

TWENTY-SIXTH ANNUAL REPORT

1 366
16

OF THE

SANITARY COMMISSIONER

FOR

MADRAS,

1889.

WITH

APPENDIX

CONTAINING

VITAL STATISTICS OF THE GENERAL POPULATION.

MADRAS:

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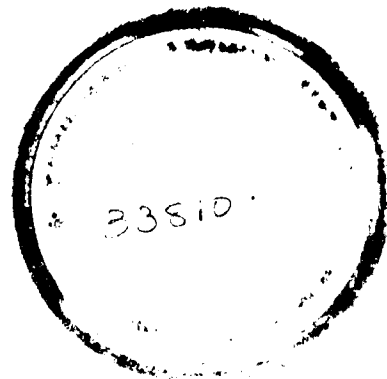
1890.

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TWENTY-SIXTH ANNUAL REPORT

OF THE

SANITARY COMMISSIONER FOR MADRAS, 1889.

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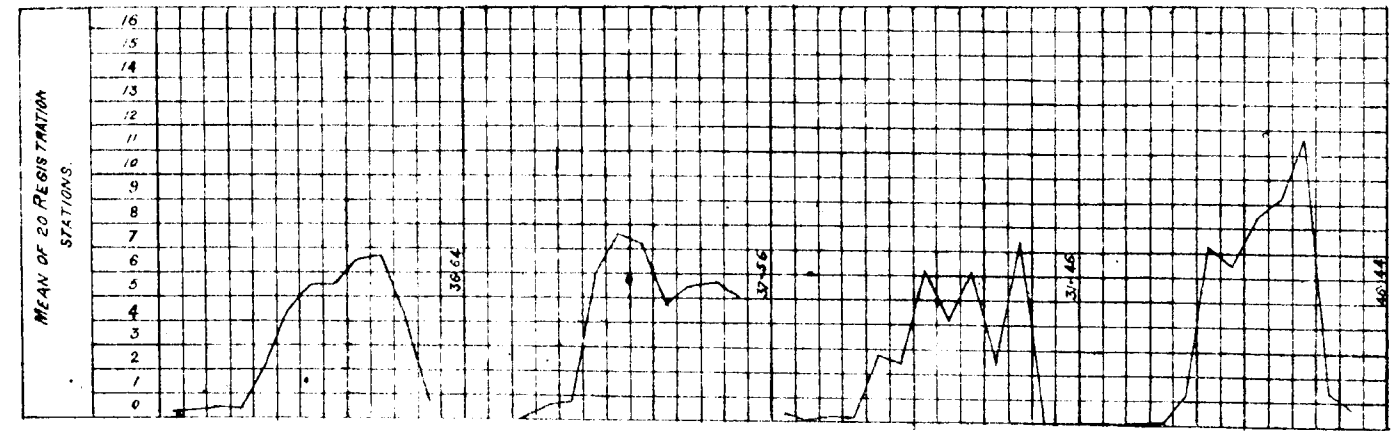
(a) Omitted by Order of Government, dated 20th April 1888, No. 419, Public.

(b) Omitted by Orders of Government, dated 12th July 1886, No. 1455, and 3rd May 1888, No. 465, Public, and reported upon separately.

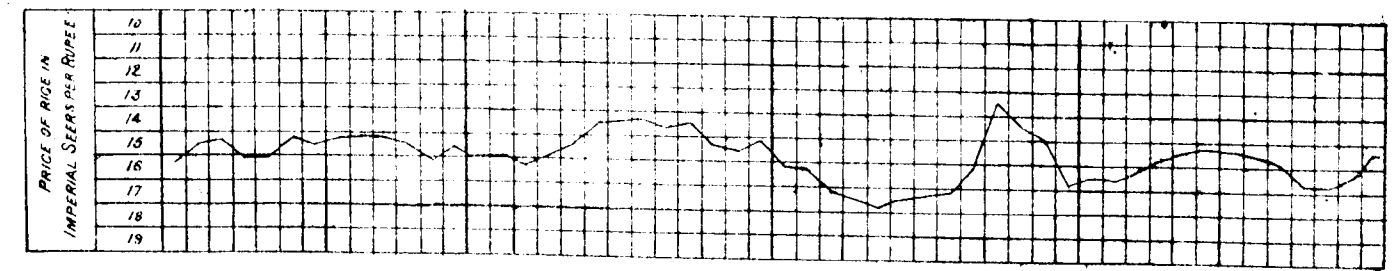
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RICE) IN THE DISTRICTS OF GODAVARI & KISTNA FOR
3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS
GODAVARI

DISTRICTS	YEARS		AVERAGE OF 10 YEARS												1887												1888												1889											
	MONTHS		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL									

RAINFALL

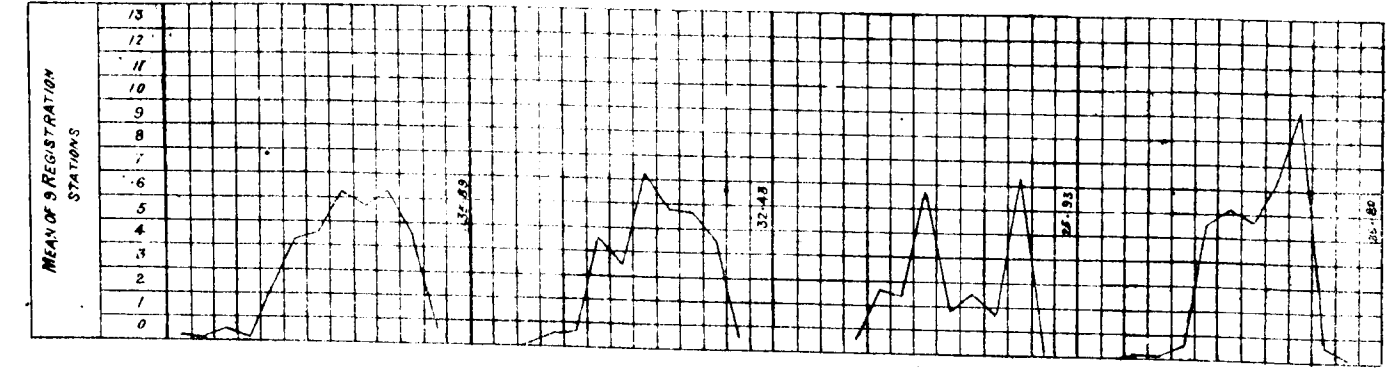


PRICE OF FOOD (RICE)

