 2,638.
- (2) Rest-house at Métnpálaiyam; outlay Rs. 47.
- (3) European warders' line on Jail Hill, Ootacamund; outlay Rs. 472.
- (4) Jail buildings at Ootacamund; outlay Rs. 49.
- (5) Quarters of Volunteer Instructor on Jail Hill, Ootacamund; outlay Rs. 285.
- (6) Roof of the Lawrence Asylum boys' school building at Ootacamund; outlay Rs. 100.

- (7) Road leading to sepoy's quarters on Stonehouse Hill, Ootacamund; outlay Rs. 59.
- (8) Old Sappers' lines at Ootacamund; outlay Rs. 21.
- (9) Girls' school, Lawrence Asylum, Lovedale, Ootacamund; outlay Rs. 1,626.
- (10) Military apothecary's quarters on Jail Hill, Ootacamund; expenditure Rs. 114.
- (11) Executive Engineer's office building used for Military Chief Engineer's office at Ootacamund; outlay Rs. 106.
- (12) Repairing servants' lines and repapering Principal's quarters, Lawrence Asylum, Ootacamund; outlay Rs. 1,769.
- (13) Making up road leading to rifle range at Ootacamund from Sigúr road; outlay Rs. 1,016.

43. **North Arcot.**—Repairs to one of the blocks of the European barracks at Ranipet to fit it for the accommodation of the office of the Pension Paymaster were carried out at a cost of Rs. 8.9.

44. **Negapatam.**—The building occupied by the Sergeant-Instructor of the South Indian Railway Volunteer Rifle Corps at Negapatam was repaired at a cost of Rs. 215 and municipal tax for the building, Rs. 55, was paid.

45. **Trichinopoly.**—A sum of Rs. 6,775 was spent in repairing several buildings and maintaining the cantonment roads at Trichinopoly.

II.—IMPERIAL—CIVIL BUILDINGS.

46. **Ganjam.**—The expenditure under repairs was Rs. 339 against a grant of Rs. 452 and the following works were executed: Making necessary alterations for locating combined Post and Telegraph offices in the old District Munsif's court at Aska; estimate Rs. 125, outlay Rs. 109.

47. Repairing the Post office at Sompeta. This work was completed by the Local Fund department in 1891-92. A sum of Rs. 230 advanced for the purpose was adjusted during the year.

48. **Godavari (Eastern).**—Compound wall to the Post office, Kunavaram (Wudigudem), an incomplete work of the previous year, was completed at a cost of Rs. 264 and handed over to the Postal department. Repairs to Post office, Wudigudem, Tuni and Bhadrachalam were carried out during the year at a cost of Rs. 191 against a grant of Rs. 200. Telegraph office and signallers' quarters, Cocanada, and Telegraph office, Rajahmundry, were repaired at a cost of Rs. 1,730.

49. **Vizagapatam.**—An additional room to Bimlipatam Post office was completed at a cost of Rs. 492 against an allotment of Rs. 480. Repairs to Post offices at Vizagapatam, Bimlipatam, Koraput and Párvatipuram were carried out at a cost of Rs. 698 against an allotment of Rs. 700. The Telegraph office at Vizagapatam was repaired at a cost of Rs. 235 against an allotment of Rs. 300.

50. **Kistna (Eastern).**—Repairs to the Post office at Bezwada were carried out at a cost of Rs. 110.

51. Telegraph offices at Bezwada and Masulipatam were repaired during the year at a cost of Rs. 310, but a portion of the work done on the Telegraph office at Masulipatam was not paid for.

52. **Kistna (Western).**—The Post office at Vinukonda and the Telegraph office at Guntur were repaired during the year.

53. **Nellore.**—The Post office at Kavali was repaired at a cost of Rs. 23.

54. **Bellary.**—Constructing Telegraph office, Guntakal; estimate Rs. 15,030, total outlay Rs. 14,748. This work was completed in September 1892 and handed over to the Telegraph department.

55.—Only two minor works were undertaken during the year and completed at a cost of Rs. 371.

56.—Five repair estimates were carried out at an outlay of Rs. 336.

57. **Cuddapah.**—A Telegraph office was attached to the Post office at Cuddapah at a cost of Rs. 405.

58.—Repairs to the Post office at Jammalamadugu and to the west verandah of Post office at Cuddapah were carried out at a cost of Rs. 110.

59. **Kurnool.**—Repairs to the Post offices at Nandyal and Pyápali were completed at a cost of Rs. 389.

60. **Salem.**—Repairs to Post offices at Salem, Suramungalam, Yercaud, Jalarpet, Dharmapuri and Vaniyambadi were completed at a cost of Rs. 1,193.

61. **North Arcot.**—A sum of Rs. 78 was spent on new works and Rs. 973 were incurred on repairs to Postal buildings.

62. **Coimbatore.**—A sum of Rs. 170 was allotted for constructing a porch to the Post office at Tiruppur which was completed with an expenditure of Rs. 164.

63. Rupees 950 were spent against an allotment of Rs. 1,000 for repairs to Postal and Rs. 536 against a grant of Rs. 200 for Telegraph buildings.

64. **West Coast.**—The Postal buildings at the undermentioned stations were repaired during the year :—

	Outlay. Rs.
(1) Chérambádi	211
(2) Cannanore	443
(3) Puttúr	16
(4) Muthancherry	14
(5) Mangalore	84
(6) Beypore	54
(7) Mallápuram	131
(8) Palghat	395
(9) Tellicherry	440
(10) Pandalur	4
(11) Devala	8

65. **South Arcot.**—A sum of Rs. 55 was spent from a grant of Rs. 244 on the construction of a well in the compound of the Post office at Tirdivanam. The well was sunk till solid rock was met, and there being no prospect of striking water, and the space available in the compound admitting of no other attempt being made, the work was abandoned and the unexpended grant, Rs. 189, surrendered.

66. Repairs to the Post office at Manchakkuppam were carried out at an outlay Rs. 88.

67. **Tanjore.**—The Post offices at Tanjore and Kumbakonam were repaired at an outlay of Rs. 297.

68. **Negapatam.**—The Post office at Membisil and Government Telegraph office at Negapatam were repaired at a cost of Rs. 31 and 85 respectively.

69. **Trichinopoly.**—Alterations to old Collector's cutcherry for the Postal department were made at a cost of Rs. 1,488. Teppakkulam Post office, Kothavalchavady Post office and compound wall of the Trichinopoly Post and Telegraph office, also the pandal of the latter, were repaired and the lightning conductor of the last building was improved, all at a cost of Rs. 315.

70. **Madura.**—Demarcation of lands belonging to Postal buildings, improvements to the Postmaster's quarters at Periyakulam and conversion of a portion of the taluk cutcherry at Tirumangalam into a Post office and Postmaster's quarters were completed, and improvements to the Post and Telegraph office at Ramnad were in progress, all at a cost of Rs. 1,814. Post offices at Védasandúr, Butlagundu and Ramnad were repaired at an outlay of Rs. 427.

71. **Tinnevely.**—For sinking a well in the compound of the Post office at Virudupatti Rs. 237 were paid to the Local Fund Engineer, and Rs. 296 were spent on repairs to the Post offices at Tenkasi, Palamcottah, Virudupatti and Sattur. Of these the third and fourth were repaired by the Local Fund Engineer.

72. **Presidency.**—Rs. 1,406 were expended on several minor works in the Post and Telegraph offices, Madras.

III.—PROVINCIAL—CIVIL BUILDINGS.

73. **Ganjam.**—The following works were completed or in progress :—

(1) New residence for the Collector at Chatrapur; estimate Rs. 24,900, outlay Rs. 5,115 against a grant of Rs. 5,000. All masonry and wood work up to the first floor and the walls of the upper storey were completed. Bressummers and wall plates for roof were being erected.

(2) Combined office for the Stationary and Town Magistrates at Berhampur. An outlay, Rs. 123, was incurred in anticipation of sanction to an estimate of Rs. 12,800 which was subsequently sanctioned.

(3) District Munsif's court at Aska; estimate Rs. 12,730. This work was completed and handed over to the Judicial department.

(4) Post office at Balliguda; revised estimate Rs. 2,900. The work was completed with the exception of a little whitewashing.

(5) Post office at Udayagiri; estimate Rs. 2,500. The work was completed with a total expenditure of Rs. 3,439.

(6) New record-room as an adjunct to the Collector's office at Chatrapur; estimate Rs. 5,160, outlay Rs. 2,263. Concrete in foundations laid and superstructure commenced.

(7) Sub-Registrar's office at Russelkonda; estimate Rs. 2,080. The work was completed.

(8) District Forest office at Chatrapur; estimate Rs. 2,500. The work was completed.

(9) Dead-house at Tekkali; estimate Rs. 730. Work completed.

(10) Masonry drains in the District Jail, Berhampur; estimate Rs. 1,320, expenditure Rs. 1,301. Work completed.

(11) Compound wall round the burial ground at Gopalpur; estimate Rs. 1,250, outlay Rs. 688. The wall was built and the gate had to be fixed.

(12) Sub-Registrar's office at Purushottapur; estimate Rs. 2,060, outlay Rs. 470. Materials collected and the door and window frames completed.

(13) Compound wall around the sub-jail and Sub-Magistrate's cutcherry at Sompéta; estimate Rs. 1,300, expenditure Rs. 294. The contractor agreed to complete the work by the end of the official year but failed.

74. The number of works in progress under repairs during the year was 10 and 9 of these were completed at a cost of Rs. 2,232 against a lump sum grant of Rs. 2,170.

75. **Godavari (Eastern).**—The following works were completed or in progress :—

(1) Additions to the Provincial College, Rajahmundry; revised estimate Rs. 13,600, outlay to the end of the year Rs. 15,672. The building, which was virtually finished in the previous year, was handed over to the Principal with the furniture and other fixtures required for the use of the laboratory.

(2) Quarantine ward, Central Jail, Rajahmundry; revised estimate Rs. 13,890. Compound wall finished. Iron gate in progress in Dowlaishweram workshops.

