

ADMINISTRATION REPORT

OF THE

PUBLIC WORKS DEPARTMENT,

(GENERAL, BUILDINGS AND ROADS BRANCH,)

MADRAS PRESIDENCY,

FOR THE YEAR

1891-92.

MADRAS:

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1892.

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FOR THE YEAR 1891-92.

I.—GENERAL REMARKS.

Administration.—Colonel J. Pennycuik, R.E., continued in charge of the department as Chief Engineer and Secretary to Government and was present throughout the year except for a three months' absence on privilege leave. During this interval Mr. G. T. Walsh, M. INST. C.E., Chief Engineer for Irrigation and Joint Secretary to Government, Irrigation Branch, was appointed to officiate as Chief Engineer, I Class, and Secretary to Government, with charge of the Irrigation Branch, the General, Buildings and Roads Branch being administered by Lieut.-Colonel A. C. Smith, R.E., with the officiating rank of Chief Engineer, II Class, and Joint Secretary to Government.

2. *Circle Charges.*—The circle charges were administered as follows:—The I Circle, with head-quarters at Dowlaishweram, and the II Circle, head-quarters Bezvada, were throughout the year in charge of Mr. G. D. Wybrow and Mr. J. Hannan, respectively. The III Circle, head-quarters Bellary, was held by Colonel H. Smalley, R.E., until November 1891, when he proceeded on furlough. Mr. J. W. Martin then assumed charge of the circle and administered it for the remainder of the year. The IV Circle, head-quarters Coimbatore, and V Circle, head-quarters Madras, were throughout the year in charge of Lieut.-Colonel R. R. E. Drake-Brockman, R.E., and Lieut.-Colonel D. McNeil Campbell, R.E., respectively. The VI Circle, head-quarters Trichinopoly, was held by Lieut.-Colonel A. C. Smith, R.E., until April 1891, when he was transferred to the Secretariat as Acting Joint Secretary to Government. He was succeeded by Mr. J. W. Martin, who held charge until November 1891, when he was transferred to the III Circle. On Mr. Martin's transfer Mr. W. Hughes, B.A., was placed in charge until January 1892, when Lieut.-Colonel Smith, R.E., who had proceeded on special leave after his relief in the Secretariat, returned and resumed charge of the circle. The office of Consulting Architect remained in the hands of Mr. Irwin, C.I.E., throughout the year. The No. I Periyar division (head works) was held by Mr. H. S. Taylor until his death on 12th October 1891. Mr. S. D. Pears then performed the duties of Superintendent of Works until December 1891, when he was relieved by Mr. W. B. deWinton, who holds charge as Superintendent of Works under the direct orders of the Chief Engineer.

3. *Divisional Changes.*—The only changes of importance were the separation of the Salem district from the Coimbatore division and its formation into a separate division, and a similar separation of the Anantapur district from the Bellary division as a temporary measure for famine relief purposes.

4. *Casualties.*—There were two deaths among the superior officers of the department, that of Colonel H. Smalley, R.E., who died in England on the 23rd January 1892 while on leave, and that of Mr. H. S. Taylor, Superintendent of Works, Periyar Project, who was accidentally killed on the 12th October 1891 while in the execution of his

செப்பிடுபவர் பெயர்
2. கணேசன்
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கொள்வப்பட்ட நாள்
25. 9. 94.
செப்பிட்டு முடிந்த நாள்
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22/10/94
கெயா பபம்

duty. His Excellency the Governor in Council placed on record an expression of his sorrow for the awful and sudden death of Mr. Taylor, and his sense of the loss which the public service had thereby sustained. His Excellency in Council also offered his condolence to Mr. Taylor's widow.

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
Imperial Military works	Rs. 39,000	Rs. 83,500	Rs. 78,616
Do. Civil works	42,700	53,600	39,042
Provincial do.	35,23,000	29,00,000	26,98,201
Local Incorporated funds	85,000	1,70,000	1,60,713
Do. Excluded do.	22,780	18,187	13,683
Estate works	66,789	65,975	63,168
Total	38,19,269	32,91,262	30,47,452

6. *Famine Relief Works.*—The most important matter with which the department had to deal during the year was the organisation of relief works. It became evident before the previous official year had closed that scarcity more or less severe would prevail in the Bellary, Anantapur, Kurnool, Cuddapah, North Arcot, Chingleput, Coimbatore and Nellore districts, and, possibly, in some others. The nature and amount of relief required could only be determined with certainty as the season advanced, but programmes of works were prepared, establishments organised and tools got ready so as to start work at any locality where distress in an acute form might declare itself. Towards the close of the year it became necessary to formally declare the following districts to be "distressed" districts, for the purposes of the Famine Code, viz., Nellore, Bellary, Kurnool, Anantapur, Cuddapah and Salem.

The procedure which should be adopted in regard to the execution of all works classed as relief works was laid down in precise terms. It was directed that all works undertaken for the relief of the distressed population, other than those connected with the Local Fund roads which would, as a rule, be executed under the supervision of the Local Fund Engineer and his staff, should be carried out under the orders of the Executive Engineer of the division. Such works were to be classed as "Professional agency works," and the provisions of the Famine Code relating to works of that description were declared applicable to them. It was, however, left open to the Collector of the district to direct that any work which would be ordinarily carried out by the Local Fund Engineer as a civil agency work should be classed for special reasons as professional agency and placed under the Executive Engineer of the Public Works Department.

Obligations regarding the execution of works required for famine relief had in some cases been entered into with contractors, and it was necessary to determine how these could be dealt with in view of the altered conditions induced by the famine. It was accordingly ordered that the Executive Engineer of each division in a distressed district should submit to the Famine Commissioner through the Collector a list of all the Public Works in progress in his division, describing the nature of each work, how it was being carried out, and the quantities of famine labour it could absorb. In the case of works which were being carried out on contract, it was to be further stated what compensation would have to be paid to the contractors in the event of the contracts being cancelled. On receipt of this information, the Commissioner was to determine which of the works were required for relief purposes. Those alone would be treated as relief works, and the rest would be carried out as ordinary works. These orders were applicable only to works for which contracts had already been entered into. No fresh contracts were to be made, all works in the distressed tracts (except masonry works) being carried out departmentally under the rules of the Famine Code. All masonry works which are obviously unsuitable for famine relief were declared to be outside the scope of para. 30 of the Famine Code.

The following is a summary of the measures actually taken by the Public Works Department in the localities affected by distress:—

Kalahasti Zemindari, North Arcot district.—The distress in this tract acquired an acute character at a very early period of the season. Besides the lower classes of laborers whose means of subsistence had become quite exhausted, people of some of the higher castes also were affected by want of food, several families not inured to hard labour suffering from actual starvation. Works were started as soon as practicable in the affected centres, and, in consideration of the urgency of the case, an advance of Rs. 10,000 was placed at the disposal of the Dewan of Kalahasti to enable him to commence at once some of the minor irrigation works in the affected villages. The works were subsequently placed in charge of the Public Works Department and an Executive Engineer, with a suitable staff of subordinates, was entrusted with their supervision. Seventy-five works were started; of these, seven were roads and three buildings. The rest were tank repairs, the outlay incurred being Rs. 81,977. The maximum number of coolies employed on the works at one time was 5,229. Works were given out on the piece-work system and the coolies were paid at 1st, 2nd and 3rd class rates under the conditions prescribed in the Famine Code.

North Arcot district.—It was found that in the remaining portions of this district the ordinary public works were generally sufficient to absorb all laborers in need of employment. The only work specially started for famine relief was the removal of islands from the bed of the channel above the Cheyár anicut, on which an expenditure of Rs. 5,568 was incurred.

Malabar, Salem and Coimbatore districts.—Distress prevailed in portions of these districts, but it was neither widespread nor long continued, and it was met by the ordinary works of the Local Board and Public Works Department budgets without putting into force the provisions of the Famine Code. It does not therefore seem necessary to enter here into a detailed review of operations in those particular localities. It may, however, be remarked that in all districts affected by scanty rainfall a large expenditure has by means of advances under the special well rules been incurred on the sinking of wells, and that employment has thus been found for numbers of ryots within the limits of their own villages and on works of a specially useful and remunerative character.

Bellary, Anantapur, Cuddapah and Kurnool.—These districts comprise the charge of the Superintending Engineer, III Circle. Although scarcity more or less severe prevailed in this area from the beginning of the official year owing to scanty rainfall in the previous year, it was not till towards the close of the year under review, after the failure of both monsoons, that the Government considered it necessary to formally declare the districts to be "distressed" under the provisions of the Famine Code. "Relief works" technically so-called were started in Bellary and Kurnool in December and in Anantapur in March following. In Cuddapah, the only famine relief works undertaken were those under the supervision of the Collector. During the year under review the distress never assumed a severe character, the maximum number of coolies employed in the whole circle on relief works of all classes being only 35,200, while the prices of grain never approached those which prevailed during the famine of 1876-77.

The following statement shows the number of works undertaken, the expenditure incurred and the greatest number of persons employed at any one time in each district of the III Circle by the Public Works Department:—

District.	Number of works.	Expenditure.	Number of persons employed.			
			Men.	Women.	Children.	Total.
Bellary	7	Rs. 5,994	488	544	184	1,216
Anantapur	2	342	190	245	131	566
Cuddapah	2	1,239	109	128	4	241
Kurnool	14	37,121	3,813	3,991	1,140	8,944
Total	25	48,278	4,600	4,908	1,459	10,967

With one exception—improvements to the town wall of Kurnool—all the works selected were irrigation works, the coolies being employed generally on earthwork in raising tank banks, gravelling the top of the banks and closing breaches, and in some cases in stone revetment and removing prickly-pear.

The task was fixed as follows:—

A fairly healthy gang, say of 50 coolies, comprising a proportionate number of men, women and children, was put to a particular kind of work under strict supervision, and the quantity thus turned out was taken as the unit for wages of the first class. Second and third class laborers would, in accordance with the rules in the Famine Code, be those who executed 75 and 50 per cent., respectively, of this task. In the majority of cases, the coolies put on task work were only able to earn third-class wages.

The piece-work system was also tried, payments being made according to the value of work executed. The rates generally paid were as follows:—

							First class.		Second class.		Third class.	
							AS.	P.	AS.	P.	AS.	P.
Bellary—												
Men	...	...	...	...	...	...	2	4	1	9	1	7
Women	...	...	...	...	...	...	1	8	1	4	1	3
Children	...	...	...	...	...	...	1	2	0	11	0	10
Cuddapah—												
Men	...	...	...	...	...	...	3	0	...	...	...	...
Women	...	...	...	...	...	...	2	0	...	...	...	...
Children	...	...	...	...	...	...	...	...	...	...	...	...
Kurnool—												
Men	...	...	...	...	...	...	2	4	1	8	1	5
Women	...	...	...	...	...	...	1	8	1	4	1	2
Children	...	...	...	...	...	...	1	2	0	11	0	9

No hutting accommodation was necessary, the coolies coming from adjacent villages and returning home every evening.

The following statement shows the establishment employed in connection with the works:—

	BELLARY.		ANANTAPUR.		CUDDAPAH.		KURNOOL.	
	Number.	Salary.	Number.	Salary.	Number.	Salary.	Number.	Salary.
Executive Engineer	1	Rs. 700	1	Rs. 800	2	1,200	1	800
Assistant do.	1	250	...	...	...	...	1	500
Supervisors	...	...	1	150	2	300	2	300
Overseers	...	...	...	...	2	200	1	100
Sub-Overseers	1	50	...	...	...	...	3	150
Surveyors	2	160	1	80	...	...	...	...
Office	...	67	...	100	...	164	...	564
Petty	...	80	...	45	...	58	...	720
Total	...	1,307	...	1,326	...	2,042	...	3,574

The large stock of tools in the circle was supplemented by supplies drawn from the Public Works Stores in Madras and from the IV and VI Circles in anticipation of a much larger number of persons than actually resorted to the works.

Nellore district.—The rainfall was deficient throughout the district during the period of the south-west monsoon, and famine was apprehended in the taluks south of the Pennér as well as in the portions of the Nellore and Atmakúr taluks to the north of that river. The following works were accordingly started as famine relief works:—

	Estimate.
	RS.
1. Madamanur tank	20,700
2. Griddalur tank	16,600
3. Vasili tank improvements	9,600
4. Vasili flood embankment	6,500
5. Pákala new tank	6,000
6. Atmakúr tank	3,780

They were given out on the conditional contract system provided for in paragraph 121 of the Famine Code. In the execution of the works, a stipulation was made with the contractors that they should admit all laborers seeking work. In December timely rains fell which altered the prospects of the country and removed anxiety in regard to the southern taluks of the district.

In the northern taluks, not only was the south-west monsoon deficient, but the north-east monsoon also failed, and the distress in these parts was consequently more serious. Relief works on the task work system were started here, and a special establishment to supervise the works was organised, an Executive Engineer being placed in charge of the operations with a suitable subordinate staff, and by him estimates were framed for minor irrigation works and for carrying out such of the major irrigation works as were considered suitable for famine relief.

Chingleput.—Arrangements were made in February 1891 to commence relief works in the north of Tiruvallúr taluk, none of the other taluks of the district being at this period in need of relief. A few months later, however, operations were extended southwards. The south-west monsoon had then failed and relief works became necessary in every taluk of the district. The rainfall of the north-east monsoon, though not copious, was sufficient to render relief operations no longer necessary, and works were closed in January 1892.

The following is a list of the tracts in which relief works were opened with the month in which the works were begun in each case:—

No.	Name of taluk.	Name of tract.	Month of opening.
1	Tiruvallúr	Kadúr Kambakam	February 1891.
2	Do.	Uttukottai	April "
3	Do.	Periapalayam	May "
4	Ponnéri	Ponnéri taluk	February "
5	Chingleput	Manambath	April "
6	Madurāntakam	Acharavakam	" "
7	Saidāpet	Tirumshī tank	July "
8	Conjeeveram	Kavam-Mappedu	" "

System of payments.—Payments on these works were made according to circumstances, sometimes weekly, but oftener as frequently as twice a week, while in some cases daily payments had to be given.

The maximum rates of wage per diem were 3 annas for a man, 2 annas for a woman and 1 anna 6 pies for a boy or girl. Smaller rates proportionate to the work done were paid to people who could not do the full task required for the maximum rates.

Preparation of estimates.—Special subordinates were employed in the preparation of estimates so that a continuous supply of works might be available.

The following table gives the total number of estimates prepared and their value:—

	No.	Amount.
		RS.
Tiruvallúr	56	1,48,707
Chingleput	73	1,58,345
Mount	10	8,035
Vayalur project	1	43,000
Total	140	3,58,087

The duty of selecting the works devolved on the Revenue authorities.

In August and September 1891, the Right Honorable the Governor accompanied by Mr. Clogstoun, the Famine Commissioner, visited the relief works in progress.

The following statement shows the maximum number of coolies employed at any one time:—

	No.
Men	3,267
Women	1,313
Children	102

General.—The following sums were spent on famine relief works during the year in all districts of the Presidency in which such works were undertaken :—

	RS.
Anantapur	342
North Arcot	55,958
Cuddapah	1,239
Bellary	5,994
Kurnool	37,121
Chingleput	96,807
Total	1,96,591

7. *Madras Harbour Works.*—At the commencement of the official year 1891–92 the superstructure of the north and south piers of the harbour had been carried beyond the points where the section of the piers commences to widen from 24 feet to 38 feet to form the pier heads; the bottom of the pier head superstructure, as designed, moreover, is stepped down from 22 feet below mean sea-level to 40 feet below mean sea-level. This widening of the section and increasing depth of foundation has to be considered when comparing the progress of the piers during the year under review with that of previous years. The width of the section necessitates extra work and expenditure of time, while setting each course and the extra depth of foundation involves considerable extra labour in the preparation of the beds.

North Pier.—During the year a length of $74\frac{1}{2}$ feet was added to this pier, consisting of twelve courses, made up of 245 concrete blocks; of these, 84 blocks, or four courses, were set in the months of July, August and September, and the remaining 161 blocks, or eight courses, in January, February and March. The end of the superstructure on the 31st March was $3,691\frac{1}{2}$ feet from the commencement of the concrete blockwork, leaving about 95 feet of superstructure to be set before the cylindrical head is commenced.