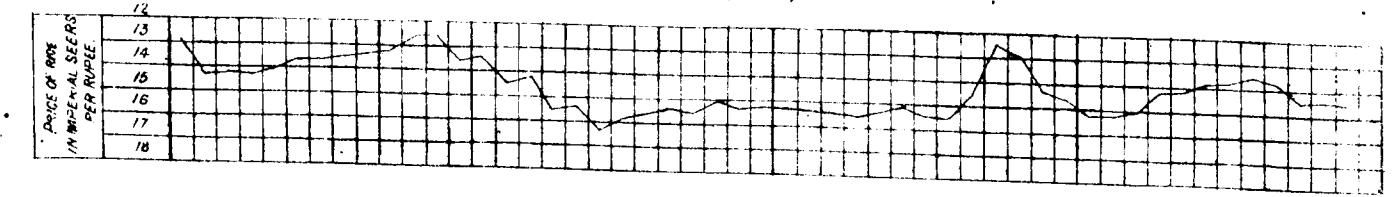


KISTNA

RAINFALL



PRICE OF FOOD (RICE)



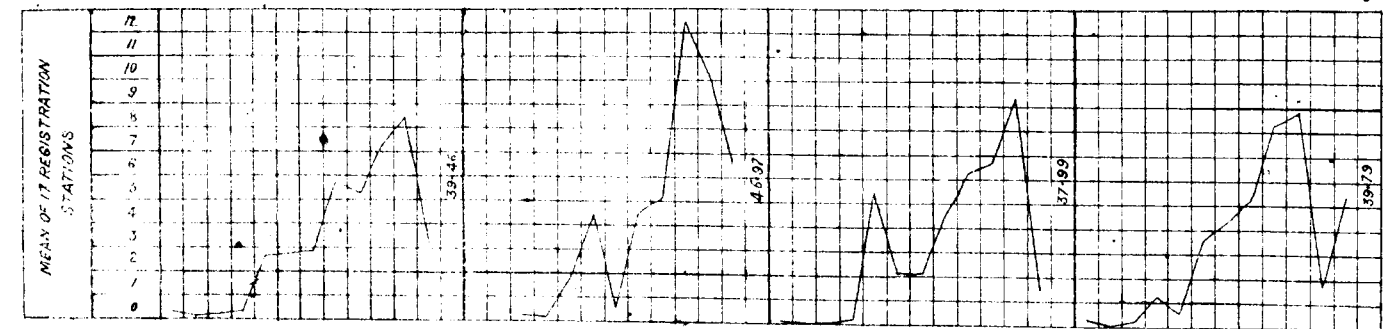
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DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RAGI) IN THE DISTRICTS OF NORTH ARCOT & NELLORE
FOR 3 YEARS ENDING 1889 COMPARED WITH THE AVERAGE OF 10 YEARS.

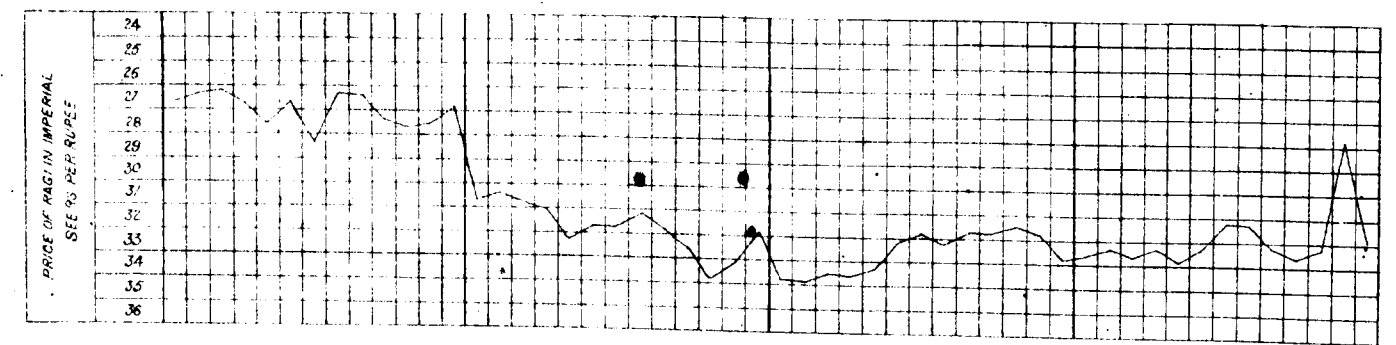
NORTH ARCOT

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888												1889											
	MONTHS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL									

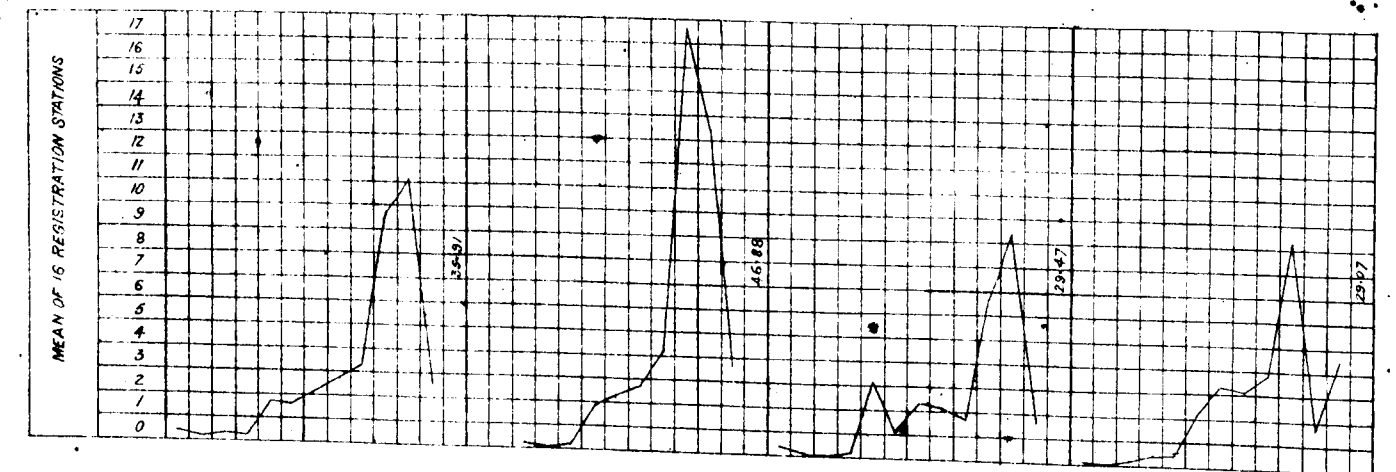
RAINFALL



PRICE OF FOOD (RAGI)



NELLORE
RAINFALL



PRICE OF FOOD (RAGI)