(3) Close prison, Central Jail, Rajahmundry; revised estimate Rs. 40,910. Compound wall almost finished.

(4) Improvements to Central Jail, Rajahmundry; estimate Rs. 2,680, outlay to the end of the year Rs. 2,932. The work was nearly finished.

(5) School-house, Bhadrachalam; estimate Rs. 6,000. This work was completed and handed over to the Revenue department.

(6) Improvements to building No. 4 in the District Jail, Rajahmundry, in order to convert it into an office for the Sub-Collector; estimate Rs. 5,020. The work was completed and handed over to the Revenue department.

(7) District Munsif's court, Rajahmundry; estimate Rs. 12,700, outlay Rupees 2,166 against a grant of Rs. 2,000. Wood work in progress in Dowlaishweram Workshops.

(8) Sub-registrar's office at Prattipad; estimate Rs. 2,470, expenditure Rupees 2,158. The work was almost completed.

(9) Improvements to sub-jail, Cocanada; estimate Rs. 2,200, outlay Rs. 1,427. Half of the masonry work completed and all the wood work ready.

(10) New verandah in front and rear of Sea Custom office, Cocanada; estimate Rs. 1,440. Work completed.

(11) Well for the Police force at Kota; estimate Rs. 2,410. The well is reported to be not efficient and some further work will be required to make it so.

76. Repairs to taluk cutcherry, Rámachandrapuram, District Munsif's court, Cocanada, and to the Public Works buildings, &c., in Dowlaishweram were carried out at a cost of Rs. 4,039.

77. **Godavari (Western).**—The following works were completed or in progress:—

(1) Deputy Tahsildar's cutcherry and out-houses at Razole; estimate Rs. 10,870. This was an incomplete work of 1891-92. Work completed and handed over.

(2) District Munsif's court-house at Amalápuram; estimate Rs. 13,800. Work completed and handed over.

(3) Sub-Registrar's office at Amalápuram; estimate Rs. 4,410. Completed.

(4) District Munsif's court-house at Tanuku; estimate Rs. 18,440, outlay Rs. 4,621 against a grant of Rs. 5,440. One wing to the main building raised to a height of 13 feet 6 inches and the other wing raised to 12 feet.

(5) First-class taluk cutcherry at Ellore; estimate Rs. 36,200, outlay to the end of the year Rs. 5,876. Materials being collected.

(6) Police station-house at Tallapúdi; estimate Rs. 1,490, outlay Rs. 687. Materials being collected.

78. Thirteen repair works were in progress or completed at a cost of Rs. 1,593.

79. **Vizagapatam.**—The following works were completed or in progress:—

(1) Special Assistant Agent's office, Koraput; estimate Rs. 10,300. The work was completed, but further liabilities to the extent of Rs. 647 having been incurred, the Estate Engineer was requested to pay the amount and debit the same to this department. This is a work in the Agency tract transferred to the Civil department in December 1892.

(2) Deputy Tahsildar's cutcherry with out-houses at Koraput; estimate Rupees 9,580. Work completed. This work was also transferred to the Estate Engineer.

(3) Deputy Tahsildar's cutcherry and sub-jail at Gajapatinagaram; estimate Rs. 8,800. The work was completed and handed over to the Revenue department in October 1892.

(4) Constructing 33 huts for the Reserve Police at Vizagapatam; estimate Rs. 5,720. Work completed and handed over to the Police department.

(5) Middle and Normal school-house at Gunupur; estimate Rs. 5,435, outlay Rs. 3,111 against an allotment of Rs. 4,935. The building was nearly completed except roofing. The lapse of grant and slow progress of the work were due to the sudden death of the contractor in January 1893 and constant rains in February and March 1893.

(6) Additions and alterations to the hill jail at Párvatipuram; estimate Rupees 13,300, outlay Rs. 2,931 against a grant of Rs. 2,050. Materials were collected and paid for. Rough stone foundations to one block laid 2 feet deep over 3 feet concrete. Excavation of foundation trenches to two other blocks and concrete under foundations of one block laid 1½ feet deep.

(7) General Duty Deputy Collector's office, Vizianagram; estimate Rs. 5,000. Work completed and handed over to the Revenue department.

80. A sum of Rs. 10,408 was spent during the year under minor original works against an allotment of Rs. 10,369. The principal works carried out are detailed below:—

(1) Sub-Registrar's office, Anakápallo; estimate Rs. 2,200. Work completed, except fittings of doors and windows.

(2) Alterations and improvements to Police Assistant Superintendent's quarters at Párvatipuram; expenditure Rs. 2,407. This work was completed and handed over in August 1892.

(3) Sub-Registrar's office, Gajapatinagaram; estimate Rs. 2,250. Work completed and handed over in October 1892.

(4) Provision store-room in the Lunatic Asylum, Waltair; estimate Rs. 1,320. Work completed and handed over in June 1892.

(5) Dismantling and rebuilding the Police station-house, Jagannadharajapuram; estimate Rs. 1,330. Work completed.

(6) Repairs to Police station-house at Narsapatam; estimate Rs. 2,210. Work completed.

(7) Converting the terraced roof of No. 3 cottage, Lunatic Asylum, Waltair, into a pent roof; estimate Rs. 1,130. Work completed and handed over in June 1892.

(8) Improvements to the school-house at Koraput; estimate Rs. 2,200, outlay Rs. 1,381. This is a work in the Agency tract transferred to the Estate Engineer.

81. The expenditure on repairs to public buildings was Rs. 1,987 against a grant of Rs. 2,151.

82. **Kistna (Eastern).**—The following works were completed or in progress:—

(1) Taluk cutcherry at Nandigama; estimate Rs. 31,400. Walls were raised nearly to the ground level, and most of the wood work completed in workshops. The progress on this work was much retarded by the prolonged rains from July to November 1892. Considerable difficulty was experienced in collecting materials and procuring skilled labour owing to the locality being far away from any large town; outlay Rs. 9,172.

(2) Taluk cutcherry, Masulipatam; estimate Rs. 36,400, outlay during the year Rs. 15,568, and to the end of the year Rs. 19,825. Work was actually started in June 1892, and nearly the whole of the superstructure was finished.

(3) Constructing record-room in the Collector's cutcherry at Masulipatam; estimate Rs. 10,214, outlay during the year Rs. 1,820 and to the end of the year Rs. 8,337. Lower storey was completed. Terrace of floor of upper storey also completed and the superstructure was in progress.

(4) Head Assistant Collector's cutcherry at Bezwada; estimate Rs. 16,900, outlay to the end of the year Rs. 13,185. The work was approaching completion.

83. **Kistna (Western).**—The following works were completed or in progress:—

(1) Taluk cutcherry at Sattenapalle. Completed.

(2) Taluk cutcherry at Gurazala. Basement up to 1 foot finished and materials under collection.

(3) Taluk cutcherry at Tenali.

(4) Sub-Registrar's office at Sattenapalle. Materials were under collection.

84. **Nellore.**—Deputy Collector's cutcherry at Atmakur; estimate Rs. 16,700, outlay to the end of the year Rs. 5,506. Materials collected. Concrete for foundations laid and masonry of foundations and basement was proceeded with. Tiles were imported from Calicut.

85. Head Assistant Collector's cutcherry at Gudur; estimate Rs. 18,800, outlay to the end of the year Rs. 5,835. Materials were in course of collection, but much progress in the construction of masonry work could not be made, as the site had not been placed at the disposal of the Public Works Department at the end of the year.

86. Constructing a court-room in the District Munsif's court at Ongole; estimate Rs. 4,700. The work was completed at an outlay of Rs. 4,688 and was handed over to the District Munsif.

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

(1) Reflooring two iron goods sheds; estimate Rs. 2,390, outlay Rs. 1,762. The work was nearly completed.

(2) Demarcation of Public Works Department lands in Buckinghampett. Completed.

(3) Second-class Police station at Podili; estimate Rs. 2,100, outlay to the end of the year Rs. 2,501. Completed.

(4) Second-class Police station at Rayavaram; estimate Rs. 1,010, outlay to the end of the year Rs. 1,140. Completed.

- (5) First-class Police station at Gudur; estimate Rs. 2,280, outlay to the end of the year Rs. 2,181. Work completed.
- (6) Eight Police huts at Náyudupéta; estimate Rs. 2,490; outlay to the end of the year Rs. 2,302. Work completed.
- (7) Five Police huts at Thettu; estimate Rs. 1,350, total outlay Rs. 1,254. Completed.
- (8) Improvements to the stable of the Collector's cutcherry at Nellore; estimate Rs. 1,490. The work was put in hand during the year and Rs. 1,045 were spent. The walls were raised and roofing materials were ready to be put up.
- (9) Wire fencing to the Police station at Gudur; estimate Rs. 240, outlay Rs. 152.
- (10) Enclosing a portion of workshop yard, Nellore, with compound wall; estimate Rs. 440. Completed.

88. The following buildings were repaired during the year:—

- (1) Superintending Engineer's quarters and office at Bezwada.
- (2) Northern sub-division office at Bezwada.
- (3) Metalling the road leading to the Public Works Department offices in Buckinghampett.
- (4) Deputy Tahsildar's cutcherry at Vinukonda.
- (5) Taluk office at Ongole.
- (6) Collector's bungalow, Nellore.
- (7) Old taluk office at Devarayapalli.
- (8) Sub-Collector's bungalow at Ongole.
- (9) Hill bungalow at Ongole.
- (10) Jailor's bungalow at Nellore.
- (11) Police Assistant Superintendent's bungalow at Ongole.
- (12) Bungalow at Kodavallur.
- (13) Taluk office at Kandukur.
- (14) Divisional office at Nellore.
- (15) Sub-Registrar's office at Atmakur.
- (16) Collector's bungalow at Kistnapatam.
- (17) Executive Engineer's quarters at Duggirala.
- (18) Assistant Engineer's quarters at Duggirala.
- (19) Executive Engineer's office at Duggirala.

89. **Bellary.**—District Munsif's court at Bellary; estimate Rs. 13,510. The building was completed and handed over to the Judicial department and the accounts were in process of adjustment.