North Pier Wavebreaker.—At the end of last year, the wavebreaker screen was made as far as could be done with the Titan crane, that is, for a width of 28 feet nearly to the end of the then completed superstructure. In April of the year under review, some more blocks were deposited by the Titan crane and the completion of the wavebreaker had to await the arrival of the all-round crane. This crane arrived in August and was put together in November. An entirely new track for this crane, consisting of steel rails rivetted together in pairs, was completed towards the end of February and the crane was run out on to the pier on the 6th March. Between this date and the end of the year 248 blocks were deposited, completing the wavebreaker to its full width of 40 feet up to 3,375 feet from the shore end of the pier.

Rubble Base.—A quantity of rubble, amounting to 1,259 tons, was deposited in the north pier base, this being all that is required.

The consolidation of the rubble base inside the pier with Portland cement concrete was continued and there now remains a length of about 400 feet to be protected near the curve in the pier and also a length of about 250 at the outer end of the pier. For this work it is necessary to select a period when there is least motion of the sea to obviate the Portland cement being washed out of the concrete as much as possible. For the north pier this period is generally in January and February.

South Pier.—The progress on the south pier during the year was less than that on the north pier, only seven courses having been set. In the first quarter, one course was set, in the second two, in the third one, and in the last quarter three courses were set. The pier has been thus lengthened by $43\frac{1}{2}$ feet, the number of blocks set being 156. The slow progress has been chiefly due to the difficulty of preparing the bed for the blocks owing to the extra depth of foundation decided on after rubble had been deposited to a higher level.

On the 31st March the length of the south arm from the commencement of block work was $3,818\frac{1}{2}$ feet, being one course less from the cylindrical head of the pier than the north arm, or leaving about 89 feet of block superstructure to be built before the cylindrical head is commenced.

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The wavebreaker was continued to screen the work done during the year and length of 60 feet of the rubble base protected with concrete. There remained length of about 400 feet of the rubble base near the bend in the arm and 100 feet at the end of the pier to be protected with concrete.

Blockmaking.—During the year 992 blocks were made, leaving only six superstructure blocks to be made to complete the set for the piers.

Pallavaram Quarries.—The quarries were worked by contract as in former years and the total outturn was 89,000 tons of stone, of which 16,755 tons were stone chips for concrete and the rest was mostly used in the extension of the revetment north of the harbour.

Protective Works north of the Harbour.—The estimate for this work amounts to Rs. 1,55,462. During the last official year $24,576\frac{1}{4}$ tons of stone were deposited and during the year under review $70,993\frac{1}{4}$ tons. The provisions of the estimate have been carried out and cross sections of the revetment taken after completion, so that the action of the sea may be noted. It is to be expected that the loose stone deposited will be moved by the sea and assume a flatter slope than at present. It will require careful watching for some time and immediate action taken in the event of damage.

Foreshore south of the Harbour.—There has been an advance seawards of about 60 feet close to the pier. During the previous year the advance was about 80 feet.

Sea Bottom within the Harbour.—The last survey of the harbour showing contours at every half-fathom line was taken in 1889. A new survey was started in February and contours taken up to the 4-fathom line. These show little or no alteration since 1889.

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

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No. of item.	Particulars and quantity of work, &c. Note.—The figures in block type denote for comparison purposes and quantity of work done in official year 1890-91.	North pier.					South pier.					Concrete block-making.	Protective works.	Total expenditure (1891-92).		
		Rubble base.	Superstructure.	Pier head.	Wavebreaker.	Base protection.	Capping.	Rubble base.	Superstructure pier head.	Wavebreaker.	Base protection.				Capping.	
1	Total quantity rubble stone received on works and deposited .. Tons.	11,321 1/2						5,305 1/2							24,576 1/2	70,933 1/2
2	" " of chips .. " "			103 2 1/2						143 60						
3	Concrete blocks set by divers .. Number.		480		661 164 1/2				201 156							
4	" " deposited in wavebreaker .. " "													124		
5	" " made for superstructure (ordinary) .. " "													822 720		
6	" " pier heads .. " "								25 16					631 272		
7	" " wavebreaker .. " "		54	31 30										25,862 15,204 1/2		
8	Wrought iron cramps fixed in position .. " "							138 73 1/2								
9	Total outturn of concrete .. C. yds.															
10	Advance or progress of completed superstructure .. R. ft.		300	37 1/2												
11	Rubble base protected with concrete .. " "															
12	Expenditure under sub-heads of works—approximately—Rs. ..	6,692	37,192		20,992	1,895	1,492	4,276	56,756	3,283	937	869	1,02,905	1,84,435	39,915	4,61,640

TONS.

Portland Cement.

TONS.

Portland Cement.

Balance from last year 19.734 casks	
Received from England during year	..
Used for block-making ..	..
Do. other work ..	..

Expenditure.—The total outlay on the works during the past year, including the expenditure on the protective works north of the harbour and new machinery required, has been Rs. 6,74,416 made up as follows:—

	RS.
Outlay on works	4,80,437
Do. on establishment	67,827
Do. on tools and plant	<u>1,03,842</u>
	<u>6,52,106</u>
Net debits to suspense heads	22,310
Net outlay in the year	Total ... <u>6,74,416</u>

The total expenditure up to the end of the official year was Rs. 1,16,47,374 against the total estimated cost of Rs. 1,23,83,386.

Miscellaneous.—During the year the platform or “hard” for coal was extended as shown on the plan and a new building for a Harbour Master’s office started.

Messrs. Best and Co. have obtained permission to make arrangements for pumping kerosine oil from steamers carrying the oil in bulk to reservoirs on the shore through a pipe which will be attached to the north pier.

Establishment.—Mr. A. Lee Poggins was granted a year's leave and handed over charge to the Assistant Engineer, Mr. R. W. Thompson, on the 26th November. Mr. Thompson was relieved by Mr. F. J. Wilson, Executive Engineer, Public Works Department, on the 4th January 1892. The resignation of Mr. C. Underdown, Foreman Diver, was accepted by the Trustees of the Board and he left the works on the 1st April 1892. His duties are being temporarily executed by Mr. W. S. Boteler, General Foreman, in addition to his own duties.

8. *Vizagapatam Harbour*.—Proposals for the improvement of the port of Vizagapatam extend back to a somewhat remote period. The local conditions were, however, not such as to justify any large outlay.

The construction of the East Coast Railway now in progress being likely to change the circumstances materially by bringing the port into connection with the railway systems of the country, it appeared to the Madras Government expedient that the question should be revived and it was suggested to the Secretary of State that a Marine Engineer of unquestionable authority should be sent out to examine the conditions and report fully on the measures requisite for improving the port. The Secretary of State concurred in this view and suggested the employment of Mr. Thorowgood, for some years the Resident Engineer of the Madras Harbour Works and of previous experience of the great works at the mouth of the river Tyne. Mr. Thorowgood was accordingly engaged and sent out. He arrived in this country in November 1891 and immediately proceeded to Vizagapatam and remained there till February 1892 carrying on his investigations, the result of which has not yet been communicated to Government.

9 *Negapatam Harbour*.—The committee appointed to consider the difficulties in the landing and shipping of goods at the port of Negapatam recommended the construction of a pier extending from the end of the present jetty into a depth of 12 feet of water at low tide. Soundings were taken from the end of the jetty and from points 300 feet and 500 feet north and it was found that to secure the required depth of water the pier would have to be about 1,150 feet long and would cost probably double the sum originally proposed. The position 500 feet north of the jetty appears the most suitable for the pier. It would here be clear of the boat channel into the harbour. The further consideration of the project has been postponed by Government for the present owing to existing financial conditions.

The committee further recommended the following works :—

(1) The extension and strengthening of certain groynes to check the tendency of the sea to break in and silt the northern end of the harbour.

(2) The construction of two stone groynes to control the action of the sand now forming along the northern and western portions of the harbour.

Estimates for these are under preparation. Government has approved a diversion of the municipal drain on the north side of the jetty wall so as to discharge into the harbour by a masonry culvert through the jetty wall. This is intended to improve the drainage of the town north of the jetty which has hitherto been very defective. An estimate for the work has been sanctioned.

10. *New Law Courts, Madras.*—The total amount of the estimates for these buildings sanctioned up to the close of 1890-91 was Rs. 2,97,069, but additional demands

have been made during the year under review, necessitating an increase to the estimates of Rs. 3,01,094. The following are the additional works sanctioned:—

	RS.
Sixty chambers for vakils	1,22,540
Additional Small Cause court and printing office	84,824
Government solicitor's office and jury room	26,113
Gallery in the court library	2,466
Partitions for barristers' and attorneys' chambers	651
Fixtures and furniture	64,500

All buildings provided for the private convenience of gentlemen practising at the courts will be rented at rates calculated to cover the cost of maintenance and give a fair return on the capital expenditure and may thus be regarded as directly remunerative.

The progress with the work during the year was very good. The main building was practically completed with the exception of the principal tower which has still to be adapted to receive the lighting apparatus, the drawings of which have only recently been received. The additions to the building, viz., the vakils' chambers and additional Small Cause court, have been carried up to the level of the second floor. All the materials required for completing the buildings have either been collected or are being prepared. The expenditure on the works during the year was Rs. 3,19,794 and the total to date Rs. 10,31,094.

11. *Damage to the Coonoor Ghât.*—The month of October 1891 was one of unusually heavy and long continued rainfall and the Coonoor ghât, the principal means of access to the Nilgiri plateau, was seriously injured. The bridges over the Kullar and Barliyar rivers, besides several minor ones, were swept away and the road for several miles was completely blocked by landslips or cut away by the action of the local drainage. Immediate measures were taken to restore communication and by the indefatigable exertions of the local officers wheeled traffic was resumed by the 5th December. Passenger traffic had been interrupted but a few days, the *débris* from the road having been cleared and temporary expedients for crossing the streams provided by the end of October.

The two large bridges will be replaced by new ones of an improved design, which are in process of erection, temporary crossings being used in the meantime.

12. *Sanitation of Madras.*—At the close of the previous year the Government had before it, as mentioned in the administration report for that year, the schemes prepared by Mr. Jones for the improvement of the river Cooum and the amendments thereto recommended by the Chief Engineer. Looking to the insanitary state generally of the city of Madras and the supreme necessity for improving it and reducing the abnormal death-rate, the Government, as well as the Municipality, felt the necessity for measures of a comprehensive character which would embrace not only the purification of the Cooum but also the water-supply and drainage, the defects of which are but too apparent; but, before committing itself to the large expenditure which must necessarily be incurred in effecting any amelioration of existing conditions, the Government wished to have the advice and assistance of the ablest expert procurable, and accordingly telegraphed to the Secretary of State in view to such an expert being engaged in England and sent out to this country where he would be required to reside for a period of six months, investigating and studying on the spot the circumstances to be dealt with. In compliance with this requisition negotiations were entered into with Mr. Edward Cousins, Civil Engineer of Westminster, who had had considerable experience in both water-supply and sewerage engineering, and was recommended to the Secretary of State by the Local Government Board in London. Mr. Cousins's inquiries and investigations occupied from the middle of October to the middle of April, but the report containing their result has not yet been received by Government.

13. *Light-houses.*—The undermentioned light-houses were inspected by superior officers of the Public Works Department:—

Vakalapudi.	Calicut.
Hopo Island.	Tellicherry
Muttum.	Cannanore
Négapatam.	Mangalore
Cochin.	

In reviewing Mr. Douglass' report on the light-houses of this Presidency the Government remarked that it would be desirable to offer a young Engineer officer of a mechanical turn some inducement to make a study, during his furlough to Europe, of light-house buildings and apparatus in use in England and France and the opinion of the Chief Engineer was requested. The Chief Engineer selected for this duty Mr. Ashpitel, an Assistant Engineer, who was at home on furlough. The nomination was accepted by Government, and the Secretary of State was addressed in view to facilities being afforded to Mr. Ashpitel to pursue the requisite studies.

It is intended to remove the present light-house column at Madras as soon as an improved light apparatus ordered from England is fitted in the central tower of the new Law Court buildings. The tower is of greater elevation than the column and the power and range of the illuminating apparatus will thus be increased.

14. *Works in Wards' Estates.*—The works in the following estates, all situated in the I Circle, were in charge of the Public Works Department during the year:—

Ganjam division.

- | | |
|--------------------------|---------------|
| 1. Atagada and Kallikôt. | 5. Dhárakôt. |
| 2. Aska. | 6. Bodagada. |
| 3. Kurla. | 7. Jarada. |
| 4. Chakipilli. | 8. Turlapeta. |

Vizagapatam division.

9. Chidikadu-Jaganathapuram.

Of these estates, Kurla and Turlapeta in the Ganjam division, were handed over to the proprietors before the year closed.

The following statement exhibits the outlay as compared with the 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:—

Estates.	ORIGINAL WORKS.		REPAIRS.	
	Revised grant.	Outlay.	Revised grant.	Outlay.
	RS.	RS.	RS.	RS.
Atagada-Kallikôt	8,800	8,815	1,956	1,370
Aska	..	..	..	..
Kurla	..	..	..	..
Chakipilli	..	..	..	2
Dhárakôt	1,500	1,494	774	777
Bodagada	4,000	3,525	500	506
Jarada	..	..	..	..
Turlapeta	..	..	..	..
Total	14,300	13,834	3,234	3,255

Atagada-Kallikôt.—Under Civil Buildings, Original, the following two works were in progress:—

(1) Reconstructing a second gateway in the Kallikôt palace; the expenditure on which was Rs. 5,452.

(2) Constructing a masonry compound wall at Nermalu-Jhoro, the expenditure being Rs. 2,620 as against an estimate of Rs. 3,270. The work was nearly completed. The Zamindar's house and a marriage mantapam were being reconstructed, while certain improvements to the manager's quarters were completed.

Under "Buildings, Repairs," there were four works in progress, of which three were completed.

Under "Communications" two new works were taken in hand and completed, and two roads were repaired.

Dhárakôt.—Two new buildings and four repair works were in progress in this estate.

Bodagada.—Three buildings were in progress, two of which were completed. The remaining work, the manager's office, was started late in the year and was in progress at its close. Four buildings were repaired.

The only work under "Communications" was the construction of a road from the Palace to the police station at Bodagada, the outlay being Rs. 502.

15. *Presidency Public Works Workshops.*—The following is a statement of the work done in the shops during the year under review as compared with the previous year:—

	1891-92	1890-91	More than 1890-91	Less than 1890-91
	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	72,405 7 8	68,725 14 1	3,679 9 7	
Work done for other departments	22,170 13 8	50,877 3 9		18,496 9 3
Do. for private parties	5,561 8 5	3,367 9 7	2,193 15 0	
Total	1,10,437 10 9	1,22,970 11 5	5,873 8 7	18,496 9 3

The work done for the Public Works Department during the year was Rs. 3,679-9-7 more than in the previous year. The increase occurs specially under wood work. The value of work done for other Government departments was Rs. 32,470-10-6 as against Rs. 50,877-3-9 in the previous year. The excess in 1890-91 was due to exceptional causes as explained in the report for that year.

The value of private work turned out was Rs. 2,193 more than in the previous year, but no work of this kind will in future be taken by the shops without the sanction of Government which will only be given in special cases.

The value of machinery and plant at the beginning of the year was Rs. 1,03,830.

After deducting the usual 4 per cent. for depreciation and adding receipts amounting to Rs. 4,655, the balance at the close of the year amounted to Rs. 1,04,332. The expenditure on tools and plant and machinery was Rs. 3,655 and that on new plant Rs. 1,400, while the balance of materials on hand at the end of the year was Rs. 18,331, which is within the sanctioned reserve limit of Rs. 25,000.

16. *Presidency Public Works Stores.*—Mr. L. L. Wickham, Assistant Engineer, 1st grade, continued in charge throughout the year. Stock-taking was in progress at the end of the year.