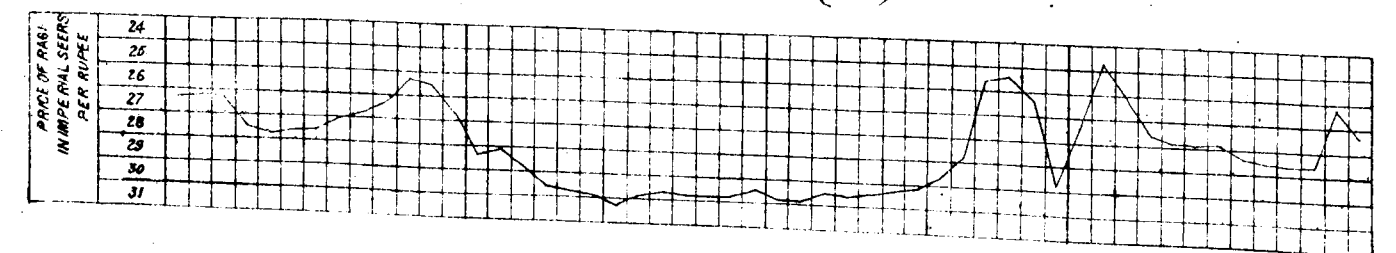


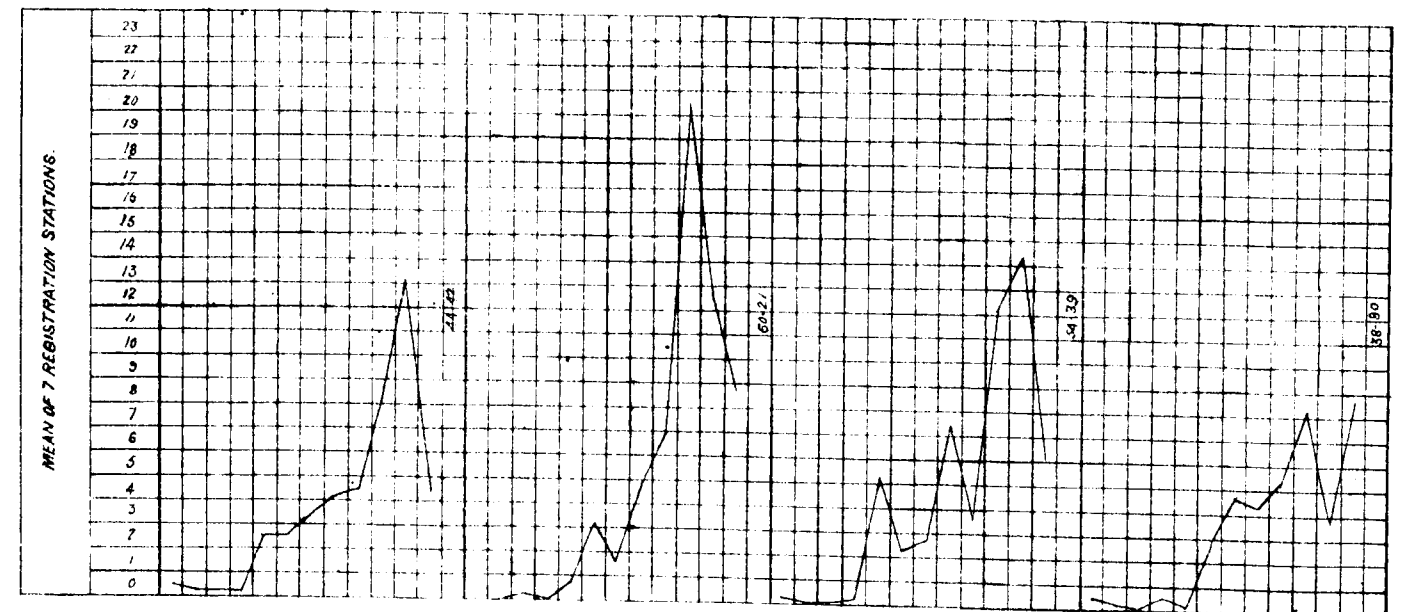
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RICE) IN THE DISTRICTS OF CHINGLEPUT & MADRAS
FOR 3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS

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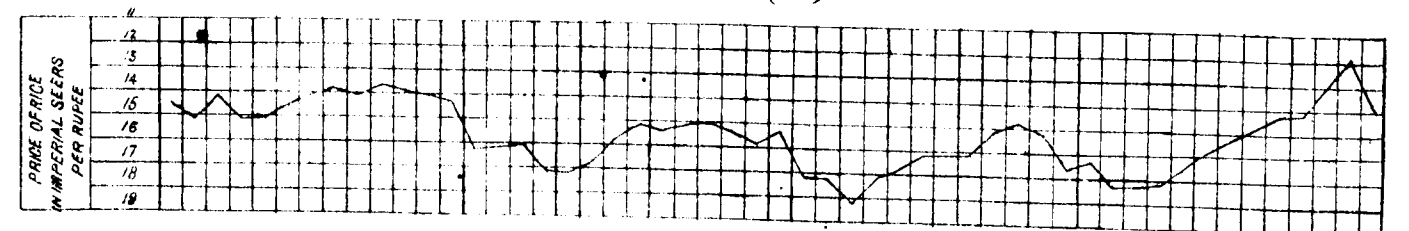
CHINGLEPUT

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888														1889													
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL

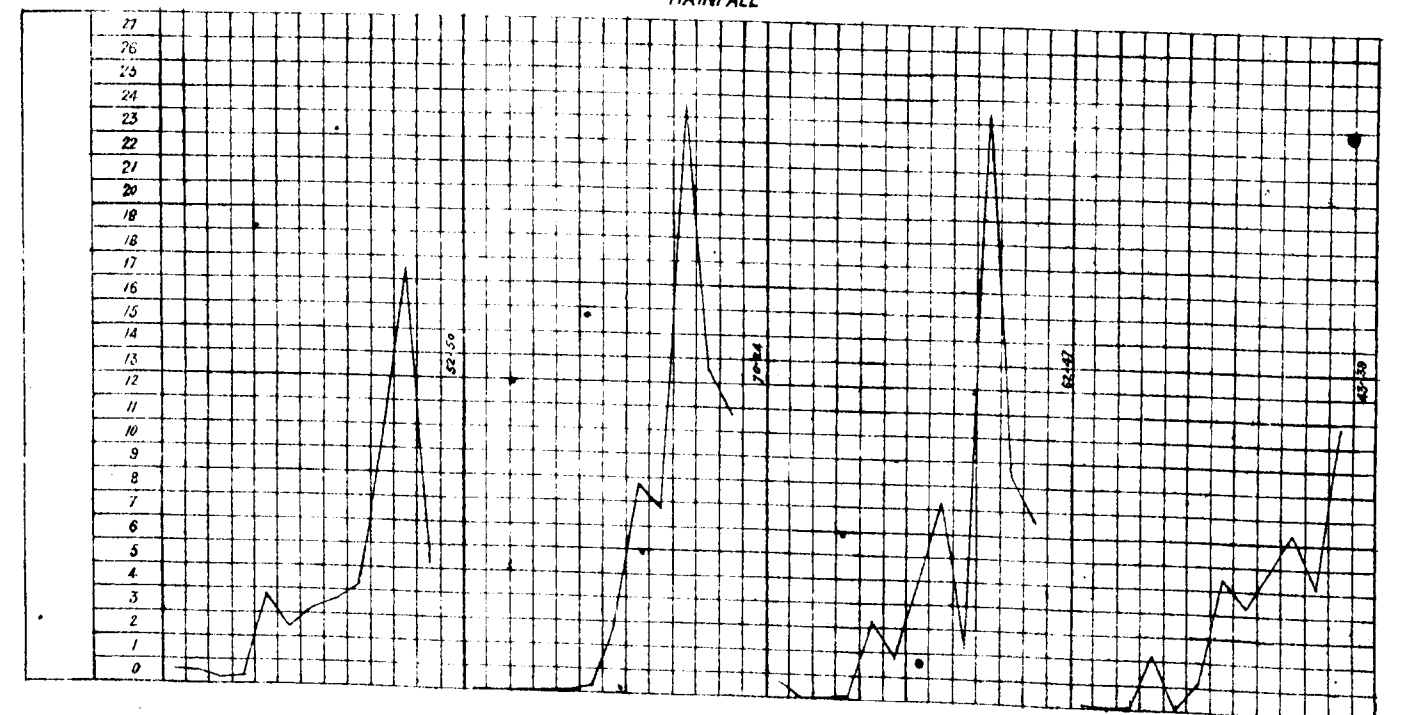
RAINFALL



PRICE OF FOOD (RICE)