90. Constructing a new subsidiary jail at Hospet and making certain improvements to the taluk office; estimate Rs. 9,775, total outlay Rs. 10,720. The work was completed.

91. First-class taluk office at Kudligi; estimate Rs. 26,225, total outlay Rupees 26,392. Completed and handed over to the Revenue department.

92. Deputy Tahsildar's office at Kampli; estimate Rs. 11,199, total outlay Rs. 11,117. The building was completed.

93. Constructing a Police ward in the compound of the civil hospital, Bellary, estimate Rs. 8,690, outlay Rs. 7,098. The work was commenced during the year, but delayed by a necessary change of site.

94. Additions and improvements to the combined Superintending and Executive Engineer's offices; estimate Rs. 6,040, outlay Rs. 6,142. Nearly completed.

95. Constructing four additional cells to the District Jail, Bellary; estimate Rs. 27,490, outlay Rs. 3,649. The work was begun in February 1893 and progress made in foundations and collection of materials.

96. Sub-Registrar's office at Ravadrug; estimate Rs. 2,750, outlay Rs. 559. This work also was commenced in February 1893 and materials were collected.

97. District Surgeon's quarters at Anantapur; estimate Rupees 11,435, total outlay Rs. 12,312. The building was completed and was occupied by the District Surgeon in March 1893.

98. Taluk office at Madakasira; no progress could be made and some materials were transferred to other works. Sanction to the estimate was awaited.

99. Improvements and alterations to the Taluk and Deputy Collector's office at Anantapur; estimate Rs. 8,180, total outlay Rs. 6,245. The building was not wholly vacated, and this caused delay and slower progress than would otherwise have been the case.

100. Police hospital at Anantapur; estimate Rs. 9,640, total outlay Rs. 3,337. There was delay in acquiring the land, so that work was not commenced till November 1892. The walls were raised about 7 feet and materials brought to site.

101. Sixteen minor works were put in hand during the year; six remained to be completed. The outlay was Rs. 5,834.

102. Forty-one repair works were commenced, of which 24 were completed at an outlay of Rs. 8,575.

103. **Cuddapah.**—The following works were completed:—

(1) Additions and alterations to the District Jail at Cuddapah; estimate Rs. 73,295, outlay Rs. 67,917.

(2) Combined office for the Tahsildar and Sub-Magistrate at Cuddapah; estimate Rs. 25,400, outlay Rs. 23,973.

(3) Two additional rooms to the Executive Engineer's office, Cuddapah; estimate Rs. 3,800, outlay Rs. 3,773.

(4) District Munsif's court at Proddatur; estimate Rs. 13,363, outlay Rs. 13,316.

(5) Sub-Registrar's office at Jammalamadugu; estimate Rs. 2,500, outlay Rs. 2,173. The lapse of grant, viz., Rs. 336, was due to savings on the estimate.

(6) Sub-Registrar's office at Sidhout; estimate Rs. 2,880, outlay Rs. 2,573.

(7) Sub-Registrar's office at Badvel; estimate Rs. 3,170, outlay Rs. 2,824.

(8) Sub-Registrar's office at Madanapalle; estimate Rs. 2,630, outlay Rs. 2,859.

(9) Sub-Divisional office at Madanapalle; estimate Rs. 2,915, outlay Rs. 2,896.

104. The following works were in progress:—

(1) Sub-Magistrates office at Pilér; estimate Rs. 10,851, outlay Rs. 4,826. Some delay was caused by the failure of a contractor. Work done chiefly foundations and collecting materials.

(2) Sub-Registrar's office at Kadiri; estimate Rs. 2,603, outlay Rs. 1,683.

(3) Taluk office at Rayachoti; estimate Rs. 34,560, outlay Rs. 128. No grant was allotted during the year. The outlay represents the amount paid for land compensation in the Revenue department.

105. A combined Sub-Divisional office and store-room at Madanapalle and a powder magazine for the Police at Cuddapah, minor works which were in progress in the previous year, were completed.

106. An outlay of Rs. 1,073 was incurred in constructing a Sub-Registrar's office at Pilér.

107. A sum of Rs. 1,668 was spent on repairs to 15 buildings.

108. **Kurnool.**—Taluk cutcherry at Markapur; estimate Rs. 23,398, outlay Rs. 27,047. Work completed.

109. District Munsif's court at Markapur; estimate Rs. 15,800, outlay Rupees 15,393. Completed and made over to the Judicial department.

110. Sub-Registrar's office at Giddalur; estimate Rs. 2,761, outlay Rs. 2,647. Completed and made over to the Registration department.

111. Sub-Registrar's office at Markapur; estimate Rs. 2,828, outlay Rs. 2,709. Completed.

112. Improvements * to Koilkuntla taluk cutcherry; estimate Rs. 5,680, outlay Rs. 2,382. Work in progress.

113. Taluk cutcherry at Allagadda; estimate Rs. 35,028, outlay Rs. 2,761. Some materials were collected and the foundation begun.

114. Munsif's court at Nandyál; estimate Rs. 16,700, outlay Rs. 800. Beyond collecting a few materials little could be done in the short time available.

* Transferred to repairs.

115. Out-houses and punkahs for the Head Assistant Collector's catcherry at Nandyal were provided at a cost of Rs. 1,149.

116. **West Coast.**—Combined office for the Tahsildar and Deputy Tahsildar at Mangalore; estimate Rs. 46,000. Superstructure of masonry raised to 4 feet. Door frames fixed and the work in fair progress. Rs. 9,300 were spent against the grant of Rs. 9,500, bringing the total outlay up to the end of the year to Rs. 13,625.

117. Sub-Registrar's office at Kasaragod; estimate Rs. 3,970, outlay Rs. 2,500. Superstructure completed and roofing in progress.

118. District Munsif's court at Karkal; estimate Rs. 20,270. An outlay of Rs. 1,800 was incurred in the purchase of materials against a grant of Rs. 2,000.

119. Improvements to the Deputy Collector's office at Puthur; estimate Rs. 3,680. Owing to the late sanction of the allotment, a sum of Rs. 540 only was spent in the collection of materials out of the grant of Rs. 1,500.

120. Collector's office, Calicut; estimate Rs. 1,94,620. All the different buildings were completed and made fit for occupation except the Currency office, which was being roofed in. Rs. 29,729 were spent against the grant of Rs. 29,000. The total outlay up to the end of the year was Rs. 1,87,544.

121. Sub-Registrar's office at Manantoddy; work nearly completed; estimate Rs. 7,610, outlay Rs. 5,362.

122. Constructing a Police hospital at Mallapuram; estimate Rs. 8,110. Rupees 2,004 were spent against a grant of Rs. 2,000 in the collection of materials.

123. Taluk catcherry at Perintamana; this work was completed and made over to the Revenue department at a total cost of Rs. 36,167 against an estimate of Rs. 37,400, the year's outlay having been Rs. 6,161 against a grant of Rs. 7,400.

124. The following works were also completed during the year and made over to the respective departments :—

(1) Sub-Registrar's office at Tirurangadi; estimate Rs. 3,900, outlay Rs. 4,094.

(2) Raising the compound wall of the Lunatic Asylum, Calicut; estimate Rs. 3,050, outlay Rs. 3,002.

(3) Sub-Registrar's office at Kuttiyadi; estimate Rs. 3,450, outlay Rs. 3,396.

(4) Sub-Registrar's office at Naduvannur; estimate Rs. 3,500, outlay Rupees 3,666.

(5) Sub-Registrar's office at Panur; estimate Rs. 3,500, outlay Rs. 3,578.

(6) Circular kitchen to the Central Jail at Cannanore; estimate Rs. 3,115, outlay Rs. 4,563.

(7) Cooking stove to the District Jail at Mangalore; estimate Rs. 138, outlay Rs. 244.

(8) Horsekeeper's shed to the Head Assistant Collector's residence at Kundapur; estimate Rs. 200, outlay Rs. 200.

(9) Improving and extending the cemetery at Mallapuram; estimate Rs. 1,330, outlay Rs. 1,267.

(10) Wire-fencing the compound of the District Munsif's court at Manjeri; estimate Rs. 670, outlay Rs. 678.

(11) Constructing drains in the Lunatic Asylum at Calicut; estimate Rs. 561, outlay Rs. 560.

(12) Providing skylights to the Sub-Registrar's office at Betatapudiangadi; estimate Rs. 27, outlay Rs. 27.

(13) Rebuilding a portion of the Lunatic Asylum wall at Calicut; estimate Rs. 200, outlay Rs. 192.

(14) Sinking a well in the taluk catcherry at Tellicherry; estimate Rs. 750, outlay Rs. 748.

(15) Reroofing the Police Inspector's quarters at Manantoddy; estimate Rs. 2,220, outlay Rs. 2,172.

(16) Rebuilding the outer wall of the Sub-Collector's bungalow at Tellicherry; estimate Rs. 310, outlay Rs. 240.

(17) Nine rain-gauge pillars in the South Canara district; estimate Rs. 320, outlay Rs. 240.

(18) Rain-gauge at Devala; estimate Rs. 55, outlay Rs. 43.

(19) Rain-gauge at Cherambadi; estimate Rs. 37, outlay Rs. 33.

125. Monsoon and other repairs were done to 34 buildings at a total cost of Rs. 10,502 and the buildings maintained in good order.

126. **Coimbatore.**—The following works were completed :—

(1) Sub-Registrar's office at Kodumudi; estimate Rs. 2,650, expenditure Rs. 2,623.

(2) Improvements to the Collector's office at Ootacamund; estimate Rs. 3,680, expenditure Rs. 3,435. This work was reported completed in the previous year, but some additional work was found necessary, which was done.

(3) Improvements to the huzur treasury at Coimbatore; estimate Rs. 3,020, expenditure Rs. 2,868.

(4) Sub-Registrar's office at Palladam; estimate Rs. 3,410, expenditure Rs. 3,877.

(5) Enclosing the compound around St. Thomas' Church at Ootacamund by a suitable wall to replace the old blue-gum fence; estimate Rs. 3,400, expenditure Rs. 3,462.