The opening balance was Rs. A. P.
1,55,567 8 0

The receipts were—

	RS. A. P.
From London	64,300 2 10
" Public Works divisions	1,170 12 5
" Public Works workshops	3,231 12 10
" Military department	33 9 6
" Other provinces	36 12 4
" South Indian Railway	105 1 4
" Tools of Public Works stores	1,189 0 0
" Excess in stock-taking	158 3 10
" Local purchases	1,681 8 4

71,906 15 5

Total ... 2,27,474 7 5

The issues were—

To Public Works department	11,099 9 10
" Public Works workshops	23,479 1 3
" Other provinces	1,173 15 8
" Harbour Trust Board	11 11 11
" Military department	0 15 9
" Private sales	180 11 11
Found deficient in stock-taking	0 14 5

35,947 0 9

Leaving a closing balance of ... 1,91,527 6 8

This closing balance is in excess of the reserve limit of Rs. 1,50,000 by Rs. 40,984-8-0 and is due to the receipt of useful stock articles and iron of sizes from England during the year to meet the requirements of the Public Works workshops and ordinary Public Works divisions.

The obsolete stores alluded to in last administration report are included in balance of stock on the 31st March 1892. Sanction has been given to the sale of these stores, valued at Rs. 79,957, and, if this can be effected at reasonable rates, the balance of stock will be well within the reserve limit.

Special stores to the value of Rs. 1,21,732 were obtained from England on account of other divisions and were despatched to their destination. Stores were drawn from other departments to the value of Rs. 466 and special purchases, amounting to Rs. 10,114, were made.

Tools to the amount of Rs. 19,924 were sold to irrigation works and other departments of Government.

Forty-nine consignments were received from England and there were 52 shipments to Public Works divisions as against 22 and 31, respectively, in the previous year.

17. *Nellore Public Works Workshops.*—The outturn during the year was Rs. 17,443 as against Rs. 20,826 in the previous year, the net profit being Rs. 674. The institution continued to work satisfactorily.

18. *Bezvāda Workshops.*—The outturn of these workshops was Rs. 1,11,535 as against Rs. 1,26,004 in the previous year. Such portion of the establishment attached to the shops as is continuously employed was during the year transferred to the general temporary establishment. The saving to the workshops thus effected admitted of a reduction from 7½ to 1 per cent. being made in the centages previously chargeable to works to cover the cost of this establishment. The operations have expanded during the last two or three years and this increased demand for work is likely to continue for the present.

19. *Dowlaiswaram Workshops.*—The value of work done amounted to Rs. 78,699 as against Rs. 97,387 in the previous 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 Godāvāri delta system.

20. *Roads.*—The following statement shows the length of road communication maintained by public authorities in Madras during the year 1891-92:—

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 ..	10-92	1-25	730	13	740-92	14-26
Vizagapatam	Vizagapatam ..	64-75	..	517	502	381-75	502
Godāvāri (Eastern and Western)	Godāvāri ..	4	..	710	242	714	242
Kistna (Eastern and Western)	Kistna ..	0-62	26-50	532	300	532-62	326-50
Nellore	Nellore ..	0-10	..	922	109	922-40	109
Bellary	Anantapur ..	..	..	166	520	166	520
Cuddapah	Bellary ..	33	..	44	525	77	525
Kurnool	Cuddapah ..	..	..	322	578	322	578
Coimbatore	Kurnool ..	..	..	372	119	472	118
West Coast	Nilgiris ..	46-37	23-37	47	470	93-37	493-37
North Arcot	Salem ..	..	..	554	1,364	554	1,364
Consulting Architect	Coimbatore ..	..	..	937	552	937	552
Chingleput	South Canara ..	..	..	148	877	148	877
South Arcot	Malabar ..	61	..	604	715	665	715
Tanjore and Nagapattinam	North Arcot ..	..	..	1,444	..	1,444	..
Trichinopoly	Presidency ..	4-30	..	..	..	4-30	..
Madura	Chingleput ..	..	..	607	75	607	75
Tinnevely	South Arcot ..	..	..	847	275	847	275
	Tanjore ..	..	146-75	163	1,363	163	1,509-75
	Trichinopoly ..	20-87	..	524	135	544-87	135
	Madura ..	..	..	569	692	569	692
	Tinnevely ..	..	..	817	129	817	129
Total		246-23	244-87	11,476	9,855	11,722-23	10,999-87

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

21. *Adoption of the Government of India Code.*—The Madras Government has for many years had its own Public Works Department Code of regulations. The tendency of late has, however, been towards uniformity of procedure, and His Excellency the Governor in Council, after a careful consideration of the subject, decided that there was no longer any necessity for maintaining a separate code for local use and accordingly proposed the adoption of the Government of India Code which is in force in every other province of the empire. The acceptance of the Government of India Code carried with it the acceptance of such of the recommendations of the recent Accounts Committee as had been approved by the Government of India, subject to discussion of any special questions which may arise.

The proposals of the Madras Government were accepted by the Government of India and will be carried into effect as soon as a sufficient number of copies of the code can be obtained for distribution to the department.

22. *Brick and Tile Factory.*—The public works under execution by the Consulting Architect kept the factory in active operation during the year. The tramway and the steam pugging machinery now brought into use facilitated work and rendered the outturn more satisfactory than formerly. The following are the quantities manufactured for Government works:—6,945,603 bricks, 264,360 flooring tiles, 131,160 roofing tiles, 33,864 Mangalore pattern roofing tiles, besides a large quantity of terracotta. In addition to these quantities, 254,500 bricks and 22,750 tiles were supplied to contractors, an advance of $24\frac{1}{2}$ per cent. on the ordinary rates of $24\frac{1}{2}$ per cent. being charged to them.

23. *Type Designs.*—The following type designs were prepared by the Consulting Architect and issued for the guidance of the department with schedules of quantities and descriptive specifications:—

First-class taluk offices (revised designs).

Second-class do. (do.).

Sub-Registrars' offices (accommodating more than three clerks).

Offices for Sub-Collectors, Head Assistant Collectors or Deputy Collectors.

Wooden record racks and step ladder for taluk offices.

Residences for Sub-Collectors and Head Assistant Collectors.

24. *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. The cash chest of the Ganjam division was stolen in September 1891 and thirty-two service books were lost with it. The replacement of these books is in progress.

II.—PROGRESS OF WORKS.

I.—IMPERIAL—MILITARY WORKS.

25. *Ganjam.*—The only work in progress during the year was constructing a well in the military cholera camp at Ampana. It was completed and finally handed over to the Military department, to which department the expenditure was debited.

26. The works in progress under repairs during the year were 14 in number, all of which were completed at a cost of Rs. 1,000.

27. *Godavari (Eastern).*—Repairs to the Military hospital, Sámalkót, were carried out at a cost of Rs. 313. Repairs to cook-room and powder magazine, Sámalkót, were practically finished during the year at a cost of Rs. 107. The total expenditure under repairs amounted to Rs. 555 against a grant of Rs. 535.

28. *Vizagapatam.*—Sinking a well and constructing new drains to flush the existing drains of the M. I. lines, Vizianagrum (a minor original work); estimate Rs. 1,300. The expenditure during the year was Rs. 1,051. Work nearly completed.

A small portion of drains remains to be constructed. The total expenditure under Minor Original Works was Rs. 1,438 against an allotment of Rs. 1,250. The excess outlay was due to expenditure on "Improvements to the rifle range at Vizianagrum" without an allotment of funds. Additional grant to meet the excess payment was applied for but not granted.

29. The expenditure on repairs was Rs. 2,717 against an allotment of Rs. 2,500 for repairing the roads and military buildings in the cantonment of Vizianagrum and those at Vizagapatam and also for paying assessment on military buildings at Vizagapatam and house rents to Medical subordinates.

30. *West Coast.*—(1) Bakery and slaughter-house, West Hill, Calicut. These buildings were completed and accounts closed in the previous year, but they were handed over to the military authorities in the year under report after certain alterations and additions considered necessary by the Chief Commissariat officer had been executed.

(2) Transport lines, Calicut. These lines also were completed in the previous year and partly occupied. Sundry improvements suggested by the Chief Commissariat officer were carried out during the year. The total outlay on the lines amounted to Rs. 13,688 against the revised estimate of Rs. 15,480.

(3) Constructing sheds for 12 bullocks and 10 mules at Málápúram. Materials to the value of Rs. 820 were collected, but the work could not be proceeded with owing to the non-acquisition of the site by the Revenue department.

(4) New barracks for 30 men at West Hill, Calicut. Walls of both blocks were raised to a height of 15 feet, front verandah rafters all fitted up and those of the western block planked over and tiled; superstructure of the wash-house raised to a height of about 6 feet and doors fixed. The grant for the year (Rs. 11,560) was fully spent.

(5) Providing lightning conductor to the powder magazine, Native Infantry, Mangalore. Iron wire cable was fitted and laid and the earth terminal temporarily buried in a well. There seems to be much trouble in getting suitable earths at Mangalore. The outlay during the year was Rs. 568 against an estimate of Rs. 1,310.

31. The following minor works were completed:—

(1) Providing designation boards at Málápúram; estimate Rs. 290, outlay Rs. 221.

(2) Renewing the wooden floor of the Skittle Alley, West Hill, Calicut; estimate Rs. 500, outlay Rs. 477.

(3) Improvements to the theatre room, Málápúram; estimate Rs. 400, outlay Rs. 480.

(4) Renewing the roof of apothecary's quarters at Málápúram; estimate Rs. 1,910, outlay Rs. 2,103.

(5) Improvements to the elephant shed, Calicut; estimate Rs. 260, outlay Rs. 249.

(6) Providing weather boards to contagious disease ward at Málápúram; estimate Rs. 176, outlay Rs. 170.

(7) Constructing a dry-earth shed at Málápúram; estimate Rs. 200, outlay Rs. 192.

(8) Constructing a dry-earth shed at West Hill, Calicut; estimate Rs. 200, outlay Rs. 200.

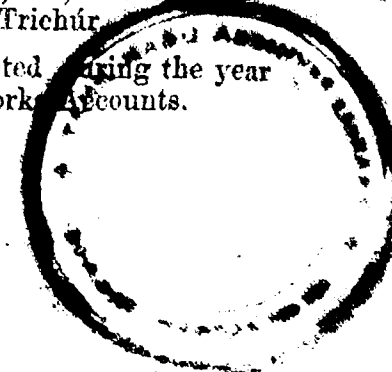
(9) Constructing a dry-earth shed at Trichúr; estimate Rs. 200, outlay Rs. 197.

(10) Constructing a dry-earth shed at Mangalore; estimate Rs. 240, outlay Rs. 235.

(11) Improvements to Government bakery at Cannanore; estimate Rs. 630, outlay Rs. 629.

32. The expenditure on repairs was Rs. 24,657 against an allotment of Rs. 25,218 incurred in the upkeep of roads and repairing military buildings, &c., in the cantonments at Cannanore, Mangalore, Quilon, Calicut, Málápúram and Trichúr.

33. *Coimbatore.*—The following minor works were completed during the year and the outlay adjusted by transfer to the Examiner, Military Works Accounts.



(1) Constructing compound walls in the west and north side of rest-house at Pódanúr; estimate Rs. 493, outlay during the year Rs. 77.

(2) Constructing a sick-cart shed to the rest camp at Pódanúr; estimate Rs. 450, outlay during the year Rs. 349.

(3) Constructing racks for powder magazine on Stonehouse hill; estimate Rs. 75, outlay Rs. 69.

(4) Constructing out-houses for conductors' quarters, Jail Hill, Ootacamund; estimate Rs. 990, outlay Rs. 869.

(5) Improvements to Judge Advocate-General's office at Ootacamund; estimate Rs. 990; expenditure Rs. 858.

(6) Constructing record-racks for Deputy Judge Advocate-General's office on Mountstuart at Ootacamund; estimate Rs. 400, outlay Rs. 399.

(7) Alterations to bath-room and constructing tiffin-room for native clerks and providing a new bath-room for European clerks in the office of the Chief Engineer, Military Works Branch at Ootacamund; estimate Rs. 180, outlay Rs. 168.

(8) Fencing European warders' quarters, Jail Hill, Ootacamund; estimate Rs. 450; outlay Rs. 282.

34. The total outlay under repairs was Rs. 5,921 against an allotment of Rs. 6,500, of which Rs. 1,794 were paid as compensation in lieu of quarters and rents of hired buildings for medical and military subordinates. The rest of the outlay was incurred on repairs to several military buildings, such as—

(1) Lawrence Asylum buildings at Ootacamund.

(2) Remount Agent's quarter at Remount Depôt, Matigiri.

(3) Hay shed to new farm stables at Remount Depôt, Maddock's quarters, Matigiri.

(4) Rest camp buildings at Mettupálaiyam.

(5) Boys' kitchen at Lovedale.

(6) Adjutant-General's office, Mountstuart.

(7) Rest-house at Pódanúr.

35. **South Arcot.**—A sum of Rs. 165 was spent in hiring quarters for the Sergeant Instructor of the South Indian Railway Volunteer Rifle Corps.

36. **Tanjore.**—A sum of Rs. 67 was spent on compensation for quarters for military and medical subordinates.

37. **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. 197 and municipal tax for the building (Rs. 63) was paid.

38. **Trichinopoly.**—Reconstruction of the roof of the hospital wards Nos. 12 and 13, of the First Pioneer lines, was commenced and completed at a cost of Rs. 4,427.

39. A sum of Rs. 7,094 was spent in repairing buildings and maintaining cantonment roads at Trichinopoly.

40. Rs. 130 and 150 were paid on account of compensation for quarters to the military and medical subordinates in Madura and Tinnevely divisions respectively.

II.—IMPERIAL—CIVIL WORKS.

41. **Ganjam.**—Repairing the Post office building at Parlákimedi; estimate Rs. 620, an incomplete work of the previous year; was completed at a cost of Rs. 621 and handed over to the Postal department.

42. Repairing the Post office at Sompot.—Repairs to this building were executed by the President, District Board, and a sum of Rs. 280 was advanced for the purpose.

43. **Godavari (Eastern).**—Compound wall to the Post office, Kunavaram (Wudigudem), was nearly finished at a cost of Rs. 200 against a grant of Rs. 250.

44. The expenditure under repairs was Rs. 432 against an allotment of Rs. 600.

45. Telegraph office and signallers' quarters, Cocanada, and Telegraph office, Rajahmundry, were repaired at a cost of Rs. 475.

46. **Vizagapatam.**—Repairs to Post offices at Koraput, Parvatipur and Vizagapatam, and other buildings were carried out at a cost of Rs. 951.

47. The Telegraph office at Vizagapatam was repaired at a cost of Rs. 300.

48. **Kistna (Eastern).**—The Post office at Bezváda was repaired at a cost of Rs. 83.

49. Repairs to Telegraph offices at Bezváda and Masulipatam were executed at a cost of Rs. 212 and 260 respectively.

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

51. **Nellore.**—The Post offices at Gúdur and Kávali were repaired during the year at a cost of Rs. 118 and 18, respectively.

52. **Bellary.**—Constructing a Telegraph office at Guntakal; estimate Rs. 15,030, outlay Rs. 5,442. The work was in good progress till end of January 1892 when it was transferred with the balance of the grant to the new Anantapur division.

53. Under "Repairs" three estimates were put in hand, one of them was completed, another appertaining to the new Anantapur division, was transferred to that division on the 1st February 1892 with a balance of grant of Rs. 85. The total expenditure was Rs. 489 against the grant of Rs. 515.

54. **Cuddapah.**—A tiled roof was provided to the verandah of Postmaster's residence in lieu of the old thatched roof at a cost of Rs. 151.

55. The Post offices at Cuddapah and Madanapalle were repaired at a cost of Rs. 111 and 86 respectively.

56. **Coimbatore.**—A sum of Rs. 890 was allotted for making certain alterations to two Post office buildings at Ootacamund and Kótagiri; outlay Rs. 715.

57. Rs. 1,035 were spent against an allotment of Rs. 1,270 for repairs, Postal, and Rs. 97 against the grant of Rs. 80 for repairs, Telegraph.

58. **Salem.**—The only work carried out was repairing the Post office at Dharampuri; outlay Rs. 273.

59. **West Coast.**—(1) The Post office well at Malapuram was deepened at a cost of Rs. 431.

(2) Nine postal buildings were repaired at a cost of Rs. 1,192.

(3) Improvements to the salt gollah at Tellicherry were carried out at an outlay of Rs. 5,449 against an estimate of Rs. 5,450.