MADRAS
RAINFALL



PRICE OF FOOD (RICE)

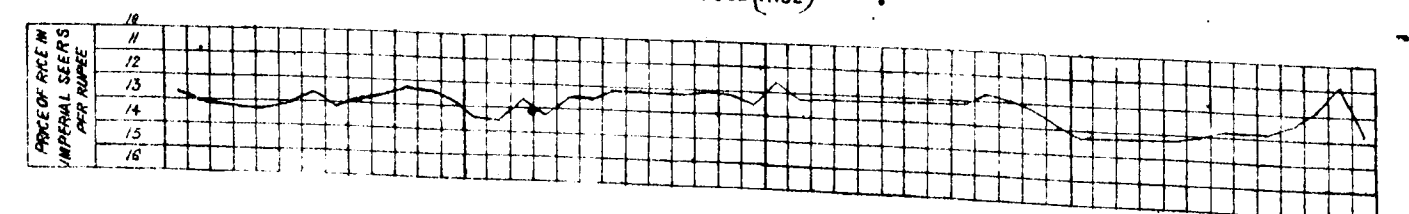


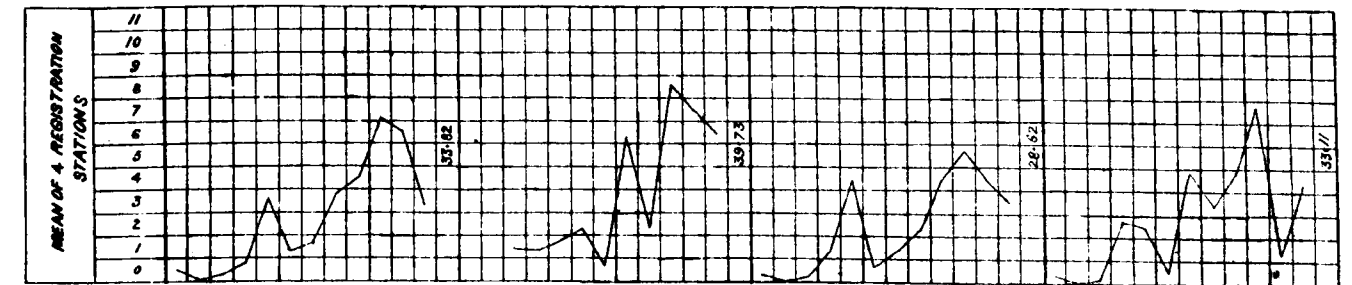
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (CUMBU) IN THE DISTRICTS OF TRICHINOPOLY AND (RICE)
IN THE DISTRICT OF TANJORE FOR 3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS

6E

TRICHINOPOLY

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888												1889														
		MONTHS	JAN	FEB	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.

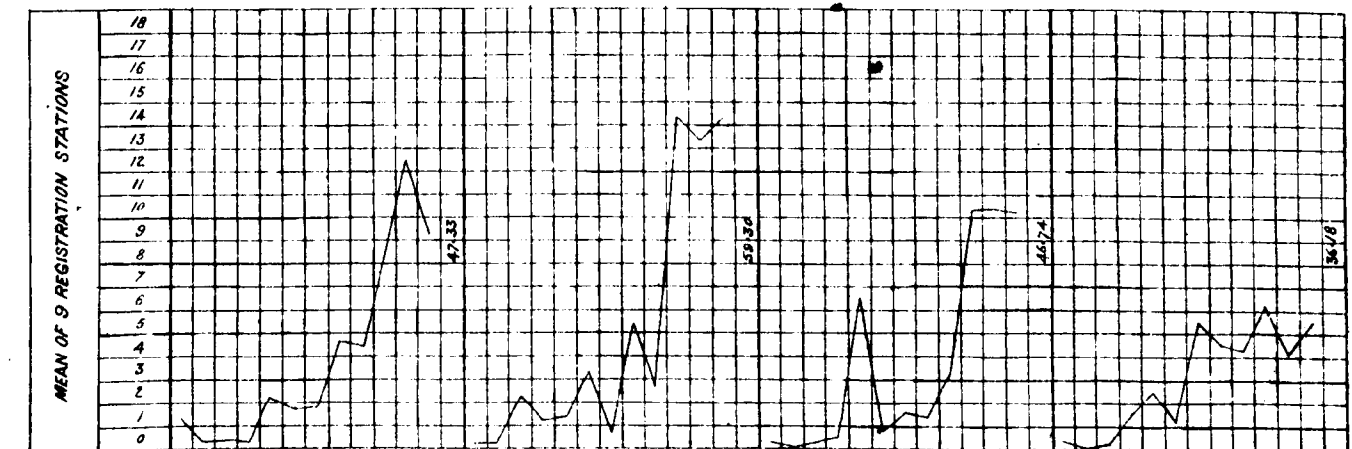
RAINFALL



PRICE OF FOOD (CUMBU)



TANJORE
RAINFALL



PRICE OF FOOD (RICE)