(6) Sub-Registrar's office at Gopichettipalaiyam; estimate Rs. 2,680, outlay Rs. 2,214.

127. The following works were in progress :—

(1) Government House at Ootacamund; estimate Rs. 7,79,150, outlay during the year Rs. 11,365, expenditure up to 31st March 1893 Rs. 7,51,674.

(2) Constructing six Police huts at Wellington; estimate Rs. 4,800, outlay to 31st March 1893 Rs. 3,212.

(3) Constructing a Police ward in the compound of the civil hospital at Gudalur; estimate Rs. 6,750, outlay Rs. 4,128.

(4) Additions and alterations to the Mount Stuart buildings used as Army Head quarters office at Ootacamund; estimate Rs. 16,100, outlay to the end of the year Rs. 8,631. The grant for the work was increased from Rs. 5,000 to Rs. 10,000, and the whole amount would have been spent had it not been for floods interrupting the ghât road and stopping the cartage of wood work.

128. A sum of Rs. 9,643 was spent on minor original works against an allotment of Rs. 10,226. The principal works carried out during the year are detailed below :—

(1) Sub-Registrar's office at Gudalur, outlay Rs. 2,041.

(2) Providing room for prisoners to be kept in day-time in the sub-jail at Pollachi, outlay Rs. 177.

(3) Providing glazed shutters to the windows of the Forest office at Coimbatore, outlay Rs. 88.

(4) Extensions and improvements to the machinery room in the Central Jail at Coimbatore, outlay Rs. 1,828.

(5) Improvements to the overseer's shed and out-houses at Dhârapuram, outlay Rs. 459.

(6) Providing an iron cistern for storing water at the Central Jail, Coimbatore, outlay Rs. 2,286.

(7) Providing a coach house at the Head Assistant Collector's bungalow at Pollachi, outlay Rs. 182.

(8) Improvements to Police station and lines at Ootacamund, outlay Rs. 1,841.

(9) Improvements to Deputy Tahsildar's catcherry at Coonoor, outlay Rs. 947.

(10) Constructing a sounding board in the court of the Subordinate Judge at Ootacamund, outlay Rs. 48.

(11) Improvements to rest-house at Coonoor, outlay Rs. 90.

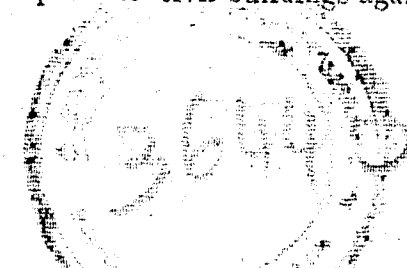
(12) Alterations to Volunteer head-quarters (old European jail) at Ootacamund, outlay Rs. 28.

(13) Improving drainage of St. Stephen's Church yard at Ootacamund, outlay Rs. 161.

(14) Constructing a masonry partition wall and fire place in the Public Works Secretariat office at Ootacamund, outlay Rs. 207.

129. A sum of Rs. 21,863 was spent on repairs to civil buildings against an allotment of Rs. 24,510.

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130. **Salem.**—The following major works were completed during the year:—

- (1) Sub-Registrar's office at Omalur; estimate Rs. 2,570, outlay Rs. 2,402.
- (2) Sub-Registrar's office at Atur; estimate Rs. 2,725, outlay Rs. 2,653.
- (3) Quarters for the clerks and servants of the Deputy Tahsildar's office at Yercaud; estimate Rs. 3,500, outlay Rs. 3,536. The accounts of the work had not been closed.

131. The undermentioned works were in progress:—

- (1) Taluk cutcherry at Tiruchengodu; estimate Rs. 33,660, outlay Rs. 6,044.
- (2) Taluk cutcherry at Tiruppattur; estimate Rs. 36,600, outlay Rs. 6,015.
- (3) Fifty close prison cells in the Central Jail at Salem; estimate Rs. 18,700, outlay Rs. 6,736.
- (4) Fifteen Police huts at Vaniyambadi; estimate Rs. 4,000, outlay Rs. 3,016.
- (5) Twenty-three Police huts at Tirupatur; estimate Rs. 6,500, outlay Rs. 2,001.
- (6) Ward for civil debtors in the Central Jail at Salem; estimate Rs. 6,330. Materials to the extent of Rs. 177 were received from Public Works Workshops, Madras.

132. A sum of Rs. 3,928 was spent during the year under minor original works against an allotment of Rs. 8,000, the excess being chiefly due to a larger debit by the Public Works Workshops than was anticipated. The principal works carried out are detailed below:—

- (1) Lightning conductor to Christ's Church at Salem, outlay Rs. 588.
- (2) Dead-house at Tiruchengod, outlay Rs. 229.
- (3) District Munsif's court at Namakal, outlay Rs. 1,043.
- (4) Second-class Police station-house at Dharmapuri, outlay Rs. 116.
- (5) Dead-house at Krishnagiri, outlay Rs. 363.
- (6) Renewing the roof of the school-house at Namakal, outlay Rs. 790.
- (7) Second-class Police station at Tiruppattur, outlay Rs. 1,209.
- (8) Renewing the roof of the sub-divisional officer's quarters and office at Salem, outlay Rs. 1,795.
- (9) Improvements to overseer's shed at Tiruppattur, outlay No. 187.
- (10) Providing iron grating to the hospital and kitchen wells in the Central Jail at Salem, outlay Rs. 790.
- (11) Improvements to Deputy Collector's office at Namakal, outlay Rs. 912.

133. A sum of Rs. 2,842 was spent on repairs against an allotment of Rs. 3,000.

134. **North Arcot.**—The District Munsif's court at Tirupati was fully completed at a cost of Rs. 18,032 and the building made over to the Judicial department.

135. Taluk cutcherries at Chandragiri and Wandiwash were commenced with an allotment of Rs. 7,000 each. Materials, such as burnt stone, teak-wood for doors, &c., were collected. Concrete for foundations laid. Basement for Wandiwash cutcherry completed. Outlay during 1892-93 Rs. 7,266 and Rs. 8,006 respectively.

136. The undermentioned major works were commenced during the year:—

- (1) Civil debtors' ward at the Central Jail, Vellore; estimate Rs. 6,280, outlay Rs. 5,062.
- (2) Quarantine ward at the Central Jail, Vellore; estimate Rs. 4,000, outlay Rs. 945.
- (3) Police line at Puthur; estimate Rs. 3,430, outlay Rs. 905.
- (4) Compound wall at Head Assistant Collector's office at Ranipet; estimate Rs. 4,030, outlay Rs. 3,274.

137. Nineteen minor works were in progress, of which eight were completed. The aggregate outlay during the year was Rs. 5,408.

138. Under repairs the outlay was Rs. 2,355. Sixteen works were in progress, of which seven were completed.

139. **Chingleput.**—The construction of 30 huts for the Reserve Police at St. Thomas' Mount (estimate Rs. 6,360), which had been stopped in the previous year owing to difficulties in connection with the site, could not be proceeded with, the question of land compensation not having been settled till late in the year.

140. The new bar room for the District court at Chingleput, an incomplete work of the previous year; was completed at a cost of Rs. 3,323.

141. The Sub-Registrar's office at Sathiavedu, commenced in 1891-92, was completed at a cost of Rs. 2,818.

142. The improvements to the coach-house at Government House, Guindy, a work of the previous year, was also completed by the Chingleput division before the transfer of the building to the Consulting Architect. The outlay was Rs. 2,427 against an estimate of Rs. 2,550.

143. Thirteen minor new works were under construction, of which twelve were completed. The expenditure was Rs. 4,556.

144. Twenty-six repair works were carried out including repairs connected with Government House, Guindy.

145. **South Arcot.**—New rooms for the Deputy Collector, treasury and stationery and stores at the Collector's cutcherry at Manjukkuppam, the extension of the buildings occupied by the Deputy Collector's office at Tirukoilur, and new taluk offices at Tirukoilur and Tindivanam were completed.

146. The new District Munsif's court at Tirukoilur, a work of the previous year, continued in progress. Walls of main building raised to 10 feet. Suits' and witnesses' sheds completed. Latrine half done.

147. A first-class Police station-house at Panruti was completed, but the building was not made over to the Police department.

148. New taluk office at Chidambaram. Owing to the limited space available at the site, work has been done in two sections. Concrete in one section was laid and masonry foundations raised 2 feet. Excavation of foundations of the other section (rear portion of the building) was in progress. Satisfactory progress was made in carpenters' work and the collection of materials.

149. Sub-Registrar's office at Mannargudi. Foundations completed and basement partly done. Tiles were brought to site, and doors and windows were being made up.

150. Taluk office at Tiruvannamalai. 176,000 bricks were collected, but the work was deferred until the completion of the taluk office at Chidambaram.

151. Four minor new works were carried out at an outlay of Rs. 2,000 and Rs. 4,537 were spent on 17 repair works.

152. **Tanjore.**—Sub-Registrar's office at Tirukatapully. Work commenced on an estimate of Rs. 4,030. The year's outlay was Rs. 864.

153. Sub-Registrar's office at Perallum. Superstructure of the main building was in progress and materials for the roof were under preparation. Compound wall completed; estimate Rs. 2,990.

154. Improvements to the old taluk cutcherry at Kumbakonam were completed at a cost of Rs. 3,187.

155. A new second-class Police station at Papanasam; estimate Rs. 2,580. Completed and handed over to the Police department.

156. On minor works the outlay was Rs. 1,491. Iron gratings to wells in the District Jail, Tanjore, and record-racks to the taluk cutcherry at Tanjore, were provided.

157. Five repair works were in progress including repairs to the Provincial College, Kumbakonam, the estimate for which was Rs. 1,740.

158. **Negapatam.**—Office and quarters for the Sub-divisional officer, Mannargudi, were built in 1891-92 at an outlay of Rs. 6,417. A staircase outside the building was constructed during the year at a cost of Rs. 51.

159. Sub-Registrar's office at Tiruturaipundi. Foundations and basement completed and a large quantity of teak-wood and other materials collected. The year's grant, Rs. 1,370, was fully spent.