60. **North Arcot.**—An outlay of Rs. 456 was incurred on repairs to Postal buildings.

61. **Chingleput.**—Alterations and improvements were carried out to the old Police station at Kuthivakkam to adapt it for a combined Post and Telegraph office. The work was completed at a cost of Rs. 685.

62. **Tanjore.**—The Post offices at Tanjore and Kumbakónam were repaired at a cost of Rs. 83.

63. **Negapatam.**—The Post office building at Patukóta was improved at a cost of Rs. 157 and the Government Telegraph office at Negapatam was repaired at a cost of Rs. 209.

64. **Trichinopoly.**—The lands of Postal buildings in the Trichinopoly division were demarcated at a cost of Rs. 97, the Telegraph office was improved, and bath-rooms to the signallers' quarters at that station were provided at a cost of Rs. 607. The Kottaval Chavady Post office and that at Trichinopoly were repaired at an outlay of Rs. 435.

65. **Tinnevely.**—A Post office at the Tinnevely Railway station was built at a cost of Rs. 1,187, and a window shade was provided to the Post office at Sátur at an outlay of Rs. 34. A sum of Rs. 711 was also spent in repairing the Post offices at Nagercoil, Kóttayam, Sivakasi, Srivaikuntham and Tenkási. Of these, repairs to the first two were carried out by the Chief Engineer, Travancore, and the third by the Local Fund Engineer, Tinnevely. Rs. 988 were spent in repairing the Telegraph office at Tuticorin.

66. **Madura.**—A sum of Rs. 156 was spent on the annual repairs to the British Post office at Peernede carried out by the Chief Engineer, Travancore, and on repairs to some other Post offices.

67. **Presidency.**—Covering the flat roof of the Telegraph office with lead sheeting; estimate Rs. 6,744, expenditure Rs. 6,200. The flat roof was originally covered with zinc, which, from stress of time, had ceased to be water tight. This was removed and lead sheeting substituted. The whole work was successfully completed during the year.

68. Rupees 3,694 were expended on several minor works in the Post and Telegraph office.

III.—PROVINCIAL—CIVIL BUILDINGS.

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

(1) Constructing District Munsif's court-house at Berhampore; estimate Rs. 11,450. The main building was completed in 1890-91, the latrine, &c., was completed during the year and the building handed over to the Judicial department.

(2) Constructing District Munsif's court at Aska; estimate Rs. 12,730, outlay Rs. 8,190, against an allotment of Rs. 8,153. The building was nearly completed.

(3) Constructing District Munsif's court at Sompét; estimate Rs. 12,360. This work was completed and handed over to the Judicial department.

(4) Constructing Sub-Magistrate's cutcherry and sub-jail at Berhampore. No estimate for this work was prepared for want of type design. Materials valued at Rs. 1,049 were collected during the year against a grant of Rs. 1,200.

(5) Constructing a new residence for the Collector at Chatrapur; estimate Rs. 24,900, outlay Rs. 10,001, against an allotment of Rs. 10,000. The main building was raised nearly to the basement level.

(6) Constructing Post office at Balliguda; revised estimate Rs. 2,900; the estimate had to be revised, the rates having been found insufficient during execution. The building was nearly completed.

(7) Constructing Post office at Udayagiri; estimate Rs. 2,500, outlay during the year Rs. 1,440 and to date Rs. 2,763. As the work was practically completed, no revised estimate was submitted. The cause of excess over estimate was the insufficiency of rates allowed in the original estimate.

(8) Constructing second-class Police station-house at Jagannathapur; estimate Rs. 1,470. Work completed and handed over to the Police department.

(9) Constructing quarters to hospital assistant attached to the district jail, Berampore; estimate Rs. 1,150. The work was completed and handed over to jail authorities.

(10) Constructing Police station-house at Gopálpur; estimate Rs. 1,660. This work was completed and handed over.

(11) Constructing Sub-Registrar's office at Russellkonda; estimate Rs. 2,080. This work was almost completed.

(12) Constructing a dead-house at Tekkali; estimate Rs. 730, outlay Rs. 690. The work was completed with the exception of the asphalt flooring.

(13) Constructing a District Forest office at Chatrapur; estimate Rs. 2,500, outlay Rs. 1,322. All the necessary materials were collected and the walls raised to window level.

70. The number of works in progress under repairs during the year was eight and seven of these were completed at a cost of Rs. 3,908 against a lump sum allotment Rs. 3,900.

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

(1) Additions to the Provincial College, Rajahmundry; revised estimate Rs. 13,600, outlay Rs. 1,886, against a grant of Rs. 1,720. The flooring with asphalt was completed and the fittings connected with the arrangements for water-supply were fixed during the year. The building will be handed over as soon as the furniture indented for on the workshops has been received.

(2) Quarantine ward, central jail, Rajahmundry; estimate Rs. 9,650, expenditure Rs. 1,700, against an allotment of Rs. 1,610. The roofing and flooring with asphalt were finished during the year.

(3) Close prison, central jail, Rajahmundry; estimate Rs. 29,260, outlay Rs. 12,915, against an allotment of Rs. 12,760. All work was nearly completed. A masonry compound wall has been provided for in the revised estimate.

(4) Improvements to central jail, Rajahmundry; estimate Rs. 2,680, outlay Rs. 2,565, against an allotment of Rs. 2,680. The wood and iron work required was completed by the workshops and was ready to be fitted at the end of March 1892. The work was in abeyance for three months under requisition from the Superintendent, but the improvements as originally proposed were finally accepted and ordered to be carried out by the Inspector-General of Jails. The work was accordingly resumed in March 1892 and the required materials were collected at site.

(5) School-house, Bhadrachalam; estimate Rs. 6,000, outlay Rs. 4,655, against an allotment of Rs. 4,500. The work was completed with the exception of a few details.

(6) Church of Cocanada.—No work of any importance was carried out during the year as only a contribution of Rs. 106 was realized against the balance of Rs. 4,450 to be recovered according to the revised estimate.

(7) 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, outlay Rs. 3,493, against a grant of Rs. 4,520. Most of the improvements were carried out during the year.

(8) Sub Registrar's office, Prattipad; estimate Rs. 2,470, expenditure Rs. 339, against a grant of Rs. 340. The wood-work required for the building was put in hand in the Dowlaishweram Workshops, but was stopped under orders restricting outlay.

(9) Well for the Police force at Kota; revised estimate Rs. 2,410, expenditure Rs. 1,506. The work was nearly completed.

(10) Third-class Police station-house, Chintur; estimate Rs. 1,850, expenditure Rs. 1,485. The work is approaching completion.

(11) New verandah in front and rear of Sea Custom office, Cocanada; estimate Rs. 1,440, expenditure Rs. 1,619. Work nearly completed. The excess was due to the estimated rate for the corrugated iron being insufficient.

(12) Improvements to the Sea Custom godown, Cocanada; estimate Rs. 1,750, outlay Rs. 1,583. Work nearly finished.

(13) Improvements to the saw pit shed, Dowlaishweram Workshops; estimate Rs. 680, expenditure Rs. 674. Work completed.

72. Necessary repairs, &c., to the Public Works buildings in Dowlaishweram and Dumagudem were carried out during the year at a cost of Rs. 4,007 against a grant of Rs. 4,000.

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

(1) Constructing Deputy Tahsildar's cutcherry and out-houses at Razole; estimate Rs. 10,870, outlay Rs. 4,097, against a grant of Rs. 2,385. Work nearly completed. The excess is due to adjustment of a bill for Rs. 1,507 received from workshops for wood-work.

(2) Constructing first-class taluk cutcherry at Ellore; outlay Rs. 4,557 against an allotment of 4,620. Materials were collected. Estimate as per latest standard design under preparation.

(3) Constructing District Munsif's court-house at Ellore; estimate Rs. 17,110, outlay Rs. 2,167, against a grant of Rs. 2,112. Work completed.

(4) Constructing District Munsif's court-house at Tanuku; estimate Rs. 18,440, expenditure Rs. 8,037, against a grant of Rs. 8,348. Materials nearly collected. Site not yet handed over by Revenue department.

(5) Constructing District Munsif's court-house at Amalápuram; estimate Rs. 13,800, expenditure Rs. 4,475, against a grant of Rs. 4,407. Wood-work completed. Tiling to main building completed.

(6) Constructing Sub-Registrar's office at Amalápuram; estimate Rs. 4,410, expenditure Rs. 4,099, against a grant of Rs. 4,005. Walls built to full height; wood-work in progress.

(7) Reconstructing division office building at Chettipett; estimate Rs. 13,500, outlay Rs. 5,020, against an allotment of Rs. 4,741. Work nearly completed.

(8) Wooden record-racks for Narsapur taluk cutcherry; estimate Rs. 420, expenditure Rs. 393. Work completed.

74. The number of repair works in progress or completed during the year were five at a cost of Rs. 601 against a grant of Rs. 600.

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

(1) Constructing Police hospital at Koraput; estimate Rs. 10,540, expenditure Rs. 1,291, against an allotment of Rs. 1,000. Work completed and handed over to the Police department in March 1892.

(2) Constructing Deputy Tahsildar's cutcherry with out-houses at Koraput; estimate Rs. 9,580, expenditure Rs. 4,237, against an allotment of Rs. 4,580. Work nearly completed.

(3) Constructing Deputy Tahsildar's cutcherry and sub-jail at Pottinghi; estimate Rs. 11,700, expenditure Rs. 2,113, against a grant of Rs. 2,050 at the end of the previous year. The roofing was incomplete; this was completed together with plastering to walls, fixing doors and windows and painting. The excess expenditure is chiefly due to the high rate that had to be paid for the sand which was brought from Sunki and Gollagedda, 14 miles away.

(4) Constructing 34 reserve Police huts at Koraput; estimate Rs. 14,800, expenditure Rs. 521. No special allotment was applied for on the understanding that this work would be completed within Rs. 500. The interpolation of rafters for one of the blocks was completed during the year, and the building handed over to the Police department. This outlay, not provided for in the estimate, was met from the savings on other items.

(5) Constructing Special Assistant Agent's office at Koraput; estimate Rs. 10,300, outlay Rs. 6,083, against an allotment of Rs. 6,000. This work was commenced in October 1891 and by 10th March 1892 it was ready to be roofed. The plastering was also completed.

(6) Constructing Police Superintendent's office at Koraput; estimate Rs. 12,050, expenditure during the year Rs. 382. Work completed and handed over to the Police department in September 1891.

(7) Constructing Deputy Tahsildar's cutcherry and sub-jail at Gajapatnagar; estimate Rs. 8,800, outlay Rs. 2,888, against a grant of Rs. 3,916. A portion of tiling and flooring remained unfinished. The Executive Engineer states that the allotment for this work was not fully utilized owing to the ill-health of the contractor at the close of the official year.

(8) Constructing an office for the General Duty Deputy Collector, Vizianagaram; estimate Rs. 5,000, expenditure Rs. 2,454, against an allotment of Rs. 2,465. Work completed and the Collector requested to take charge of the building.

(9) Constructing 33 huts for the reserve Police at Vizagapatam; estimate Rs. 5,720, expenditure Rs. 3,206, against an allotment of Rs. 3,680. Work completed, but the contractor had still to clean up the place. The short expenditure was due to the fact that the additional allotment granted for this work in March 1892 and communicated to the Executive Engineer by wire was not taken into account.

(10) Constructing a school-house for the Middle and Normal classes at Gnuupur; estimate Rs. 5,435, expenditure Rs. 500. Doors and windows prepared and paid for. This work was stopped under orders restricting expenditure.

(11) Constructing 55 huts for the reserve Police lines, Párvatipur; estimate Rs. 12,150; expenditure Rs. 7,999, against an allotment of Rs. 8,160. Work completed and handed over to the Police department.

(12) Constructing Deputy Tahsildar's cutcherry and sub-jail at Srungavarapukota; estimate Rs. 3,690, expenditure Rs. 2,595, against a grant of Rs. 2,600. Work completed.

76. Minor original works were executed at a cost of Rs. 9,246 against a lump sum allotment of Rs. 9,250. The expenditure on repairs to public buildings was Rs. 6,867 against a grant of Rs. 7,000.

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

(1) Constructing Sub-Registrar's office at Avanigedda; estimate Rs. 3,400, outlay Rs. 2,236, and the total expenditure up to date Rs. 3,433. Work completed.

(2) Constructing Head Assistant Collector's office at Bezvada; estimate Rs. 16,900. Masonry work was completed to the level of verandah roof. The excavation of a well in the compound was started.

(3) Constructing taluk office at Masulipatam. Materials collected at a cost of Rs. 4,258.

(4) Constructing record-room in the Collector's office at Masulipatam; estimate Rs. 10,214, outlay Rs. 6,517. The walls were built up to the level of the floor of the upper story.

(5) Constructing Tahsildar's office at Nandigama. Rs. 2,392 were spent on collection of materials.

78. Four buildings were repaired at a cost of Rs. 4,716.

79. **Kistna (Western).**—(1) Taluk cutcherry at Sattenapalle; estimate Rs. 21,880, outlay Rs. 1,157, total outlay Rs. 24,446. Work completed excepting the record-racks, which were finished in the Bezvada workshops and were being fitted at end of the year.

(2) Improvements to the District Munsif's court at Bápatla; estimate Rs. 4,420 was submitted to the District Judge in May 1892, outlay Rs. 192. Materials were under collection.

80. **Nellore.**—(1) Deputy Collector's cutcherry at Atmakur; estimate Rs. 6,300, outlay Rs. 928. Materials were in course of collection.

(2) Head Assistant Collector's office at Gúdur; estimate Rs. 14,622, outlay; Rs. 1,579. This work was ordered to be held in abeyance while materials were in course of collection.

(3) Constructing new court-room in the District Munsif's court at Ongole; estimate Rs. 4,700, outlay Rs. 3,714. The work was almost finished.

81. The following minor works were completed or in progress during the year:—

(1) Second-class Police station-house at Podili; estimate Rs. 2,100, outlay Rs. 1,952. This is an incomplete work of 1890-91 and approached completion.

(2) Second-class Police station at Rayavaram; estimate Rs. 1,010, outlay Rs. 713. Almost completed.

(3) First-class Police station at Gudur; estimate Rs. 2,280, outlay Rs. 1,740. Work completed except painting and wood oiling.

(4) Constructing eight police huts at Nayudupet; estimate Rs. 2,490, outlay Rs. 2,155. Work completed, but a portion of the roofing had to be re-done owing to bad materials used by the contractor.

(5) Constructing five Police huts at Tettu; estimate Rs. 1,350, outlay Rs. 1,179. Completed.

(6) Constructing urinal and steps to Collector's office, Nellore; estimate Rs. 380, outlay Rs. 384. Completed.

(7) Enclosing a portion of the workshop yard with compound wall; estimate Rs. 440, outlay Rs. 294. Completed.

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

(1) Bungalow at Kodavallur.

(2) Police Assistant Superintendent's quarters, Ongole.

(3) Sub-Collector's bungalow at Ongole.

(4) Taluk cutcherry at Kandukur.

(5) Deputy Tahsildar's office at Venkatagiri.

83. **Bellary.**—District Munsif's court at Bellary; estimate Rs. 13,540. The outlay to the end of the previous year was Rs. 14,008, and the work was completed during the year under review.

84. Constructing a new subsidiary jail and improvements to the taluk office at Hospet; estimate Rs. 9,775. The outlay to the end of the year was Rs. 8,894 and the work was very nearly completed. Asphalted the floor, wood oiling, painting doors, &c., and building parapet wall of the well remained to be done.

85. Constructing Deputy Tahsildar's office at Kampli; estimate Rs. 11,199, outlay to the end of the year Rs. 10,406. This work was commenced in the previous year, but was stopped as a proposal had been made to remove the office to Hospet. This question having been disposed of, orders were given to complete the building, and the work was accordingly resumed.

86. Constructing a first-class taluk office at Kudligi; estimate Rs. 26,225. The previous year's outlay was Rs. 24,625 and that in 1891-92 was Rs. 1,381. The main building and out-houses were fully completed and the construction of a well was in progress.

87. Constructing a tools shed in the Sub-divisional office at Anantapur; estimate Rs. 2,940. The work was completed at an outlay of Rs. 2,968.