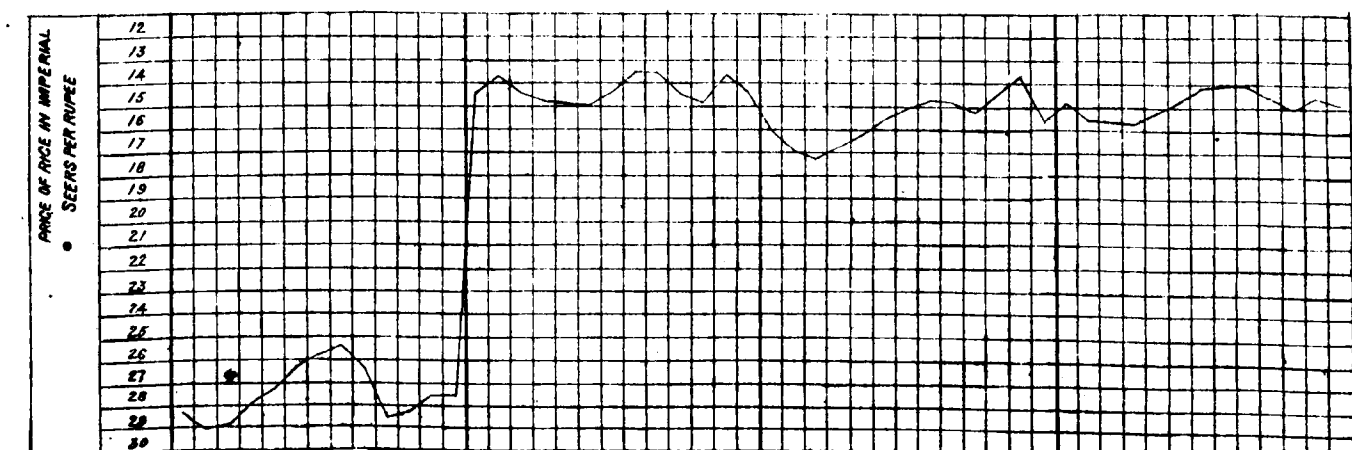


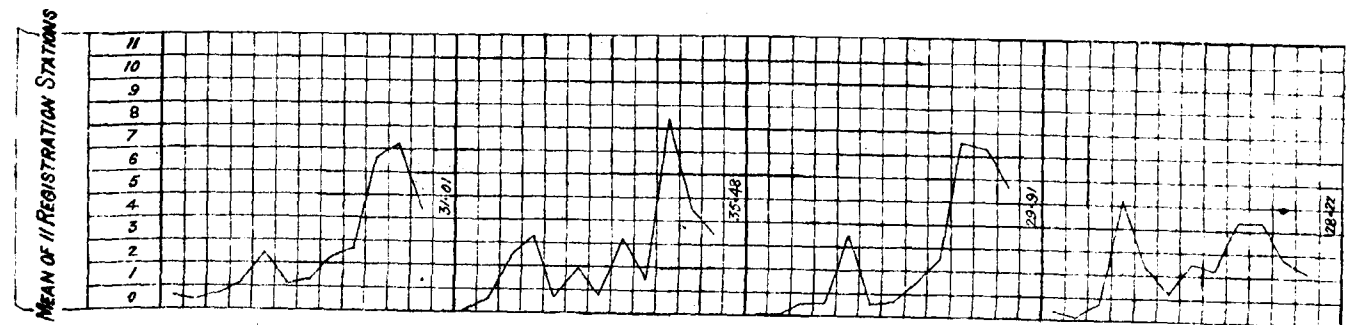
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RAGI) IN THE DISTRICT OF MADURA & (CUMBU) IN THE DISTRICT OF TINNEVELLY 3 YEARS ENDING 1889, COMPARED WITH AVERAGE OF 10 YEARS.

68

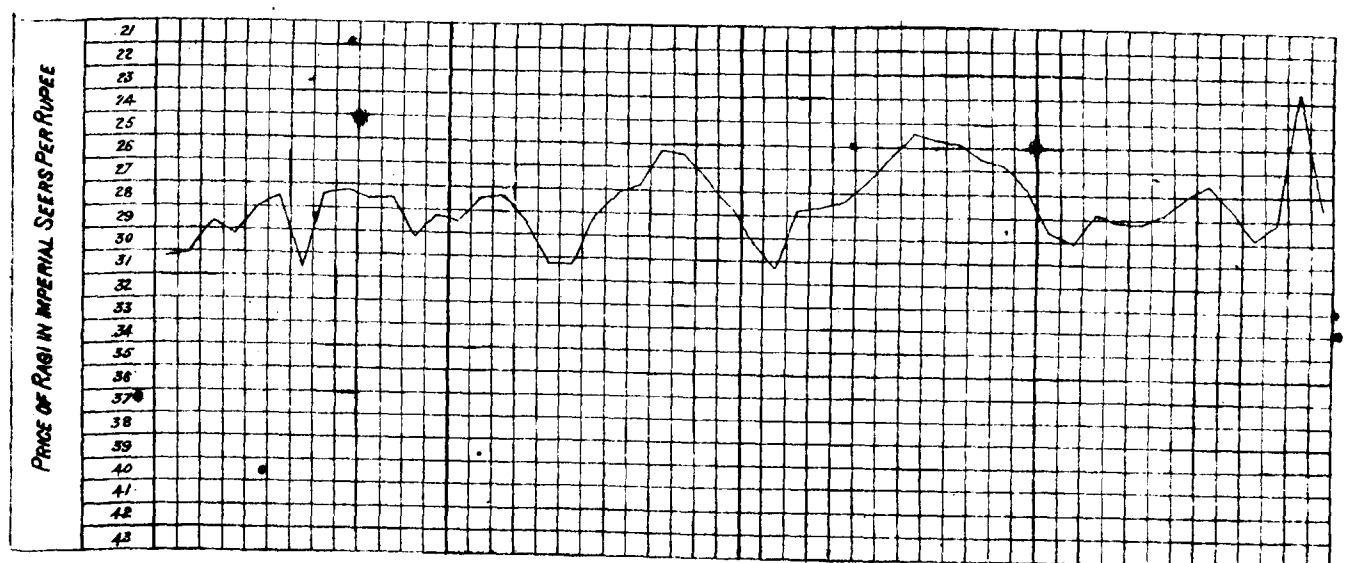
MADURA

DISTRICTS	YEARS	AVERAGE OF 10 YEARS.												1887												1888												1889											
	MONTHS	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL									

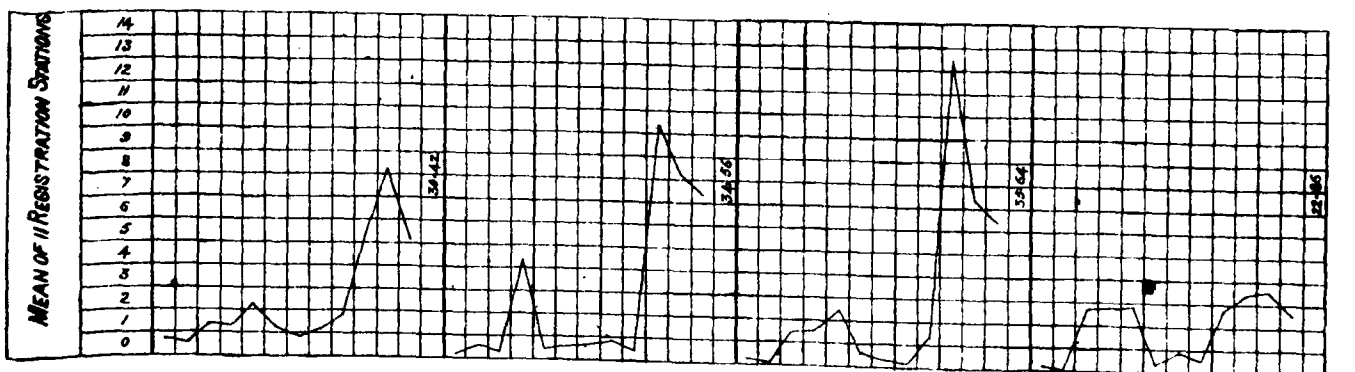
RAINFALL



PRICE OF FOOD (RAGI)