160. Ten police huts were built at Nidamangalam; estimate Rs. 2,960, outlay Rs. 2,458. A sum of Rs. 442 on account of compensation for land remained to be adjusted.

161. Four minor new works were put in hand; expenditure Rs. 167. Two of them were completed.

162. Fifteen repair works were in progress and ten completed; the outlay was Rs. 785.

163. **Public Works Stores and Workshops.**—Out of the grant of Rs. 500 for minor new works and Rs. 863 for repairs to the Public Works Stores buildings, Rs. 194 and Rs. 763 respectively were spent. To the Public Works Workshops buildings, minor new works to the extent of Rs. 599 and repairs to the extent of Rs. 1,005 were carried out.

164. **Trichinopoly.**—The following works were completed or in progress during the year:—

(1) Extension of workshop at the Central Jail at Trichinopoly was completed under the supervision of the Jail Superintendent at a total cost of Rs. 4,904, of which Rs. 1,877 were spent in the previous year.

(2) Sub-Registrar's office at Musiri. Completed; outlay Rs. 3,239.

(3) Construction of drains in the Central Jail at Trichinopoly. This work, which was commenced by the Jail Superintendent in 1890–91 on an estimate of Rs. 6,160, was still in progress. During the year Rs. 1,188 were spent, the total outlay having been Rs. 5,194.

(4) First-class taluk cutcherry at Musiri. Foundation completed and brick-work raised to about 2 feet; all the materials and doors and windows were being got ready. Against the estimate of Rs. 34,405, Rs. 19,000 were expended, of which Rs. 12,000 were spent in the year.

(5) First-class taluk cutcherry at Jeyankondasolapuram; estimate Rs. 38,510. Rs. 5,984 in the year and Rs. 1,000 in the preceding year were laid out in collecting materials.

165. Alterations and improvements to the Central Jail at Trichinopoly under the supervision of the Jail department; alteration and improvements to the Collector's office (Royal Artillery barracks) at Trichinopoly and demarcating lands of civil buildings in the division were in progress; renewing the terrace of the main guard, the construction of a new anemometre staging at Trichinopoly and the provision of lightning conductors to the District Munsif's court and taluk cutcherry at Kulitalai were completed. The outlay on these minor and petty works amounted to Rs. 2,972.

166. A sum of Rs. 2,681 was spent on repairs to buildings.

167. **Madura.**—The following works were either completed or were in progress during the year:—

(1) Sub-Registrar's office at Mudukulathur, which was commenced in the previous year, was completed at a total cost of Rs. 3,841.

(2) Improvements to the Sea Custom office at Kulakarai; estimate Rs. 5,067. Work completed at an outlay of Rs. 5,067.

(3) Improvements to the lightning conductors attached to Tirumal Naik's Palace, Madura, were completed at a cost of Rs. 3,526.

(4) Providing additional accommodation to the Native college at Madura; estimate Rs. 12,470. This work was completed at an outlay of Rs. 12,674, of which Rs. 2,759 were spent in the year.

(5) Improvements and alterations to Tirumal Naik's Palace, Madura; estimate Rs. 8,570. All work completed with the exception of providing iron door near treasury room, providing some iron railings in the cashier's room and fixing the new treasury cage in the treasury room. The total outlay was Rs. 9,449, of which Rs. 5,831 were spent in the last two years. The estimate was under revision.

(6) Sub-Registrar's office at Vadasundur; estimate Rs. 2,600. Rs. 498 were spent in collecting materials.

(7) Sub-Registrar's office at Nattam. Rs. 500 were spent in collecting materials against an estimate of Rs. 2,810.

(8) Eleven Police huts at Usilampatti; estimate Rs. 3,730. An outlay of Rs. 1,002 was incurred in collecting materials.

168. Police stations at Appanore, Paiapatti, Nellakotta and Periyakulam; Police huts, Paiapatti, and court-room for Deputy Tahsildar's cutcherry at Tirupattūr, all of which remained incomplete at the end of the previous year, were completed. Providing entrance gate to the District Jail at Madura and construction of Police huts at Appanore were in progress. The outlay on these and other minor and petty works amounted to Rs. 8,245.

169. A sum of Rs. 9,731 was laid out on reroofing the blocks of the District Jail with Calicut tiles, on repairs to the Deputy Tahsildar's cutcherry at Mudukulattūr, Police Assistant Superintendent's bungalow at Ramnad and petty repairs to some other buildings.

170. **Tinnevely.**—The following works were completed or in progress during the year:—

(1) Improving District Munsif's court at Srivaikuntam; estimate Rs. 7,460. Improvements, as originally sanctioned, were finished in the previous year. Compound wall and verandah on the south side to the upstairs room were constructed in the year, and the whole work was completed at a cost of Rs. 6,766, of which Rs. 1,749 were spent in the year.

(2) A subsidiary jail to the taluk cutcherry at Ottapidāram was completed at an outlay of Rs. 6,608, of which Rs. 5,160 were spent in the year against the estimate of Rs. 6,510.

(3) Sub-Registrar's office at Kytar was completed at a cost of Rs. 3,326, of which Rs. 1,950 were spent in the year, the estimate being Rs. 3,460.

(4) Sub-Registrar's office at Srivaikuntam; estimate Rs. 3,470. A sum of Rs. 1,000 was spent in raising walls up to basement level and in getting ready wood work for roofing, &c.

(5) Improving English record-room of the Collector's office at Kokkarakulam; estimate Rs. 4,700. Rs. 478 were spent in collecting materials.

(6) Sub-Registrar's office at Sivagiri; estimate Rs. 2,920. Some materials were collected, but no payment was made for the same, nor was the work commenced owing to the site not having been handed over by the Revenue department.

171. Reconstructing Sea Custom office at Kulasēkarapatnam, providing lightning conductor to the taluk cutcherry and District Munsif's court at Srivilliputtūr, and improving lightning conductor to the Police magazine at Palamecottah, which were all incomplete at the end of the preceding year, and converting the old military barracks at Palamecottah into an office for the Superintendent of Police, were all completed, the outlay on these and other petty works being Rs. 3,186.

172. A sum of Rs. 5,641 was spent on repairs to the Sub-Collector's bungalow at Tuticorin, Collector's office at Kokkarakulam, Sub-Magistrate's office and sub-jail at Vilattukulam and some other buildings.

173. **Presidency.**—The following works were in progress or completed under the supervision of the Consulting Architect:—

(1) New Law Courts, Madras; estimate Rs. 13,06,640, total expenditure Rs. 12,28,296.

(2) Victoria Technical Institute and Connemara Free Library; estimate Rs. 3,56,255, expenditure Rs. 2,96,665.

(3) Additions to the Chemical Laboratory, Presidency College; estimate Rs. 32,125, expenditure Rs. 27,840.

(4) Workshops for the College of Engineering at Chepāk; estimate Rupees 56,126, expenditure Rs. 13,365.

(5) Providing eight roof lights to the record-room of the Revenue Board office; estimate Rs. 3,475, expenditure Rs. 3,650. Completed.

(6) Enclosing a piece of ground around Munro Statue; estimate Rs. 4,595, expenditure Rs. 4,722. Completed.

(7) Filling in tank in the compound of Government House, Madras; estimate Rs. 13,020, expenditure Rs. 12,688. Completed.

(8) Latrine for students at the Medical College; estimate Rs. 7,125, expenditure Rs. 7,247. Completed.

(9) Providing iron gates for Government House, Madras; estimate Rs. 4,391, expenditure Rs. 4,367. Completed.

- (10) Hygiene Laboratory at the Medical College; estimate Rs. 18,173, expenditure Rs. 18,304. Completed.
- (11) Improvements to Resident Surgeon's quarters at the General Hospital; estimate Rs. 12,478, expenditure Rs. 14,182. Completed.
- (12) Third storey at the General Hospital; estimate Rs. 66,400, expenditure Rs. 63,328.
- (13) Improvements to coach house and stables of Government House, Madras; estimate Rs. 2,970, expenditure Rs. 2,588. Completed.
- (14) Out-office to the hospital at Her Majesty's Penitentiary; estimate Rs. 5,325, expenditure Rs. 5,040.
- (15) Muhammadan Branch Normal School at Triplicane; estimate Rs. 6,640, expenditure Rs. 5,186.
- (16) Reroofing Banqueting Hall, Government House, Madras; estimate Rs. 4,365, expenditure Rs. 4,108. Completed.
- (17) Hobart and Argyle ward at the General Hospital; estimate Rs. 19,590, expenditure Rs. 16,594.
- (18) Improvements to the Police station, Egmore; estimate Rs. 2,755, expenditure Rs. 2,185.
- (19) Additions and improvements to out-patient dispensary, General Hospital; estimate Rs. 22,000, expenditure Rs. 20,546.
- (20) Erecting a verandah on the south side of the office of the Director of Public Instruction at the Old College; estimate Rs. 5,446, expenditure Rs. 572. Work carried out up to basement level.
- (21) New criminal enclosure at the Lunatic Asylum; estimate Rs. 60,680, expenditure Rs. 56,902.
- (22) Converting the Auxiliary Medical school into quarters for two apothecaries; estimate Rs. 3,070, expenditure Rs. 2,554. Completed.
- (23) Police mortuary and enlarging the Police station, Wall Tax Road; estimate Rs. 4,470, expenditure Rs. 3,515. Nearly completed.
- (24) Urinal and latrine for the clerks of the Chief Secretariat at Fort St. George; estimate Rs. 4,551, expenditure Rs. 4,515. Completed.
- (25) Additions and alterations to Government Press buildings; estimate Rupees 5,545, expenditure Rs. 4,718. Completed.
- (26) Boundary wall for the Lunatic Asylum; estimate Rs. 15,820, expenditure Rs. 2,916.
- (27) Seventy-five huts and 12 latrines for native keepers, Lunatic Asylum; estimate Rs. 13,130, expenditure Rs. 824.
- (28) Additions to the Accountant-General's office; estimate Rs. 6,892, expenditure Rs. 3,156.
- (29) Providing additional accommodation at the School of Arts; estimate Rs. 17,910, expenditure Rs. 18,088. Completed.
- (30) Adding an upper storey to the Doctor's quarters, Government House, Guindy; estimate Rs. 4,665, expenditure Rs. 3,594.
- (31) Quarters for native nurses and converting the nurses' quarters into store rooms at the Lying-in hospital; estimate Rs. 5,460, expenditure Rs. 4,971.