88. Improvements and alterations to the taluk and Deputy Tahsildar's offices at Anantapur; estimate Rs. 8,180. The outlay to the end of the year was Rs. 3,059.

89. Constructing residence for the District Surgeon at Anantapur; estimate Rs. 11,435, outlay to the end of the year Rs. 4,566.

90. Constructing seven police huts at Muchukota; estimate Rs. 3,018. The work was completed at a cost of Rs. 3,075.

91. Constructing residence for the Collector at Anantapur; estimate Rs. 34,246. The expenditure to the end of the previous year was Rs. 36,795 and an outlay of Rs. 980 was incurred in 1891-92 in the adjustment of the cost of materials at site. The work was completed in 1890-91.

92. Constructing a Police hospital at Anantapur; estimate Rs. 7,610, outlay Rs. 285.

93. Constructing taluk office at Madakasira. The estimate had not been sanctioned at the end of the year and an expenditure of Rs. 806 was incurred in collecting non-perishable materials.

94. Under the head Minor Original Works 30 estimates were put in hand, of which four were transferred to the Anantapur division. Out of those remaining in the Bellary division, 20 were completed. The outlay under this head was Rs. 9,489.

95. Under Repairs 43 works were put in hand, 24 were completed and six were transferred to Anantapur division.

96. **Cuddapah.**—Additions and alterations to the district jail at Cuddapah; estimate Rs. 73,295. The outlay to the end of the previous year was Rs. 57,171 and that in the year under review was Rs. 8,196. The main compound wall, ward for females, solitary and condemned cells and out-houses to jailer's quarters were completed. The jail office and guard-room were nearly completed. Fixing iron door to the gate remained to be done and sundry petty works approaching completion. The drain of the jail had not been commenced, as the jail authorities had not dismantled the old walls inside the main compound wall. When the ground inside has been levelled up by convict labour, the proposed drains will be undertaken.

97. Constructing a combined office for the Tahsildar and Sub-Magistrate at Cuddapah; estimate Rs. 25,400, outlay to the end of the year Rs. 20,048. The work was completed, but final payment remained to be settled.

98. Constructing District Munsif's court at Proddatur; estimate Rs. 13,363, total outlay Rs. 11,183. In this case also the work was completed, but final payments remained to be made.

99. Constructing two additional rooms to the Executive Engineer's old office, Cuddapah, for storage of famine tools; estimate Rs. 3,800, outlay Rs. 1,300. Walls raised to full height. Roofing, plastering, flooring and fixing doors and windows remained to be done.

100. Constructing taluk cutcherry at Badvel, an incomplete work of the previous year, was completed at a total cost of Rs. 23,671.

101. Constructing Sub-Registrar's office at Jammalamadugu; estimate Rs. 2,509, total outlay Rs. 1,377. Roofing, plastering, flooring, painting and wire-netting remained to be done.

102. Constructing Sub-Registrar's office at Sidhout; estimate Rs. 2,880, total outlay Rs. 2,328. The work was completed except fixing the sun-shades to two windows, barge boards to front gable and railings to gumasta's room.

103. Constructing Sub-Registrar's office at Badvel; estimate Rs. 3,170, outlay Rs. 513. Walls raised to the required height except one gable. Wood-work in progress.

104. Improvements to the Mahal at Guramkonda, an incomplete work of last year, was completed at a cost of Rs. 3,390.

105. Constructing Sub-Registrar's office at Madanapalle; estimate Rs. 2,680, outlay Rs. 1,270. Scarcity of water prevented work being done. The well in the cutcherry compound will be cleared out and the foundations will then be laid.

106. Constructing Sub-Divisional officer's quarters at Madanapalle; estimate Rs. 2,915, outlay Rs. 2,152. Outer walls completed and inner walls to the height of 10 feet. All the wood for roof ready; also doors and windows; out-houses completed. Tilos ready for main building.

107. Restoring the Department of Public Works store-shed at Rayachoti; estimate Rs. 125, outlay Rs. 119.

108. Constructing a combined Sub-divisional office and store-room at Madanapalle; estimate Rs. 2,329, total outlay Rs. 2,038.

109. Planting aloe hedge round the compound of the inspection shed at Rayachoti; estimate Rs. 160, outlay Rs. 149. The work was completed.

110. Constructing a powder magazine for the Police department at Cuddapah; estimate Rs. 1,390, outlay Rs. 896. The unspent balance of Rs. 494 was due to non-receipt of workshops bills for lightning conductor and door supplied by it. Work completed except trestles which were also approaching completion.

111. Under Repairs, 18 works were carried out at a total cost of Rs. 1,843.

112. **Kurnool.**—Head Assistant Collector's office at Nandyal; estimate Rs. 19,500, total outlay Rs. 19,447. This was completed in 1889-90, but the Mangalore tiles of the roof having been blown off by the heavy gales that occurred immediately after completion, a revised estimate was sanctioned including the cost of repairing damages up to end of 1890-91. The work was completed during the year under report.

113. Residence for the Assistant Superintendent of Police, Nandyal; estimate Rs. 5,752, total outlay Rs. 6,184. This work was commenced in 1889-90 and by the end of that year it was completed, except roofing. During the year under report the building was finished as per sanctioned estimate. The Inspector-General of Police, however, required some alterations for which a revised estimate was under preparation.

114. Taluk cutcherry at Markapur; estimate Rs. 23,398, total outlay Rs. 16,054. The building was almost completed.

115. District Munsif's court at Markapur; estimate Rs. 15,800, total outlay Rs. 13,279. This building was commenced and almost completed during the year.

116. Railway hospital at Nandyal purchased for Sub-Divisional officer's residence. The purchase money was paid and improvements were effected in 1889-90 except the provision of a well. This was constructed and the whole work completed during the year under review.

117. Sub-Registrar's office at Markapur; estimate Rs. 2,828, expenditure Rs. 2,474. The work was almost completed.

118. Sub-Registrar's office at Giddalur; estimate Rs. 2,761, expenditure Rs. 2,358. Work almost completed.

119. Two incomplete minor works of the previous year, viz., office for the Assistant Superintendent of Police and Police hospital at Nandyal, were completed. Alterations to the late District Engineer's office at Kurnool to adapt it for a taluk cutcherry were completed.

120. The provision of out-houses and punkhas to the Head Assistant Collector's office, Nandyal, was commenced on an estimate of Rs. 1,260, but only partly executed.

121. **West Coast.**—Collector's cutcherry at Calicut. Roofing of the main building and terracing were almost completed; foundations of the Currency office raised to $1\frac{1}{2}$ feet, roofing of the record-room fully completed and plastering to walls and painting in progress. Roofing of out-houses completed and walls plastered. The total outlay to end of the year amounted to Rs. 1,57,815 against an estimate of Rs. 1,88,870; outlay during the year Rs. 41,015.

122. First-class taluk cutcherry at Perianthalamana. Roofing to court-house and clerks' room was almost finished and that to the sub-jail completed, as also out-houses. The year's grant of Rs. 15,000 was fully spent; total outlay Rs. 30,005 against an estimate of Rs. 34,070.

123. Raising the compound wall of the Lunatic Asylum at Calicut. Work almost completed except coping; outlay Rs. 2,819 against an estimate of Rs. 3,050.

124. Improving and extending the Malapuram cemetery. Materials to the value of Rs. 927 were collected, but the work could not be proceeded with as the land for extension was not handed over by the Revenue department.

125. The following works were in progress:—

(1) Sub-Registrar's office at Naduvannur. Materials collected to the value of Rs. 1,382, but the work was stopped for want of funds.

(2) Sub-Registrar's office at Tirurangady. Superstructure completed and roofing in progress; estimate Rs. 3,900, outlay Rs. 1,697.

(3) Sub-Registrar's office at Panur. Work almost completed; estimate Rs. 3,500, outlay Rs. 3,054.

(4) Sub-Registrar's office at Kuttiaady. Superstructure completed and materials for the remaining work were under collection; estimate Rs. 3,450, outlay Rs. 1,594.

(5) Sub-Registrar's office at Kásaragód. An outlay of Rs. 396 was incurred against an estimate of Rs. 3,970. Work stopped for want of funds.

(6) Sub-Registrar's office at Manantoddy. Work approaching completion; estimate Rs. 7,160, outlay Rs. 5,222.

(7) Sub-Registrar's office at Vayitri. Work held in abeyance for want of funds; estimate Rs. 6,360, outlay Rs. 982.

(8) Constructing a circular cook-room at the Central Jail, Cannanore. Grinding stone and pudding sheds were completed and circular wall raised up to full height. Chimney was in progress; estimate Rs. 2,840, outlay Rs. 1,823.

(9) Sinking a well in the compound of the taluk cutcherry at Tellicherry; estimate Rs. 650, outlay Rs. 300.

(10) Re-roofing the Police Inspector's and chief head constable's quarters at Manantoddy; estimate Rs. 2,220, outlay Rs. 1,225.

(11) Constructing six Police huts at Sultan's Battery; estimate Rs. 3,230, outlay Rs. 136.

126. The following works were completed:—

(1) District Munsif's court at Chowghat; estimate Rs. 19,245, outlay Rs. 19,217.

(2) District Munsif's court at Manjeri; estimate Rs. 15,087, outlay Rs. 15,087.

(3) Police station at Nilambúr; estimate Rs. 1,434, outlay Rs. 1,500.

(4) Latrine to Government College, Calicut; estimate Rs. 1,500, outlay Rs. 1,484.

(5) Powder magazine for the Police at Malapuram; estimate Rs. 1,820, outlay Rs. 2,056.

(6) Improvements to Government College, Calicut; estimate Rs. 2,226, outlay Rs. 2,167.

(7) Additional accommodation for Sub-Registrar's office at Betatapudiangadi; estimate Rs. 1,350, outlay Rs. 1,362.

(8) Improvements to sub-jail at Alathur; estimate Rs. 220, outlay Rs. 206.

(9) Tahsildar's cutcherry at Badagara; estimate Rs. 31,000, outlay Rs. 31,051.

(10) Fifty close prison cells in the central jail at Cannanore; estimate Rs. 26,080, outlay Rs. 26,019.

(11) Tahsildar's cutcherry at Coondapoor; estimate Rs. 32,950, outlay Rs. 32,102.

(12) Wire fencing around the District Munsif's court at Coondapoor; estimate Rs. 760, outlay Rs. 811.

(13) Latrine to the District Munsif's court at Coondapoor; estimate Rs. 670, outlay Rs. 688.

(14) Providing iron barred shutters for doors of sub-jail at Quilandy; estimate Rs. 250, outlay Rs. 245.

(15) Providing iron gratings for four wells in the central jail at Cannanore; estimate Rs. 1,560, outlay Rs. 1,595.

(16) Improvements to the sub-jail at Cochin; estimate Rs. 990, outlay Rs. 550.

(17) Constructing two couples of jail guards' huts at the district jail, Mangalore; estimate Rs. 564, outlay Rs. 701.

(18) Constructing out-houses for the Sub-Registrar's quarters at Vayitri; estimate Rs. 500, outlay 490.

127. A sum of Rs. 9,217 was spent in repairing fifty works.

128. **North Arcot.**—The undermentioned Sub-Registrar's offices were completed:—

(1) Arkónam; estimate Rs. 2,575, outlay Rs. 2,700.

(2) Ambúr; estimate Rs. 4,000, outlay Rs. 3,751.

(3) Kuppam; estimate Rs. 3,030, outlay Rs. 2,923.

129. Six Police huts at Renigunta were completed at a cost of Rs. 3,300 against an estimate of Rs. 3,270.

130. The District Munsif's court at Tirupati was all but completed; Rs. 16,299 were spent up to the end of the year against an estimate of Rs. 17,650.

131. The improvements to the taluk cutcherry at Vellore and construction of a record-room thereto were commenced on an estimate of Rs. 7,495 and were very nearly completed.

132. Taluk cutcherries at Chandragiri and Wandiwash. Materials collected to the extent of Rs. 1,150 and Rs. 351, respectively, pending sanction to estimates on the revised type design.

133. Twenty-six minor works were commenced, of which 17 were completed. The aggregate outlay during the year was Rs. 12,501.

134. Under repairs 22 works were commenced, of which 19 were completed. The outlay was Rs. 6,072.

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

(1) Sub-Registrar's office at Thathiengarpur; estimate Rs. 2,770, outlay Rs. 2,028.

(2) Police station at Shevapet; estimate Rs. 3,200, outlay Rs. 2,904.

(3) Police station at Salem; estimate Rs. 2,629, outlay Rs. 2,727.

136. The undermentioned works were in progress:—

(1) Sub-Registrar's office at Atúr; allotment Rs. 887, outlay Rs. 886.

(2) Sub-Registrar's office at Omalúr; allotment Rs. 1,666, outlay Rs. 1,666.

(3) Taluk cutcherry at Tiruchengód; materials to the extent of Rs. 2,376 were collected during the year.

(4) Taluk cutcherry at Tirupatúr. Materials purchased to the value of Rs. 4,780.

(5) Quarters for the clerks and servants of the Deputy Tahsildar's office at Yercaud. Only levelling site and collection of materials carried out; estimate Rs. 3,500, outlay Rs. 494, against an allotment of Rs. 500.

137. A sum of Rs. 1,573 was spent during the year under Minor Original Works against an allotment of Rs. 1,835. The principal works carried out are detailed below:—

(1) Constructing dead-house at Tiruchengód; outlay Rs. 374.

(2) Improvements to the District Munsif's court at Namakal; outlay Rs. 224.

(3) Improvements to the Police Assistant Superintendent's quarters at Tirupatúr; outlay Rs. 210.

(4) Improvements to the Overseer's shed at Tirupatūr to suit it for the Sub-divisional office; outlay Rs. 500.

133. A sum of Rs. 2,022 was spent on repairs against an allotment of Rs. 2,200.

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

(1) Improvements to the Collector's office at Ootacamund; estimate Rs. 3,680, outlay Rs. 3,423.

(2) Constructing five Police huts at Kandal; estimate Rs. 2,920, outlay Rs. 2,632.

(3) Additions to the Police huts at Coonoor; estimate Rs. 3,000, outlay Rs. 1,911. The large savings were due to the low tendered rates accepted.

(4) Improving the Accounts branch of the Collector's office at Coimbatore; estimate Rs. 15,840, outlay Rs. 17,389.

(5) Constructing a Sub-Registrar's office at Gopichettipoliyam; estimate Rs. 2,680, outlay Rs. 2,144.

(6) Alterations and improvements to the clerks' office buildings on Stonehouse Hill, Ootacamund; estimate Rs. 5,300, outlay Rs. 4,864.

140. The following works were in progress:—

(1) Constructing Government House at Ootacamund; estimate Rs. 7,79,150, outlay during the year Rs. 13,851, expenditure up to 31st March 1892, Rs. 7,40,308. The principal items executed during the year are detailed below:—

(a) Constructing quarters with out-houses for an European coachman and cook; estimate Rs. 12,710, outlay in 1891-92 Rs. 441.

(b) Providing furniture; estimate Rs. 1,25,000; outlay in 1891-92, Rs. 5,487.

(c) Constructing a cow-shed and dairy with two godowns; estimate Rs. 2,790, outlay in 1891-92 Rs. 2,358.

(d) Providing water closet, &c.; estimate Rs. 3,050, outlay in 1891-92 Rs. 2,453.

(e) Constructing sick lines for horses; estimate Rs. 1,760, outlay in 1891-92 Rs. 1,521.

(2) Constructing a Sub-Registrar's office at Kodumudy; estimate Rs. 2,650, outlay Rs. 1,541.

(3) Constructing a Sub-Registrar's office at Palladam; estimate Rs. 3,410, outlay Rs. 2,015.

(4) Constructing a Deputy Tahsildar's office at Aravakurehi; estimate Rs. 9,540, outlay Rs. 8,806.

141. A sum of Rs. 15,184 was spent under Minor Original Works against an allotment of Rs. 18,839. The principal works carried out during the year are detailed below:—

(1) Adding a record-room to the Sub-Registrar's office at Avanashi; outlay Rs. 100.

(2) Constructing a stable and coach-house in the compound of the Superintending Engineer's office, Coimbatore; outlay Rs. 322.

(3) Constructing a Sub-Registrar's office at Gúdāldū, outlay Rs. 170.