TINNEVELLY RAINFALL



PRICE OF FOOD (CUMBU)

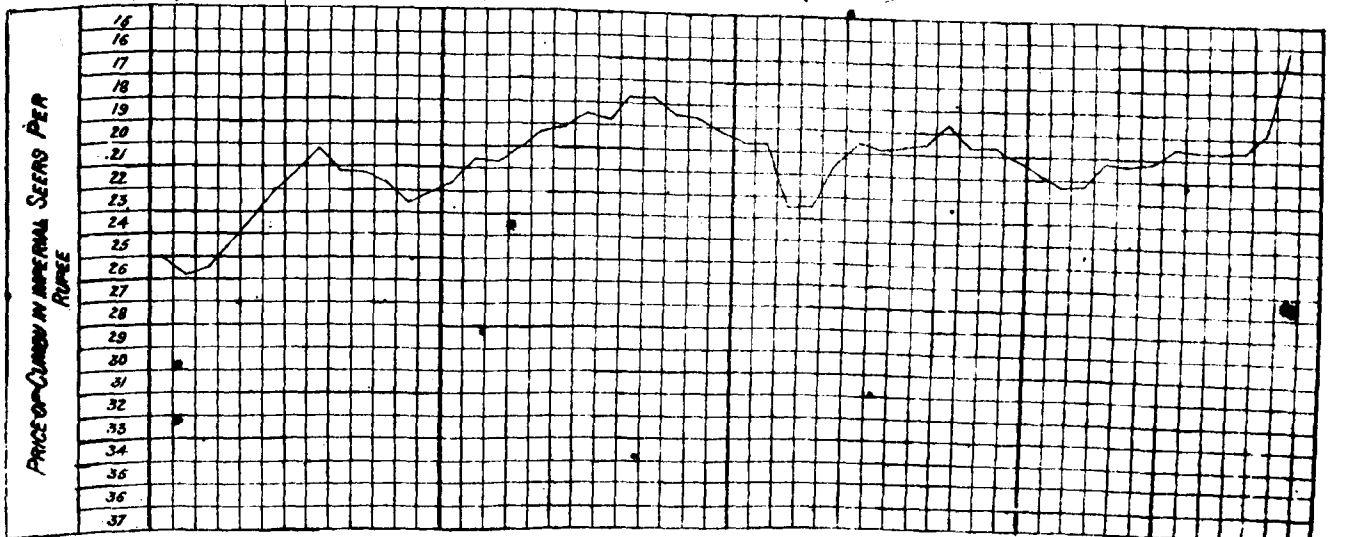


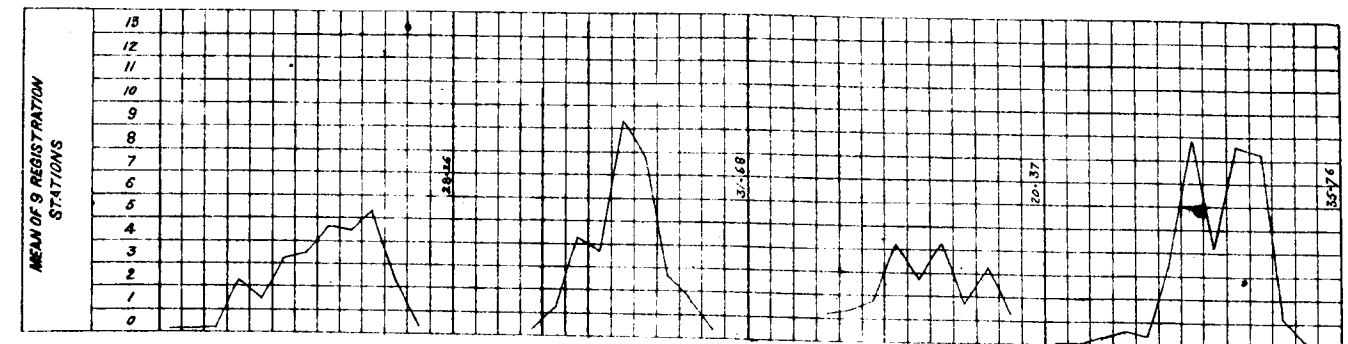
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (CHOLUM) IN THE DISTRICTS OF KURNOOL & BELLARY
FOR 3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS

60

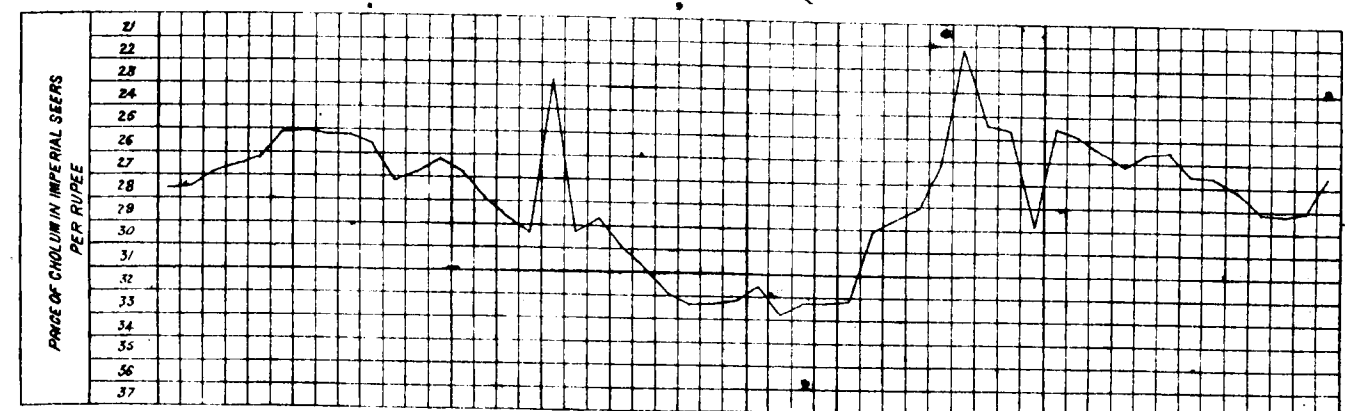
KURNOOL

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888												1889 *														
	MONTHS	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.