174. Rupees 32,559 were expended under minor original works.

175. Under repairs, Rs. 83,209 were expended for the annual and general repairs of buildings in charge of this division, of this sum Rs. 3,523 was for municipal taxes on certain Public Works Department buildings and Rs. 1,495 for the conservancy of the floating and Senate house latrines at Chépāk.

IV.—PROVINCIAL—COMMUNICATIONS.

176. **Ganjam.**—The following works were in progress or completed:—

- (1) Constructing Mahasinghi bridge; estimate Rs. 41,200, outlay Rs. 2,351 against a grant of Rs. 2,344. During the year under review, most of the wells were sunk to the required depth and bricks and lime stone collected. The work was in abeyance pending the settlement of the question regarding the Mohanagiri ghāt road, which is being investigated by the Sub-divisional officer.

(2) Constructing Berhampur-Govindapur road. Rs. 266 were allotted to cover the expenditure incurred in April 1892 for the work done in the previous year. The remaining work is being carried out by the Local Fund department.

(3) Constructing Tekkali-Anantagiri road; estimate Rs. 23,500, outlay Rs. 12,108 against an allotment of Rs. 12,779. Metalling and gravelling completed in some miles. Materials for the incomplete portions were at roadside. Unusual heavy rain in February and March 1893 prevented the completion of the work, hence the lapse of grant.

(4) Remaking the road from 8th to 18th mile of Battili-Hiramandalam road; estimate Rs. 11,520, outlay Rs. 2,487 against a grant of Rs. 2,475. The work was completed and will be handed over to the Local Fund department after inspection.

(5) Metalling the road from Udayagiri to Kalingia; estimate Rs. 4,250, expenditure Rs. 2,668 against an allotment of Rs. 2,602. The work was in progress.

(6) Constructing Ichahapuram-Jarada road; estimate Rs. 30,000, outlay Rs. 8,057 against an allotment of Rs. 9,468. Thirty-four culverts completed and 7 in progress, 5 road dams completed and one in progress. A large quantity of materials was collected at the quarries, but they could not be carted to site owing to continuous and heavy rains, hence the lapse of grant.

(7) Constructing Kallikota-Boyirani road. A sum of Rs. 55 was spent on the road in employing coolies for surveying and levelling. An estimate, amounting to Rs. 74,300, was submitted for sanction after the close of the year.

(8) Constructing road from Kalingia to Tekkalali; estimate Rs. 7,230, outlay Rs. 1,782 against a grant of Rs. 2,000. Materials under collection, earthwork and metal spreading in progress.

(9) Improving Govindapur-Lohagudi road; estimate Rs. 2,450, expenditure Rs. 1,190. The work was virtually completed.

(10) Improvements to slopes east and west approaches of Baduvari Nalla half mile east of Dharmapur bungalow; estimate Rs. 1,320, expenditure Rs. 465. The work was in progress.

(11) Repairing the damaged bridge near Kalingia in Kalipana road; estimate Rs. 990, expenditure Rs. 494. The work was in progress.

177. The expenditure under repairs was Rs. 453 against a grant of Rs. 1,500. Explanation for the short outlay has not yet been furnished by the Executive Engineer.

178. **Vizagapatam.**—Completing road from Pottinghi to Koraput; estimate Rs. 2,80,205, outlay Rs. 27,183 against a grant of Rs. 27,117. Outlay to end of 1892-93 Rs. 3,08,256. Karandi bridge nearly completed and inspection bungalow at Koraput completed. All bridges except Karandi completed. This work was transferred to the Civil department in December 1892.

179. The annual grant for repairs was Rs. 16,235 against which an outlay Rs. 15,982 was incurred in maintaining the following roads:—

	RS.
(1) Pottinghi ghāt road	9,941
(3) Pottinghi-Koraput road	5,521
(3) Turner's ghāt road	517
(4) Taking levels of the Galikonda ghāt	3
Total	15,982

The first three works mentioned above were transferred to the Estate Engineer.

180. **Coimbatore.**—Reconstructing the Farewell bridge at 14th mile of Ootacamund-Kullar road. Work completed; estimate Rs. 18,100, outlay during the year Rs. 2,433, outlay up to 31st March 1893 Rs. 16,045.

181. The following works were in progress:—

(1) Constructing an iron girder bridge on the Kullar river; estimate Rupees 28,600, outlay during the year Rs. 27,547. Outlay up to 31st March 1893 Rupees 29,350.

(2) Constructing an iron girder bridge on the Buriyar river; estimate Rs. 15,600, outlay during the year Rs. 13,540. Outlay up to 31st March 1893 Rs. 14,506. This bridge was completed and opened for traffic.

(3) Constructing a new bridge across Kullar river; outlay Rs. 3,659.

182. An outlay of Rs. 511 was incurred on the reconstruction of a bridge over Burnfoot lake sluice on Ootacamund-Coonoor road.

183. The following repairs were executed at a cost of Rs. 31,197 against a grant of Rs. 30,000. The excess was mainly due to payments for labour in connection with the removal of landslips which blocked up the road during the heavy rains in March 1893:—

- (1) Annual maintenance of Ootacamund-Kullar road; outlay Rs. 31,121.
- (2) Special repairs to Ootacamund-Kullar road; outlay Rs. 76.

184. **North Arcot.**—The only work that was undertaken under this head was the construction of road dam at the 31st mile on the road from Arni to Wandiwash. This work was virtually finished. The expenditure was Rs. 3,674 against an estimate of Rs. 4,120.

185. **West Coast.**—Improvements to the Vayitri-Gudalur road; estimate Rs. 6,59,337, outlay Rs. 6,31,843. The road was completely metalled and consolidated. All portions passing through village bazaars were broadened and sides walled. Revetments were completed in all portions that were necessary. Diversions were made in such places where the progress of work might impede the traffic. On the whole the road is now in capital order throughout.

Kunnoth Bridge.—Materials were collected.

Kunnumbetta Bridge.—In progress. The iron girders were raised 7 feet. Abutments and wings raised to 6 feet.

Seepathi Bridge.—Left abutments and wings were built up to the bed stone level, and right abutments and wings to 3 feet below bed stone level. All the bridges were completed.

186. The following minor works were completed:—

- (1) Cooly lines at Pudupadi; estimate Rs. 1,100, outlay Rs. 1,193.
- (2) Out-houses for the inspection shed at Pudupadi; estimate Rs. 760, outlay Rs. 695.
- (3) Out-houses for the inspection shed at Tamracheri; estimate Rs. 570, outlay Rs. 558.

187. The whole road from Calicut to Vayitri and Gudalur (61 miles) was maintained during the year in excellent order and kept open for traffic at a cost of Rs. 53,750 against a grant of Rs. 56,300.

188. **South Arcot.**—Work necessary for completion of the bridges newly built over the Ponnai and the Gaddilam was carried out at an outlay of Rs. 355.

189. **Madura.**—Bridge over the Suruliyar at Uttamapalayam; estimate Rupees 36,840. Two of the four arches were completed and wings raised to 8 feet above springing. The outlay was Rs. 30,779, of which Rs. 16,684 were spent in the year and a sum of Rs. 2,064 was due to the late contractor.

190. Bridge across the Suruliyar at Virapandi; estimate Rs. 31,900. Two arches were completed, the expenditure having been Rs. 23,159, of which Rs. 11,986 were spent during the year.

191. **Presidency.**—Rs. 13,501 were paid to the Madras Municipality for maintaining the roads, bridges on the Cooum river and the telegraph line.

V.—PROVINCIAL—MISCELLANEOUS PUBLIC IMPROVEMENTS.

192. **Godavari (Eastern).**—The roads and drainage culverts, &c., in Sappers cantonment were repaired at a cost of Rs. 362 against a grant of Rs. 300.

193. **Coimbatore.**—A sum of Rs. 902 was spent on the following works against an allotment of Rs. 900:—

(1) Improvements to Stonehouse hill at Ootacamund; outlay Rs. 888.

(2) Fixing stop-cock in 2-inch pipe on Jail Hill, Ootacamund; outlay Rs. 14.

194. A sum of Rs. 403 was spent on repairs under this head.

195. **West Coast.**—The following works were carried out during the year:—

(1) Rough stone revetment to protect the river foreshore opposite the public offices at Ponnani; estimate Rs. 2,140; outlay Rs. 1,971.

(2) Improvements to a well at Devala; estimate Rs. 1,000, outlay Rs. 985.

196. **South Arcot.**—A sum of Rs. 104 was spent on account of compensation for lands taken up in the previous year for the drainage channel cut to carry off water from the fields on the north of Tiruppappuliyur flood banks into the Gaddilam river.

197. **Negapatam.**—Improvements to the wharf wall at Thoputhorai; estimate Rs. 780. Work in progress. More than three-quarters of the brickwork had been done and stones collected. The outlay was Rs. 400. Ramps on either side of the main town drain on the sea beach road at Negapatam were completed at an outlay of Rs. 100.

198. **Presidency.**—Rs. 11,753 were expended in maintaining the Chopak Park and Marina and maintaining grass plots and trees in the old fishing village and conservancy of the Cooum river.

VI.—LOCAL INCORPORATED.

199. **Rushikulya.**—The Aska and Surada road was maintained at a cost of Rs. 400.

200. **Godavari (Eastern).**—Widening and gravelling the Godavari left embankment in the first four miles below the anicut for adoption as a road was completed at a cost of Rs. 9,555 against the estimate of Rs. 9,100. The outlay during the year was Rs. 1,028 against an allotment of Rs. 574.