(4) Constructing compound wall with gate to the Collector's office, Coimbatore; outlay Rs. 1,501.

(5) Providing room for prisoners to be kept in day-time in the sub-jail at Pollachi; outlay Rs. 447.

(6) Converting old sub-jail at Mettupalaiyam into a Sub-Registrar's office; outlay Rs. 642.

(7) Providing two iron double record-racks and an iron ladder to the District court-house at Coimbatore; outlay Rs. 451.

(8) Fixing iron door to the shroff's room in the taluk cutcherry at Erode; outlay Rs. 107.

(9) Sinking a pot well in the compound of the Police Inspector's quarters at Kollegal; outlay Rs. 105.

(10) Constructing out-houses for the Bench Magistrate's court and Police station at Kōtagiri; outlay Rs. 1,057.

(11) Providing new verandah rooms to the Police Inspector's quarters at Gúdāldū; outlay Rs. 327.

(12) Constructing verandahs outside peons' lines, Stonehouse Hill, Ootacamund; outlay Rs. 275.

(13) Certain emergent works to Government offices on Stonehouse Hill, Ootacamund; outlay Rs. 169.

(14) Providing record-racks for the office of the Inspector-General of Jails at Ootacamund; outlay Rs. 332.

(15) Constructing V shaped drains for peons' quarters attached to Secretariat offices, Stonehouse Hill, Ootacamund; outlay Rs. 132.

(16) Alterations to the Police Assistant Superintendent's office at Ootacamund; outlay Rs. 143.

(17) Providing new record-racks for Army Head-quarters office at Ootacamund; outlay Rs. 982.

142. A sum of Rs. 21,634 was spent on repairs against an allotment of Rs. 21,714.

143. **Chingleput.**—Construction of 30 Police huts for the reserve police constables at the Mount, estimate Rs. 6,300, was resumed, the objection to the site having been withdrawn by the military authorities. Concrete in foundation was finished and materials were collected to the extent of Rs. 537 when the owner of the land objected to its occupation. The work had therefore again to be stopped at the request of the military authorities. The outlay was Rs. 1,108.

144. The extension of the northern side of the Teachers' College at Saidāpet to provide six new class rooms, estimate Rs. 10,000, was commenced and completed, the total outlay having been Rs. 16,263.

145. Mangalore tiled verandah round the Teachers' College, Saidāpet; estimate Rs. 3,980; outlay Rs. 4,747.

146. A new Sub-Registrar's office at Ponnēri; estimate Rs. 2,765; completed at a cost of Rs. 2,627.

147. A new Sub-Registrar's office at Sathīavedu and improvement to coach-house, Government House, Guindy, were commenced late in the year and Rs. 1,049 and Rs. 1,041 were spent on the works respectively.

148. Thirteen minor works were completed out of 17 works which were in progress.

149. Repairs to Government House, Guindy; estimate Rs. 10,680; were carried out at a cost of Rs. 9,377. Repairs were also executed to the English and Roman Catholic churches at Mount and Poonamallee, and the Collector's office at Home's Gardens. The Guindy Park road and grounds and the pump and engine were maintained in good order.

150. **South Arcot.**—The following works were completed or in progress:—

(1) Extension of Deputy Collector's office at Tirukoilūr; estimate Rs. 3,100. Walls were raised 4' 6" above basement level and wood-work for the roofing and door, and windows ready at site.

(2) New Taluk office at Tirukoilūr. Work completed with the exception of pointing, flooring, plastering and painting.

(3) New Taluk office, Villupuram. Completed and handed over to the Revenue department.

(4) New Taluk office at Tindivanam. Roofing in progress.

(5) Construction of rooms for the Treasury Deputy Collector and for stationery stores at the Collector's cutcherry. Work carried up to basement level.

(6) New Court-house for the District Munsif at Chidambaram and new offices for the Sub-Registrars at Merkānam and Vanoor. Completed.

(7) Taluk offices at Trinomallee and Chidambaram, District Munsif's court-house at Tirukoilūr, and Police station at Panruti. Materials were collected, but the works were stopped under the orders restricting expenditure.

151. Three minor new works were in progress, the outlay having been Rs. 4,578.

152. A sum of Rs. 2,955 was spent on repairs to civil buildings.

153. **Tanjore.**—The new first-class taluk cutcherry at Kumbakonam; estimate Rs. 21,275, commenced in the previous year, was completed.

154. The extension of the Vernacular record-room at the Tanjore treasury; estimate Rs. 4,730, which was incomplete at the close of last year, was also completed.

155. Improvements to the old taluk cutcherry at Kumbakonam were carried out at a cost of Rs. 2,146.

156. Six minor original works, incomplete at the end of last year, were in progress and five were completed.

157. A few petty repair works were carried out during the year at an outlay of Rs. 290.

158. **Negapatam.**—Office and quarters for the Sub-division officer at Mannargudi, commenced in the previous year, were completed at a total cost of Rs. 6,417; estimate Rs. 6,375.

159. Under Minor Works the construction of a verandah to the taluk cutcherry at Patukota was completed.

160. The compound wall around the sub-jail and Government offices (St. Joseph's College buildings) was extended.

161. A well was sunk in the compound of the sub-division office at Mannargudi and improvements were carried out to stables attached to the Executive Engineer's bungalow.

162. Seven repair works were in progress, of which six were completed. The expenditure under this head was Rs. 2,600.

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

(1) Circular kitchen in the central jail at Trichinopoly was completed at a total outlay of Rs. 4,270, of which Rs. 608 were spent during the year; estimate Rs. 4,400.

(2) Constructing drains in the Central Jail, Trichinopoly. About two-thirds of the work were carried out at an outlay of Rs. 4,006, of which Rs. 1,580 were spent during the year against an estimate of Rs. 6,160.

(3) Workshop in the Central Jail at Trichinopoly. Extension to Nos. 5, 6 and 7 blocks completed, with the exception of roofing at an outlay of Rs. 1,877. The above three works were undertaken by the Jail department.

(4) Constructing first-class Taluk Cutcherry at Musiri. Rs. 7,000 were spent in collecting materials in anticipation of sanction to the estimate.

(5) Constructing a first-class Taluk Cutcherry at Jayankondasholapuram. Materials to the value of Rs. 1,000 were collected.

164. Sub-Registrar's office at Perambalur, Police station at Arasangudi, and Police station at Manaparai, minor works which were in progress in the previous year, were completed, as also alterations to the European Infantry barracks to accommodate a European Reserve Inspector and three head constables of Police and private individuals. The District and Sessions Judge's court-house was provided with sky lights and ventilators, as also lightning conductors. Certain petty alterations and improvements were in progress to the central jail under the supervision of the Jail department. The outlay on these and other petty works was Rs. 7,259.

165. A sum of Rs. 3,119 was spent on repairs to eleven buildings.

166. **Madura.**—The following works were completed:—

(1) Sub-Registrar's office at Paramagudy; total outlay Rs. 2,827, of which Rs. 1,952 were spent during the year; estimate Rs. 3,220.

(2) District Munsif's court at Paramagudy; outlay Rs. 14,552, of which Rs. 6,551 were spent in the year; estimate Rs. 14,055.

(3) Sub-Registrar's office at Devikota; outlay Rs. 3,009, of which Rs. 2,134 were spent in the year; estimate Rs. 3,130.

(4) Second-class Police station-house at Tandigudy; outlay Rs. 5,116, of which Rs. 3,447 were spent during the year; estimate Rs. 5,090.

(5) Sub-Magistrate's cutcherry and sub-jail at Madura were improved at a cost of Rs. 5,472, of which the outlay in the year was Rs. 3,303; estimate Rs. 5,790.

167. The following works were in progress during the year:—

(1) Alterations and improvements to the Tirumal Naik's Palace, commenced in the preceding year, were still in progress and could have been completed if the furniture from School of Arts and treasury iron cage from the Public Works Workshops had been received. Rupees 5,830 were spent on the work, of which the outlay in the year was Rs. 4,759; estimate Rs. 8,570.

(2) The construction of a Sub-Registrar's office at Mudukolathore, commenced in the preceding year, was completed with the exception of a portion of flooring and doors and windows; outlay Rs. 3,467, of which Rs. 1,800 was spent in the year; estimate Rs. 3,750.

(3) Providing additional accommodation to the Native College at Madura. Cut-stone flooring and cornice work in progress and roofing nearly completed; expenditure Rs. 9,915, estimate Rs. 12,470.

(4) Improvements to lightning conductors attached to the Tirumal Naik's Palace; completed except refixing old copper tape with suitable clips; outlay Rs. 3,192, estimate Rs. 3,420.

(5) Improvements to the Sea Custom office at Keelakarai, commenced in the preceding year, were in progress. Portions of revetments on both sides of steps were completed, walls raised to basement level and ten out of 17 cut-stone steps laid; outlay Rs. 2,960, of which Rs. 2,429 were spent in the year; estimate Rs. 4,640.

168. Police station house at Utharakosamangai, a work shed in No. 4 block of the district jail additions and alterations to the taluk office, Dindigul, additions and alterations to Registrar's office in Tirumal Naik's Palace, putting up lightning conductor to Sub-Magistrate's cutcherry at Madura, converting block No. 6 into three condemned cells in the district jail, and the construction of an additional room to the Sub-Registrar's office at Periyakulam, were all completed, the outlay during the year being Rs. 4,388. In addition to these, sixteen other minor new works were in progress at an outlay of Rs. 6,911.

169. A sum of Rs. 2,565 was spent on repairs to 12 buildings, including repair and maintenance of Tirumal Naik's Palace and assessment of house-tax on Government buildings; of these seven were completed and the rest in progress.

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

(1) Renewing the roof of Protestant church at Tuticorin, which was commenced in the preceding year, was completed at an outlay of Rs. 6,890, of which Rs. 5,847 were spent during the year; estimate Rs. 6,830.

(2) Construction of three additional buildings to the district court at Kokarakulam; estimate Rs. 7,600; completed at an outlay of Rs. 6,924.

(3) Subsidiary jail to the taluk cutcherry at Otapidaram. Foundation laid and some materials collected at an outlay of Rs. 1,448; estimate Rs. 6,510.

(4) Improving District Munsif's court at Srivaikuntham; nearly completed at an outlay of Rs. 5,016; estimate Rs. 5,660.

(5) Sub-Registrar's office at Kytar; superstructure far advanced; outlay Rs. 1,376, of which Rs. 33 were spent in the preceding year; estimate Rs. 3,460.

(6) Construction of a District Munsif's court at Ambasamudram was commenced and stopped under orders restricting expenditure after an outlay of Rs. 1,446 had been incurred, of which Rs. 967 appertained to the year; estimate Rs. 14,900.

171. Under Minor Works, a second-class Police station-house at Sātūr, which was left incomplete at the end of the preceding year; constructing four Police huts at Eppathuvendai, and reconstructing Sea Custom office at Kulasekarapatam, were completed; lightning conductors were provided to the Police hospital at Palamecottah; Collector's cutcherry at Kokarakulam; Head Assistant Collector's bungalow at Shermadevi; Sub-Magistrate's cutcherry and Sub-Registrar's office at Palamecottah and powder-magazine at Palamecottah. The total outlay on all these and one or two other petty works amounted to Rs. 5,444.

172. A sum of Rs. 1,684 was spent on repairs to District Munsif's court at Srivaikuntham, Huzur treasury at Kokarakulam and on petty repairs to 11 other works.

173. **Presidency.**—The following works were in progress or completed:—

- (1) New Law Courts; estimate Rs. 12,98,163, total expenditure Rs. 10,34,094.
- (2) Victoria Technical Institute and Connemara Free Library; estimate Rs. 3,56,255, total expenditure Rs. 1,85,073. The entire building was carried up to first floor level and the upper rooms commenced. The work would have progressed more rapidly had it not been for the difficulty in preparing the terracotta, of which a very large quantity is being used in this building, and which is practically a new material at Madras. The effect is good, but difficulty is experienced in manufacturing such large pieces as are required in this building. The library was being roofed in and the iron work for the roof of the theatre was ready for erection.
- (3) Constructing a third story over the General Hospital; estimate Rs. 66,400, expenditure Rs. 60,638. The additional wards which will afford accommodation for 70 beds were constructed; the plastering of the walls, painting doors and windows and laying of asphalt floor remained to be done.
- (4) New hospital for women and children; estimate Rs. 5,36,053, expenditure Rs. 51,552. The work is in abeyance.
- (5) Constructing a new criminal enclosure at the Lunatic Asylum; estimate Rs. 60,680, expenditure Rs. 54,874. This building provides for 166 male patients; the whole work was practically completed; only roads, drains and other petty works remained to be done.
- (6) Providing accommodation for caste patients at the Lying-in hospital; estimate Rs. 15,930, expenditure Rs. 15,007. The building was completed and made over for occupation in December 1891.
- (7) Constructing wards for caste patients at the Ophthalmic Hospital; estimate Rs. 16,328, expenditure Rs. 15,465. This work was completed and made over for occupation in January 1892.
- (8) Additions and improvements to Presidency Training School for Mistresses; estimate Rs. 33,583, total expenditure Rs. 33,583.
- (9) Constructing a shed in the wine yard, Sea Customs office; estimate Rs. 13,645, total expenditure Rs. 11,827. This work was completed and occupied in July 1891.
- (10) Filling in tank in the compound of Government house with sea-sand; estimate Rs. 13,020, expenditure Rs. 12,628. Work completed.
- (11) Latrine for European and native male students at the Medical College; estimate Rs. 7,125, total expenditure Rs. 7,023.
- (12) Providing iron gates for the north-east and south-east entrances to Government House; estimate Rs. 3,736, expenditure Rs. 3,992.
- (13) Constructing coach-houses and stables to Marine Villa; estimate Rs. 8,134, expenditure Rs. 2,719.
- (14) Constructing Hygiene Laboratory, Medical College; estimate Rs. 17,347, expenditure Rs. 16,434.
- (15) Retiring room for female students, General Hospital; estimate Rs. 5,365, total expenditure Rs. 4,997.
- (16) Additions and improvements to the Resident Surgeon's quarters, General Hospital; estimate Rs. 12,478, expenditure Rs. 12,486.
- (17) Sergeant's quarters, General Hospital; estimate Rs. 6,232, expenditure Rs. 5,992.
- (18) Shed for out-patients at the General Hospital; estimate Rs. 3,332, expenditure Rs. 3,081.
- (19) Converting the Head Nurse's quarters, General Hospital, into quarters for Matron Superintendent; estimate Rs. 5,910, expenditure Rs. 5,338.
- (20) Converting the stage room of the Old College into a record and stationery room; estimate Rs. 3,370, expenditure Rs. 3,143.
- (21) Additions to the Chemical Laboratory, Presidency College; estimate Rs. 32,125, expenditure Rs. 13,142.

(22) Enclosing a piece of ground around Munro's Statue; estimate Rs. 4,595, expenditure Rs. 3,977.

(23) Providing roof lights to the record-room, Revenue Board's office; estimate Rs. 3,475, expenditure Rs. 2,611.

(24) Ornamental screen and balcony, Presidency College; estimate Rs. 2,610, expenditure Rs. 2,535. Work completed.

(25) Constructing a new ward and extending the existing main ward at the Leper hospital; estimate Rs. 6,013, total expenditure Rs. 5,811. This work was completed and made over in June 1891.

(26) Converting the Auxiliary Medical school, Ráyapuram, into quarters for two apothecaries; estimate Rs. 3,070, expenditure Rs. 2,518.

(27) Providing additional accommodation at the School of Arts; estimate Rs. 12,260, expenditure Rs. 6,427.

(28) Provision and store-room at the Ophthalmic hospital; estimate Rs. 3,510, expenditure Rs. 3,559. This work was completed in March 1892.

174. Rupees 46,508 were expended under Minor Original Works. Under Repairs Rs. 81,797 were expended on the annual and general repairs of buildings in charge of this division; of this sum, Rs. 2,640 was for municipal taxes on certain Public Works Department buildings and Rs. 1,613 for the conservancy of the floating and Senate house latrines.

IV.—PROVINCIAL—COMMUNICATIONS.