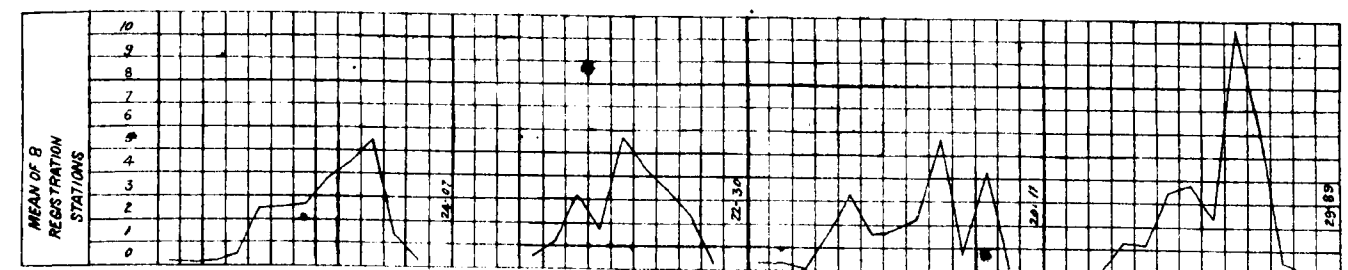
RAINFALL



PRICE OF FOOD (CHOLUM)



BELLARY RAINFALL



PRICE OF FOOD (CHOLUM)

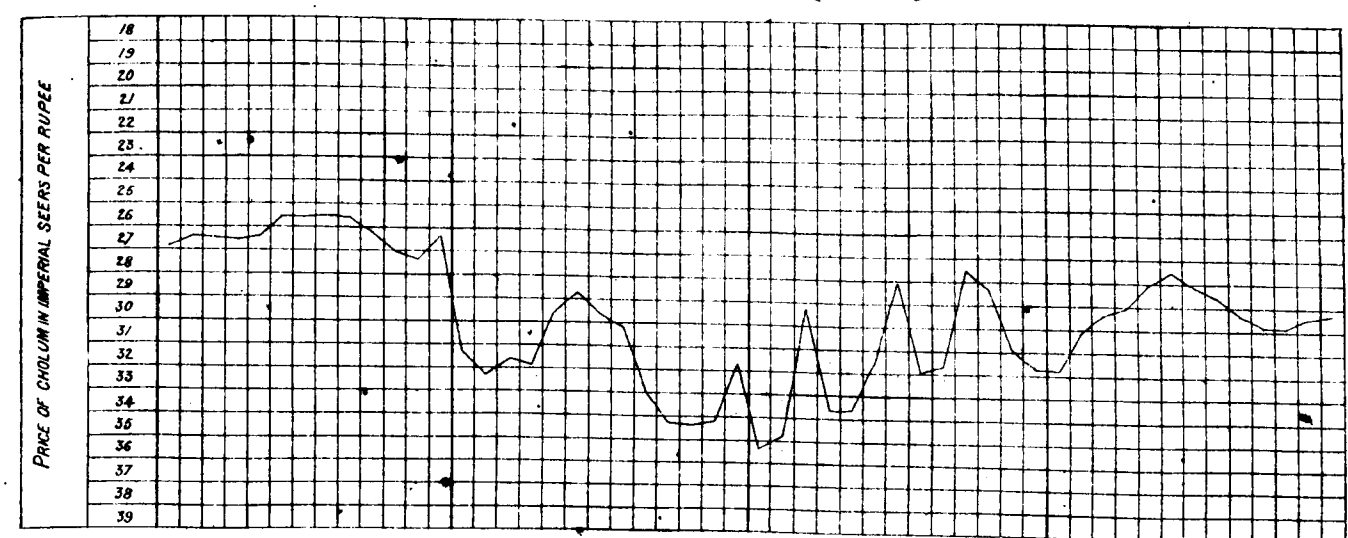


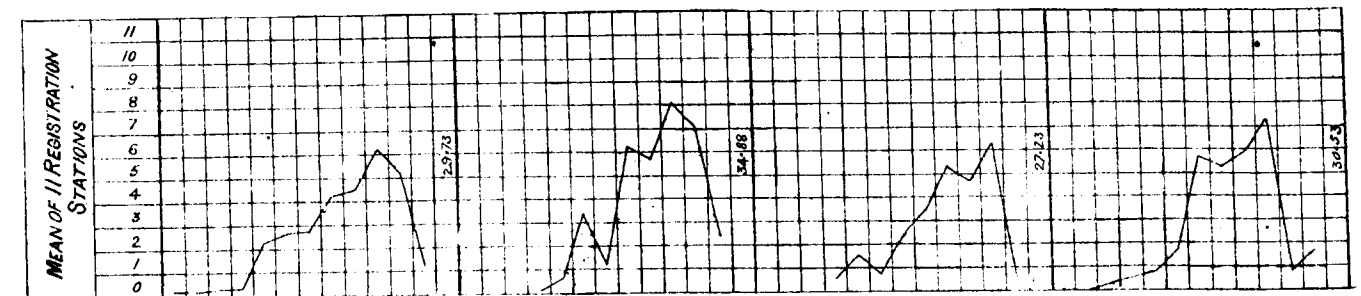
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (CHOLUM) IN THE DISTRICTS OF CUDDAPAH & ANANTAPUR
FOR 3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS.

64

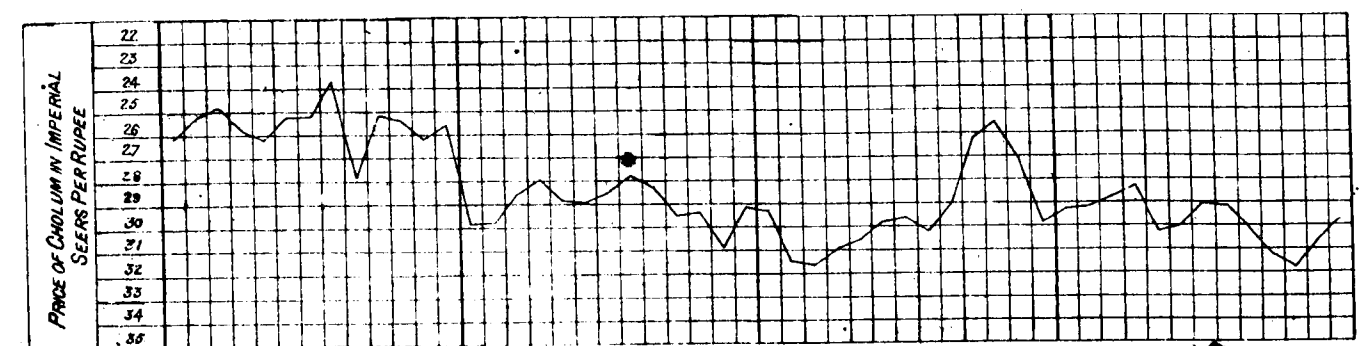
CUDDAPAH

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888												1889											
	MONTHS	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL									