201. The ordinary repairs to Kovur-Munjair junction canal were carried out at a cost of Rs. 4,488.

202. **Godavari (Western).**—The following works were completed during the year:—

(1) Constructing an iron girder bridge at the 20th mile of the Khandavall road; estimate Rs. 6,950, outlay Rs. 2,071.

(2) Widening the roadway of the Singaram irrigation sluice between the Nidadavolu and Chettipet; estimate Rs. 250.

(3) Contribution from Local funds for diversion of river bank at Pattisam, 20 miles 2 furlongs from Vijesweram; estimate Rs. 814.

(4) Contribution from Local funds for diversion of river bank at 11 miles 2 furlongs near Komaradevam; estimate Rs. 1,120.

(5) Constructing culvert over Palivela drain at Ralli; estimate Rs. 730.

203. **Kistna (Eastern).**—Constructing Jubilee Museum and Technical institute at Bezvada; estimate Rs. 19,006, outlay Rs. 3,849 during the year. All the iron work, roofing, ornamental parapet work and plastering to ceiling and walls were completed. The work remaining to be done was flooring, and the ornamental finishing off with terracotta work round parapets, &c., and the leaded glass windows which had not been received from the School of Arts, Madras.

204. Constructing a bridge of three arches over Ryve's canal; estimate Rs. 17,600, outlay during the year Rs. 7,289, and to the end of the year Rs. 17,750. The work was nearly completed.

205. **Cuddapah.**—The only work undertaken was carried out by famine labour, viz., the Gurameonda-Galivedu road, at a cost of Rs. 1,603 against an estimate of Rs. 1,800.

206. **Kurnool.**—A total length of 38 miles of road was in charge of this division during the late famine. Metal and gravel were collected by famine labour. The roads were handed back to the District Board after the close of famine.

207. **Salem.**—The grant for completing the Thalavasal bridge, viz., Rs. 2,517, was fully utilized. The bridge was finally completed and accounts closed.

208. **North Arcot.**—The construction of the causeway across the Palār river on the road from Ranipet to Arcot was resumed with an allotment of Rs. 31,000 and completed. The causeway was opened by His Excellency the Governor on the 12th July 1892 and named "The Wenlock Causeway." To give additional security in times of flood a rough stone apron was put in below the causeway and the road-way gravelled. Lamps have been only lately supplied from the Public Works Workshops and chains from Leighton and Co. have only just been received. The cost of these works was met from the savings on the estimate of Rs. 55,000. The causeway has met a very decided want and is much appreciated locally.

209. **South Arcot.**—Sixty miles of roads along river embankments and tank bunds were repaired at an outlay of Rs. 2,460 against a grant of Rs. 2,689.

210. **Tanjore.**—One hundred and one miles of roads on river embankments were maintained at a cost of Rs. 5,729.

211. **Negapatam.**—A culvert on road No. 63 over Pokkuvoikal was constructed on an estimate Rs. 3,000, of this amount Rs. 1,500 was contributed by the Local Fund Board.

212. Forty-five and a half miles of roads on river embankments were maintained at an outlay of Rs. 3,659.

213. **Trichinopoly.**—Road No. 20 from Sirudayur to the lower anicut *via* Sankarapur and the Iyar Konakurai flood bank were maintained at a cost of Rs. 1,001 and 70 respectively and breaches on the former were closed at an outlay of Rs. 155.

214. **Tinnevely.**—A sum of Rs. 180, the Local Fund contribution, was spent on metalling the road running along the bund of the Kothenkulam tank.

VII.—LOCAL EXCLUDED.

215. **Godavari (Eastern).**—The repairs to Marine Villa, Cocanada, which were in progress in the previous year, were completed at a cost of Rs. 1,871, the outlay during the year having been Rs. 518. The repairs carried out were satisfactory, except to the front verandah, which leaked considerably owing to the verandah being 14½ feet wide and a sufficient rise for this breadth not being feasible.

216. A new cupola to the Hope Island lighthouse was fitted at a cost of Rs. 822.

217. **Vizagapatam.**—A sum of Rs. 57 was spent in fixing demarcation stones to define the limits of the Bimlipatam port. The Port Officer having stated that the work done was insufficient as the backwater had not been demarcated, he was requested by the Executive Engineer to refer the matter to the Collector to define the boundaries of the backwater.

218. **Buckingham Canal.**—Repairs to the lighthouse at Pulicat were completed.

219. **West Coast.**—The following minor works were completed:—

(1) Providing ventilation to the lantern of the lighthouse at Calicut; estimate Rs. 150, outlay Rs. 139.

(2) Retvetting an erosion on the north-west side of the foreshore at Cochin; estimate Rs. 560, outlay Rs. 567.

(3) Improvements to the Cruz Milagre dam; estimate Rs. 57, outlay Rs. 57.

220. The following works were in progress:—

(1) Providing lightning conductor to the lighthouse at Calicut; estimate Rs. 610, outlay Rs. 72.

(2) Constructing quarters for a lightkeeper of the lighthouse at Mangalore; estimate Rs. 1,480, outlay Rs. 1,000.

(3) Improvements to the lighthouse at Cochin; estimate Rs. 500, outlay Rs. 360.

221. A sum of Rs. 1,451 was spent on repairing the lighthouses at Cannanore and Tellicherry, the flagstaffs at Beypore and Mangalore, and the Port office building at Beypore.

222. **South Arcot.**—Quarters for the head signaller and two lightkeepers at the flagstaff at Cuddalore were constructed at an outlay of Rs. 2,413. A bath-room and well for the head signaller's quarters were under construction; outlay Rs. 250.

223. Demarcating with stones the limits and making surveys of the port of Cuddalore and Porto Novo were in progress. The expenditure was Rs. 261 and Rs. 257 respectively.

224. **Negapatam.**—Three huts for the use of lightkeepers at Point Calimere were in progress on an estimate of Rs. 420 and were nearly completed. The expenditure was Rs. 380.

225. Four repair works including repairs to the value of Rs. 500 to the lighthouse, Negapatam, were carried out at a total cost of Rs. 723.

226. **Tinnevely.**—Corrugated iron goods shed at Tuticorin; estimate Rs. 9,400 and expenditure Rs. 8,899. The work was completed as per estimate of Rs. 8,700, but some extra work required to rectify the defects in the original design remained to be done.

227. The port lands at Tuticorin were demarcated at an expense of Rs. 353.

228. Repairs to the Light Superintendent's and lightkeeper's quarters on Hare Island were carried out and replacing lightning conductor and repairs to the lighthouse at Muttam were completed with the exception of fitting up two cast-iron gratings for the lower floor; outlay Rs. 827.

229. **Madura.**—The lightning conductor attached to the light-house at Pamben was improved at an outlay of Rs. 23.

230. Improvements and repairs to the Tumkum bungalow at Madura were in progress on estimates amounting to Rs. 4,295. The outlay in the year was Rs. 1,932.

231. **Presidency.**—Rs. 4,316 were expended on original works and repairs to the Senate House.

VIII.—MISCELLANEOUS—DEPOSITS CONTRIBUTIONS.

232. **Kistna (Eastern).**—A well was constructed in the compound of the Police station-house at Bezvada at a cost of Rs. 593.

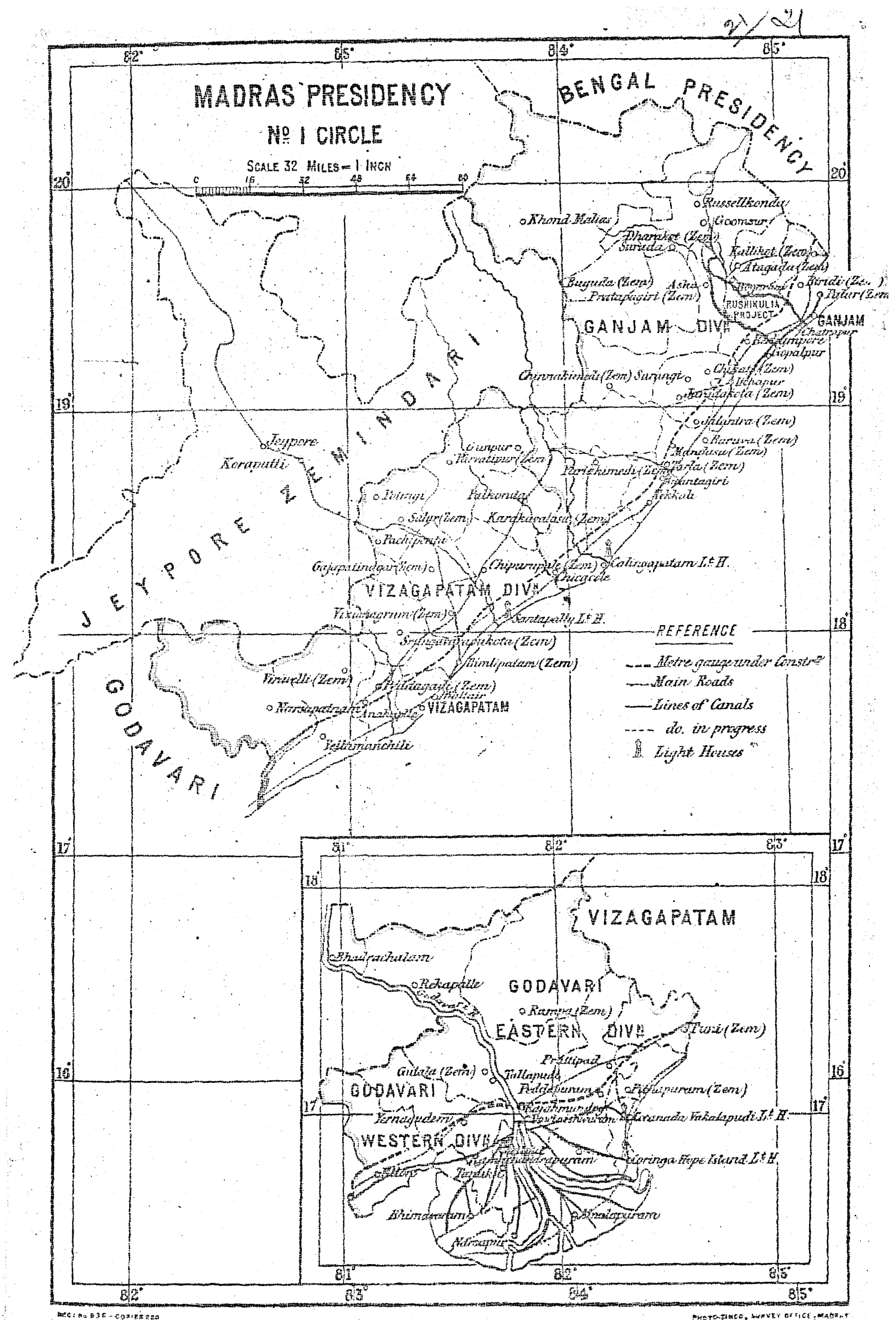
233. **Bellary.**—Municipal high school at Anantapur; estimate Rs. 15,777. A new site was selected, approved and land made over to this department in October 1892, the original site having been abandoned, as the whole of the ground was made soil. A revised estimate for the work was submitted and sanction awaited. It was subsequently decided to construct the building from Provincial funds.