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

(1) Constructing Mahasinghi bridge; estimate Rs. 41,200, expenditure Rs. 13,943, against a grant of Rs. 15,000. All the iron girders were landed in March and April 1891 and conveyed to Russelkonda. Such portions of the old bridge as remained were demolished, and the sinking of wells for the foundations and collection of materials was in progress.

(2) Constructing road from Kallikót to Boirani; information required for the preparation of an estimate for this work was being collected expenditure Rs. 695 against a grant Rs. 700. This amount was expended in surveying and levelling the line and in clearing jungle.

(3) Constructing Ichápur-Jarada road; estimate Rs. 30,000, expenditure Rs. 15,022 against a grant of Rs. 15,000. Nearly the whole of the earthwork required was completed, and all necessary materials for road and masonry works collected and foundations for some of the masonry works laid.

(4) Constructing Tekkali-Anantagiri road; estimate Rs. 23,500, expenditure Rs. 635, against a grant of Rs. 650. This amount was spent on a portion of earthwork in 12th and 13th miles and in the collection of materials.

(5) Remaking 8th to 18th miles of the Battili-Heramandalam road; estimate Rs. 11,520, expenditure Rs. 3,732, against an allotment of Rs. 4,000. The amount spent during the year was chiefly in the collection of materials and in spreading them in a few miles where water was available.

(6) Constructing Berhampore-Govindapur road; estimate for this work was under preparation, expenditure Rs. 15,684 against a grant of Rs. 18,000. Nearly all the earthwork required from 7th mile of the Berhampore-Digupudi road to Podamary was completed, and materials were under collection. The lapse of grant was due to less work having been executed than anticipated and also to non-payment of certain bills pending inspection and check.

(7) Improving road from Govindapur to Lohagudi; estimate Rs. 2,450; expenditure Rs. 566, against a grant of Rs. 1,000. This sum was spent in packing rough stone revetments and clearing jungle. The short outlay was owing to the illness of subordinates, death of the contractor and difficulty in procuring labour.

(8) Metalling road from Udayagiri to Kalingia; estimate Rs. 4,250, outlay Rs. 248, against a grant of Rs. 1,500. Explanation for the short outlay has not yet been furnished by the Executive Engineer. The expenditure under repairs was Rs. 525 against a grant of Rs. 300.

176. **Vizagapatam.**—Completing road from Potinghi to Koraput; estimate Rs. 2,80,205, the outlay to end of the year was Rs. 2,81,072. The expenditure

during the year was Rs. 42,390 against an allotment of Rs. 40,000. The following bridges with their approaches were fully completed during the year :—

	Foot span.
(1) Maliapatti	20
(2) Kundali	70
(3) Pongar	15
(4) Doliamba	36
(5) Gerrugoida	15
(6) Gollagedda	36
(7) Gurunalli	20
(8) Pulachi	15
(9) Gopalputti	20
(10) Darugonda	15

The painting of none these has been done excepting to No. 8 on account of the dust caused by the heavy traffic. Karandi bridge—concrete foundations of this bridge were laid. Up to 31st March 1892 the following work was finished :—

The earthwork, with metalling and gravelling for the whole length of 30 miles, completed; all bridges and culverts completed with the exception of the Karandi bridge, the foundations of which were in progress. The traffic is now very considerable; in the month of January 1892 alone 14,815 loaded and 7,249 empty bandies used the road. The excess outlay during the year is explained by the Executive Engineer to be due to the fact that the Sub-divisional officer, Koraput, paid laborers for work done to the extent of Rs. 2,187 to prevent their dispersing; an additional allotment was applied for at the close of the official year, but this was not granted.

177. Potinghi Ghât road; estimate Rs. 4,49,374, outlay to end of the year Rs. 4,64,886. The expenditure during the year was Rs. 1,061 against a grant of 1,000. The parapet walls and approaches of the Raliagedda bridge were completed in September 1891, and the bridge opened for traffic. The construction of this bridge is a great convenience to traffic in place of the rough stone causeway across the river.

178. A sum of Rs. 168 was spent under Minor Original Works on account of establishment required for preparing an estimate for the continuation of the trunk road from the Koraput to the Central Provinces.

179. The annual grant for repairs was Rs. 24,000 against which an outlay of Rs. 24,801 was incurred in maintaining the following roads :—

	Rs.
1. Potinghi Ghât road	10,592
2. Potinghi-Koraput road	12,163
3. Turner's Ghât road	2,046
Total	24,801

180. **Coimbatore.**—The following works were in progress during the year :—

(1) Reconstructing the Farewell bridge at the 14th mile, Ootacamund-Kullar road; estimate Rs. 18,100, grant during the year Rs. 12,500, outlay up to 31st March 1892 Rs. 13,613. The outlay includes Rs. 3,648 spent on the erection of a temporary bridge below the old structure (wooden green post trusses), which was then taken down and the building of the new bridge proceeded with. The new structure, which will be an ornament to the ghât when completed, is to be a single span of 65 feet wrought iron whipple Murphy trusses, supported by massive stone abutments. The girders were being erected at the end of the year.

(2) Constructing an iron girder bridge on the Kullar river; estimate Rupees 28,600, outlay Rs. 1,803.

(3) Constructing an iron girder bridge on the Burlyar river; estimate Rs. 15,600, outlay Rs. 966.

The outlay on these two works was on account of wood supplied by the Forest department.

181. The following repairs were executed at a cost of Rs. 14,916 against an allotment of Rs. 44,100.

(1) Annual maintenance of Ootacamund-Kullar road; outlay Rs. 30,026.

(2) Rebuilding revetment in the 7th furlong 19th mile on Ootacamund-Gudalur road; outlay Rs. 1,977.

(3) Special repairs to Ootacamund-Kullar road; outlay Rs. 14,148 incurred in consequence of the extraordinary floods of October 1891.

182. **North Arcot.**—A road dam at the 31st mile on the road from Arni to Wandiwash was in progress. Rs. 2,840, were spent against an estimate of Rs. 4,120. The work did not progress as well as it should have done owing to the dilatoriness of the contractor.

183. **West Coast.**—Improvements to the Vayitri-Gudalur road continued to make good progress; outlay during the year Rs. 1,98,495 against a grant of Rs. 2,00,000. The total outlay to the end of the year was Rs. 5,31,904 against an estimate of Rs. 6,60,700. All the iron work for bridges arrived from England; consolidation went apace; all the culverts completed. Bridges Nos. 21, 34, 35, 48, 93, 97, 99, 101, 103, 162, 241, 249 and 434 were completed. Bridges Nos. 243, 295, 381, 388, 408, 424 and 487 were also finished with the exception of cut-stone string course, and parapet abutments of bridge No. 26 were finished.

184. The Calicut-Vayitri road was maintained in an efficient state at a cost of Rs. 26,168. The Vayitri-Bazaar road was improved by a broad road and cut-stone walling. The inspection houses were repaired and kept in good order and out-houses built to those at Karandur, Vennakat, Tamracherri and Pudupadi and cooly lines built at the latter place. The unusual downpour on the 4th and 5th July 1891 caused a very heavy landslip in the 33rd mile, which was promptly cleared and a very substantial revetment built. The expenditure on the work Rs. 2,260.

185. The usual repairs to the Vayitri-Gudalur road were executed; outlay Rs. 21,694. All the inspection bungalows were much improved and a water closet made at the Cherambadi bungalow. The Bazaar roads at Cherambadi, Pundalur and Devala were improved with side walling. Good bandy sheds were made at Naikan Shola and Kunnumbetta.

186. **South Arcot.**—Bridges over the Ponnar and Gaddilam near Cuddalore were completed and opened for traffic in March 1891 as reported in the previous year's report. To carry out works necessary for the proper completion of these bridges an allotment of Rs. 1,965 was sanctioned and the work was executed by the Local Fund department.

187. **Madura.**—Constructing a bridge over the Suriliyar at Uthamapaliem, estimate Rs. 36,840. Foundations for two piers and retaining wall were almost completed to floor level; right abutment was raised to springing of arch and the left to 9 inches below that level; No. 3 pier was raised to 8 feet height; outlay Rs. 14,095.

188. Constructing a bridge over the Suriliyar at Veerapandy; estimate Rs. 31,900. Both abutments were raised to springing of arch and one pier to 7 feet height; masonry foundation of another pier completed up to bed level, while the foundations for centre pier were in progress; outlay Rs. 11,173.

189. **Presidency.**—A sum of Rs. 13,504 was paid to the Madras Municipality for maintaining the bridges over the Cooum river.

V.—PROVINCIAL—MISCELLANEOUS PUBLIC IMPROVEMENTS.

190. **Godavari (Eastern).**—The roads and wells in Sappers cantonment were repaired at a cost of Rs. 262 against a grant of Rs. 300.

191. **Kistna (Eastern).**—Widening Ryves' canal; estimate Rs. 11,000, outlay to date Rs. 9,279. Work completed.

192. Regulator Ryves' canal; estimate Rs. 9,100, outlay Rs. 4,663, total outlay to date Rs. 8,514. Work completed.

193. **Kurnool.**—Improvements to the Kurnool town wall were put in hand as a famine relief work and completed during the year; estimate Rs. 1,070, outlay Rs. 917.

194. **Coimbatore.**—A sum of Rs. 1,119 was spent on the following works :—

- (1) Erecting guard bank inside Ootacamund lake fencing; outlay Rs. 774.
- (2) Fencing around the Marliamund reservoir at Ootacamund; outlay Rs. 345.

195. The following works were repaired at a cost of Rs. 3,775 :—

- (1) Clearing weeds in the Ootacamund lake; outlay Rs. 384.
- (2) Repairing the fencing around Ootacamund lake; outlay Rs. 2,680.
- (3) Desinfecting the margin of the Willow bund on the lower lake side, Ootacamund; outlay Rs. 20.
- (4) Repairing the water-supply works at Gúdalúr, Nilgiri district; outlay Rs. 23.
- (5) Removing wattle around the margin of Ootacamund lake; outlay Rs. 200.
- (6) Removing fencing from Marliamund reservoir, Ootacamund; outlay Rs. 172.
- (7) Clearing scum and desinfecting the foreshore of Ootacamund lake above the Willow bund in the Nilgiri district; outlay Rs. 79.
- (8) Removing fencing from Snowdon saddle; outlay Rs. 128.
- (9) Clearing the channels running through the low-lying land between Charing cross and the entrance to Government gardens, Ootacamund; outlay Rs. 89.

196. **West Coast.**—A sum of Rs. 941 was spent in providing a rough-stone revetment to protect the foreshore opposite the Public offices at Ponáni. Work in progress.

197. **Madura.**—Cutting a rough trace from Kodaikanal to Pillar rock. This was an incomplete work of the previous year and it was still left incomplete, as the land required was not acquired; Rs. 913 were spent on it in the preceding year and Rs. 63 in the year under review.

198. **Presidency.**—Rs. 12,613 were expended in maintaining Chepák Park and Marina, maintaining grass plots and trees in the old fishing village and conservancy of the Cooum river.

VI.—LOCAL INCORPORATED.

199. **Rushikulya.**—The Aska and Suradá road was maintained at a cost of Rs. 398.

200. **Godavari (Eastern).**—Widening and gravelling the Godavari left embankment in the first 4 miles below the anicut for adoption as a road; estimate Rs. 9,100, outlay Rs. 8,527. The work was virtually completed.

201. Sluice to supply Kotipalli tank bank; canal was constructed at a cost of Rs. 155 against an estimate of Rs. 180.

202. The ordinary repairs to Kovur-Manjair junction canal were carried out at a cost of Rs. 3,564.

203. **Godavari (Western).**—The following works were executed or in progress during the year :—

(1) Constructing an iron girder bridge at the 20th mile of the Khandavalli road; estimate Rs. 6,950, expenditure Rs. 4,909, against a grant of Rs. 5,900. Nearly all the materials required were collected at site, and the girders were prepared at the Dowlaishweram workshop.

(2) Constructing culvert over Palivela drain at Ralli; estimate Rs. 780, outlay Rs. 196. Nearly completed.

(3) Constructing Komaragiri Patnam road culvert; estimate Rs. 770, outlay Rs. 180. Work completed.

(4) Widening the roadway of the Singaram irrigation sluice between Nidadavol and Chettipett; estimate Rs. 250, expenditure Rs. 79. Materials under collection.

204. **Kistna (Eastern).**—Under Civil Buildings the most important work undertaken was the Jubilee Museum at Bezváda; estimate Rs. 19,006, outlay Rs. 6,994, total outlay to date Rs. 13,731. The masonry work was completed up to level of the roof. The iron work was being fixed in position.

205. Construction of a bridge over Ryves' canal; estimate Rs. 17,800, outlay Rs. 10,461, total outlay Rs. 12,449. Masonry work completed up to springing line

of arches. The wooden centrings were all ready and were in process of being lifted into position to commence the archwork. This work was first sanctioned from Canal and Ferry funds and was afterwards transferred to Incorporated Local.

206. **Salem.**—Thalavasal bridge was completed except building caps to piers. The bridge was opened for traffic in 1891. Estimate Rs. 69,841, outlay during the year Rs. 4,468, against an allotment of Rs. 3,999.

207. **North Arcot.**—The construction of a causeway across the Pálár river on the road from Ránipet to Arcot was in progress. The work could not be pushed on owing to failure on the part of the contractor. Estimate Rs. 55,000, outlay during the year Rs. 15,270, against an allotment of Rs. 15,000.

208. **South Arcot.**—The roads along Coleroon bank, Khan Saib's canal, Veeranam tank bank, and Vadavar bank were repaired at an outlay of Rs. 2,775.

209. The restoration of Shatiatope anicut bridge was carried out, the outlay up to end of the year having been Rs. 10,670 against an estimate of Rs. 12,278.

210. **Tanjore.**—One hundred and one miles of roads on river embankments were maintained at a cost of Rs. 5,659.

211. **Negapatam.**—Forty-five and a half miles of roads on river embankments were maintained at an outlay of Rs. 5,877.

212. **Tinnevely.**—On repairs to Ponnankamickulam tank, the Local Fund contribution of Rs. 606 was spent and the work completed on an estimate of Rs. 1,753.

213. **Trichinopoly.**—Road No. XX from Sirudayur to Lower anicut *via* Sengarayur was maintained and breaches thereon repaired at a cost of Rs. 1,017, and the road along the Iyar Konaikarai flood bank was maintained at an outlay of Rs. 164.

VII.—LOCAL EXCLUDED.

214. **Ganjam.**—The following works were completed :—

(1) Constructing a cook-house to lightkeeper's quarters, Calingapatam; estimate Rs. 380, expenditure Rs. 12 during the year and up to date Rs. 391.

(2) Constructing a store-room to Calingapatam lighthouse; estimate Rs. 390, expenditure Rs. 355.

(3) Constructing a shed for signallers of the flagstaff at Calingapatam lighthouse; estimate Rs. 360, expenditure Rs. 333.

215. **Godavari (Eastern).**—An estimate of Rs. 1,200 was sanctioned during the year for "Repairs to Marine Villa, Cocanada;" outlay Rs. 1,353 against a grant of Rs. 1,200. The excess was due to the additional wood-work found necessary after dismantling the old roof.

216. **Vizagapatam.**—A sum of Rs. 51 was spent on fixing an additional lightning-conductor to Santopilli lighthouse; estimate Rs. 70.

217. **Kistna (Eastern).**—The chief works under construction during the year were :—

(1) Wind indicator of Port office, Masulipatam, Rs. 18.

(2) Repairing lighthouse at Point Divi, Rs. 297.

(3) Repairing old quay wall at fort of Masulipatam, Rs. 298.

218. **Buckingham Canal.**—Constructing cooking shed for lascars at Armeghan lighthouse; grant Rs. 336, outlay Rs. 185. Work completed.

219. The following repairs were carried out and completed :—

(1) Repairs to light-house at Pulicat.

(2) Repairs to seven pagodas.

(3) The ventilator for the Pulicat lighthouse.

(4) Repairs to obelisk at Kottapatam.

220. **West Coast.**—The following works were completed:—

- (1) Erecting groyne P at Cruz Milagre Dam at Cochin; estimate Rs. 710, outlay Rs. 668.
- (2) Constructing revetment in front of flagstaff at Cochin; estimate Rs. 480, outlay Rs. 462.
- (3) Raising the revetment in front of Messrs. Pierce, Leslie and Co.'s office at Cochin to protect the ground from further erosion; estimate Rs. 420, outlay Rs. 421.
- (4) Rough stone revetment between groynes K and L on foreshore at Vypeen; estimate Rs. 350, outlay Rs. 351.
- (5) Repairs to lighthouse at Calicut; estimate Rs. 350, outlay Rs. 344.
- (6) Repairs to flagstaff at Beypore; estimate Rs. 430, outlay Rs. 335.
- (7) Repairs to masonry pier and boat jetty at Cannanore; estimate Rs. 380, outlay Rs. 373.
- (8) Repairs to lighthouse at Tellicherry; estimate Rs. 110, outlay Rs. 60.
- (9) Repairs to flagstaff at Tellicherry; estimate Rs. 90, outlay Rs. 95.

221. **South Arcot.**—Rs. 806 were spent in repairing jetty, strengthening piles and removing timber at Porto Novo and repairing and strengthening the signallers' shed at the same place.

222. **Negapatam.**—The jetty wall of the Negapatam harbour was repaired at a cost of Rs. 140.

223. **Madura.**—Repairs to the Port officer's bungalow at Pamban, in progress in the preceding year were completed at a cost of Rs. 165, of which Rs. 95 were spent in the year.

224. **Tinnevely.**—Provision of wooden covering to the light and for wooden ladder and lightning conductor and construction of cook-house attached to the light-keeper's quarters with compound wall in front of the quarters of the light house at Manapad, which were all in progress in the preceding year, were completed at a cost of Rs. 1,441, of which Rs. 312 were spent in the year. Repairs to the light house and replacing its lightning conductor at Muttam were in progress, and repairs to the lighthouse at Hare Island, Tuticorin, and Manapad were carried out at an outlay of Rs. 784.

225. **Presidency.**—Rs. 2,937 were expended on original works and repairs to the Senate house.

VIII.—MISCELLANEOUS—DEPOSITS CONTRIBUTIONS.

226. **Kistna (Eastern).**—Constructing a well in the compound of police station at Buckinghampet; amount of contribution Rs. 472, outlay Rs. 153. Well sunk 6 feet.

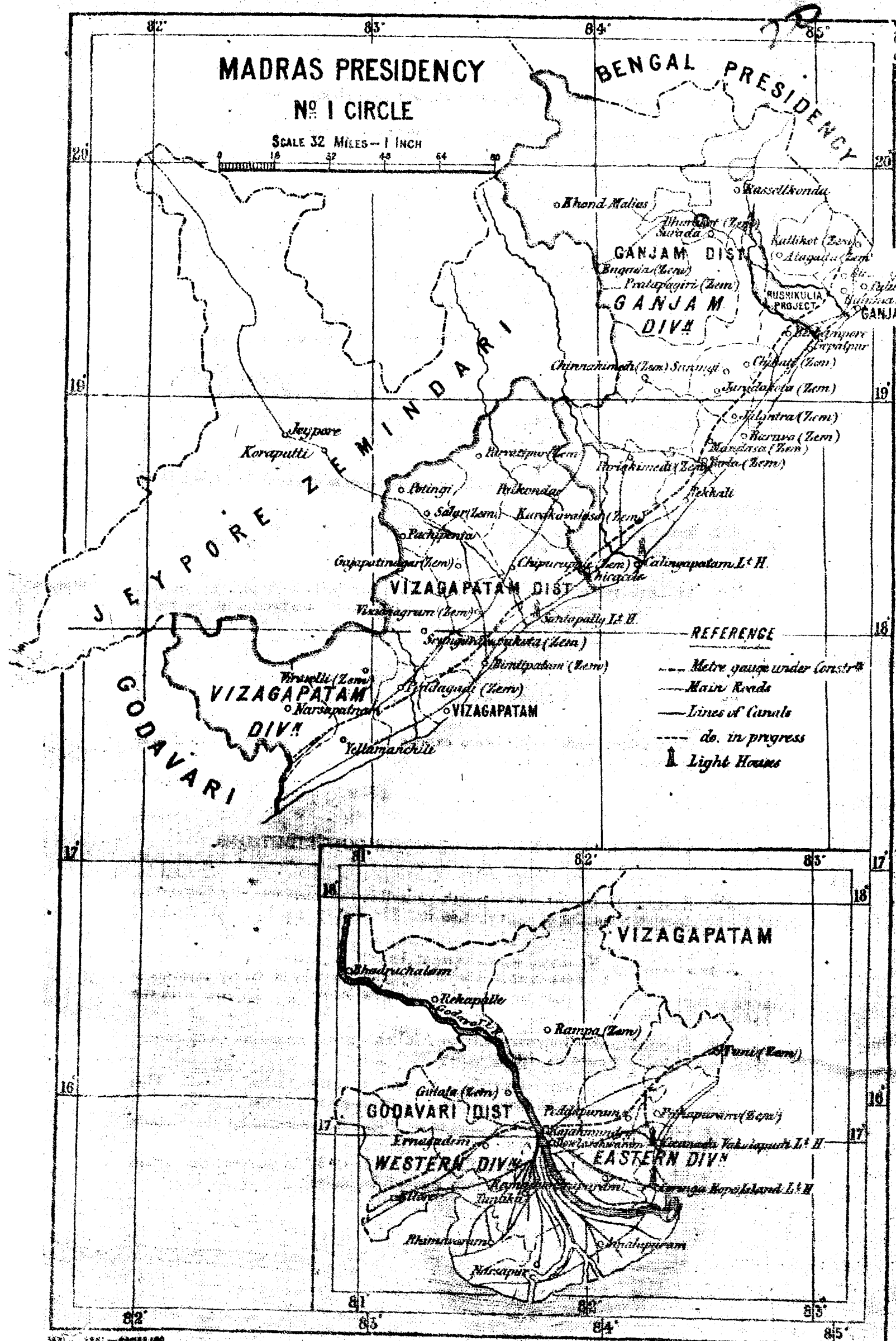
227. **Bellary.**—Municipal school house at Anantapur; estimate Rs. 15,777, total outlay Rs. 2,620. The work was in abeyance pending orders of Government as to a more suitable site. It was transferred to the new Anantapur division with the balance of the grant.

228. **Coimbatore.**—Improvements to Kinlock's Girls' school at Ootacamund. Work completed; estimate Rs. 1,370, outlay Rs. 1,381.

229. **Presidency.**—Cricket pavilion at Chepak; estimate Rs. 13,440. This work was completed for the estimated amount and made over in January 1892.

230. Certain minor works, amounting to Rs. 403, were executed for the Victoria hospital for caste and gosha women.

231. Rs. 1,292 were expended during the year 1891-92 in carrying out certain works and repairs for the Military Orphan Asylum buildings.



SCALE 32 MILES - 1 INCH.

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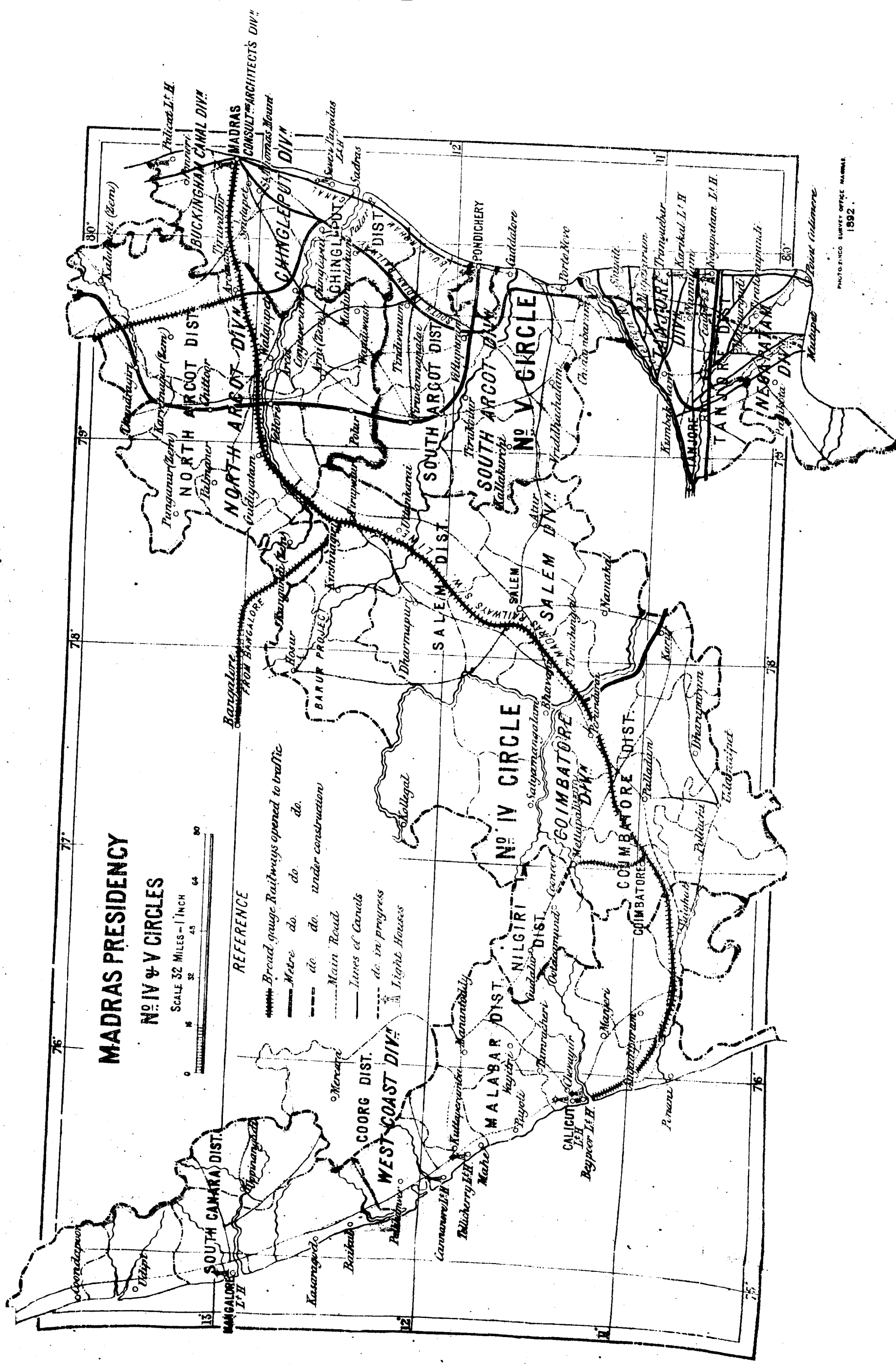
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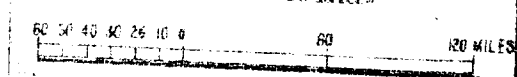
PAUL C. ZIMMO, JUDGE OF THE COURT



MAP OF THE MADRAS PRESIDENCY

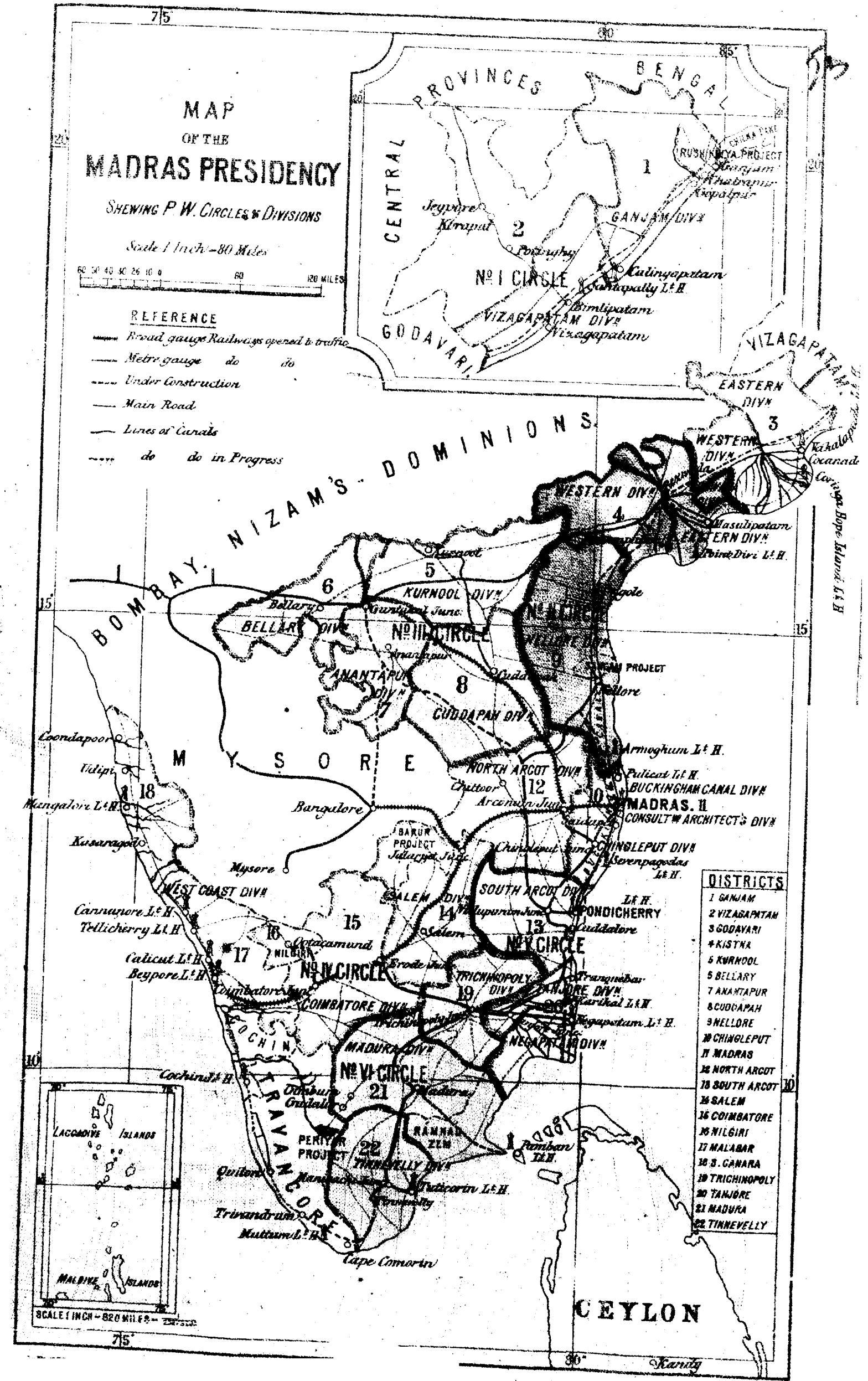
SHOWING P.W. CIRCLES & DIVISIONS

Scale 1 Inch = 80 Miles

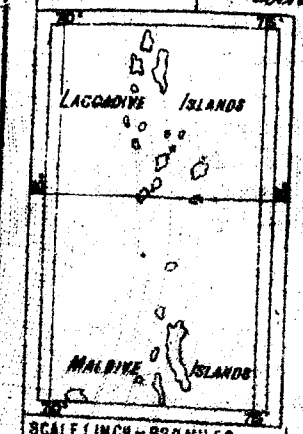


REFERENCE

- Broad gauge Railways opened to traffic
- Metro gauge do do
- Under Construction
- Main Road
- Lines of Canals
- do do in Progress



- DISTRICTS**
1. GANJAM
 2. VIZAGAPATNAM
 3. GODAVARI
 4. KISTNA
 5. KURNOOL
 6. BELLARY
 7. ANANTAPUR
 8. CUDDAPAH
 9. HELLORE
 10. CHINGLEPUT
 11. MADRAS
 12. NORTH ARCOT
 13. SOUTH ARCOT
 14. SALEM
 15. COIMBATORE
 16. NILGIRI
 17. MALABAR
 18. S. CANARA
 19. TRICHINOPOLY
 20. TANJORE
 21. MADURAI
 22. TINNEVELLY



MADRAS PRESIDENCY

No VI CIRCLE

SCALE 32 MILES = 1 INCH

REFERENCE

- Metre Gauge Railways Opened to Traffic
- D^o under Construction
- Main Roads
- Lines of Canals
- D^o in Progress
- Light Houses