234. **Coimbatore.**—Constructing out-houses and improving Sergeant Instructor's quarters, Lawrence Asylum, Ootacamund. The work was completed at an outlay of Rs. 2,081, which was met from Asylum funds.

235. **Salem.**—The contribution of Rs. 1,000 for Appannasamudram anicut across Vasistanadi was fully spent.

236. A contribution of Rs. 270 was granted for improvements to Reid Sahib's anicut. The work was in progress.

237. **Presidency.**—Rs. 1,959 were expended during the year in carrying out certain works for the Military Female Orphan Asylum buildings.



MADRAS PRESIDENCY

NORTH-WEST CIRCLES

SCALE 32 MILES - 1 INCH

REFERENCE

--- Broad gauge Railways Opened to traffic

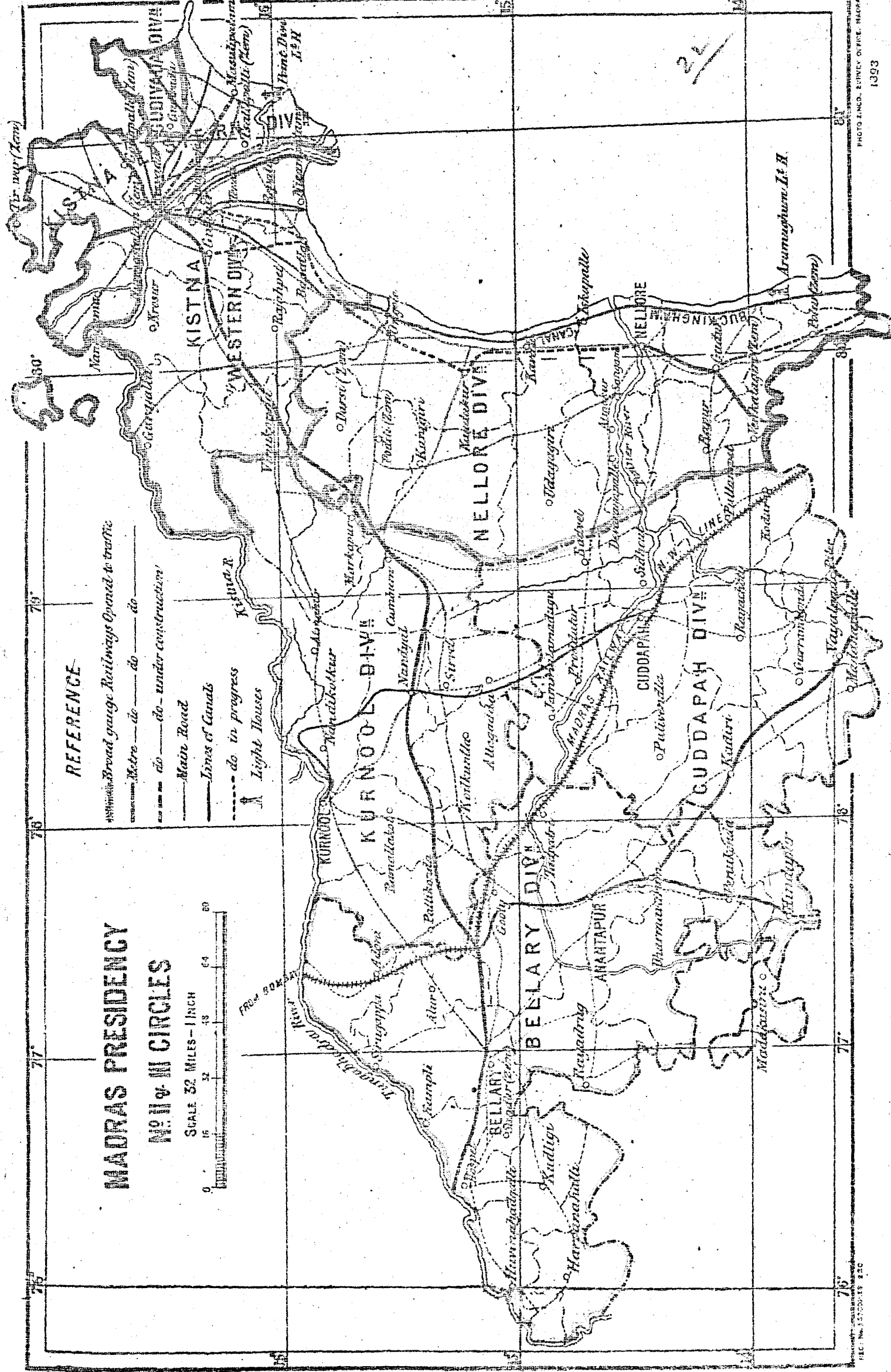
--- do do do under construction

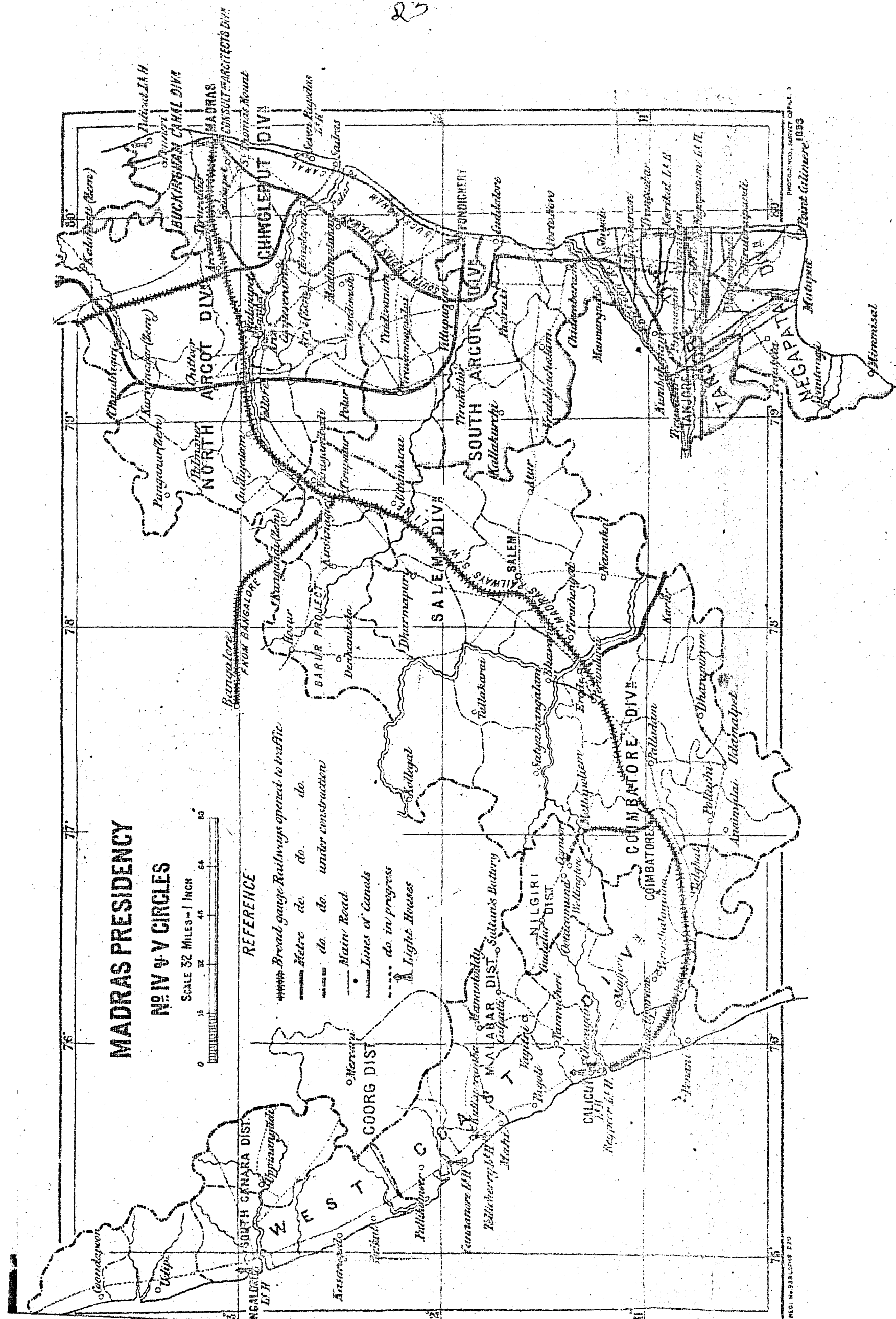
--- Main Road

--- Lines of Canals

--- do in progress

--- Light Houses





MADRAS PRESIDENCY

NOVI CIRCLE

SCALE 32 MILES = 1 INCH

REFERENCE

- Metz Gauge Railways Covered
by Traffic.*
- Dr. under Construction.*
- Main Roads.*
- Lines of Cuts.*
- Dr. in Progress.*
- Light Houses.*