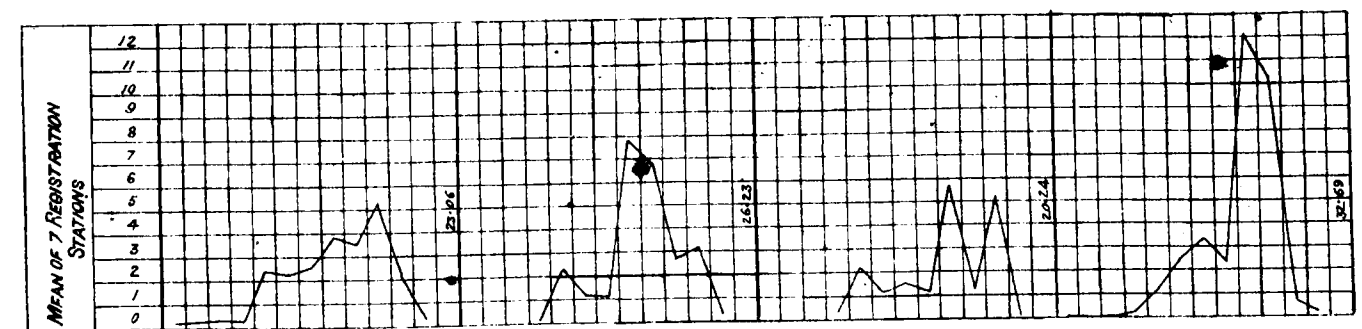
RAINFALL



PRICE OF FOOD (CHOLUM)



ANANTAPUR
RAINFALL

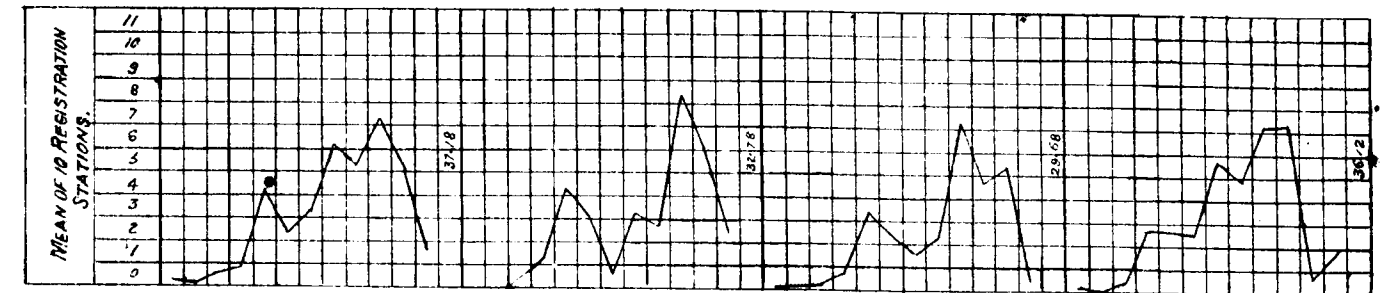


PRICE OF FOOD (CHOLUM)

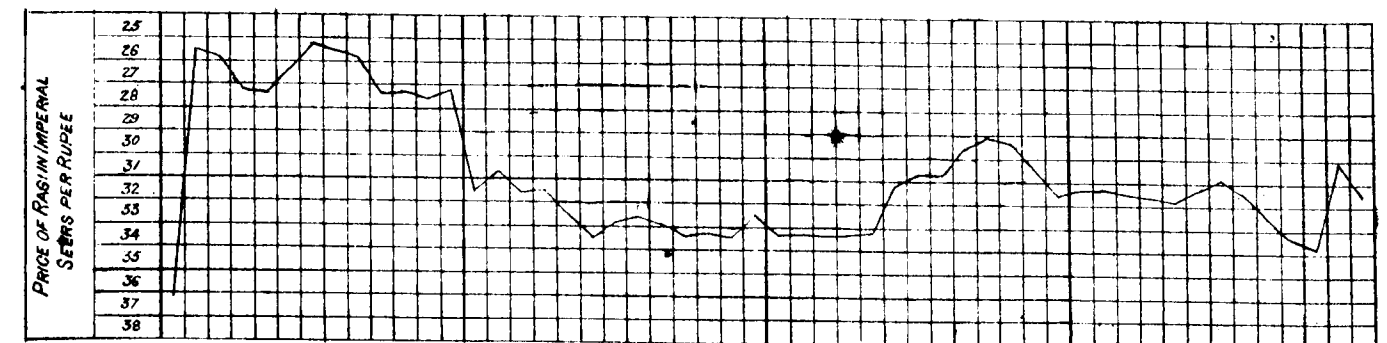


DISTRICTS	YEARS	AVERAGE OF 10 YEARS.												1887												1888												1889											
	MONTHS	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL									

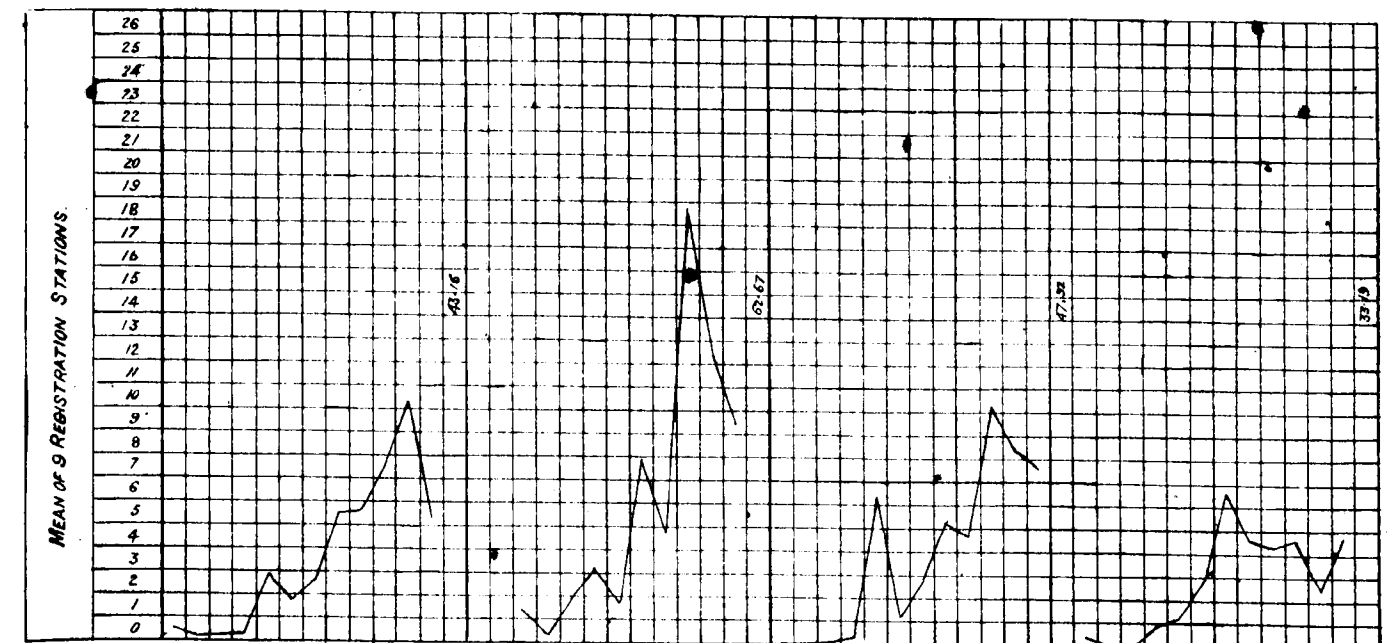
RAINFALL



PRICE OF FOOD (RAGI)



SOUTH ARCOT RAINFALL



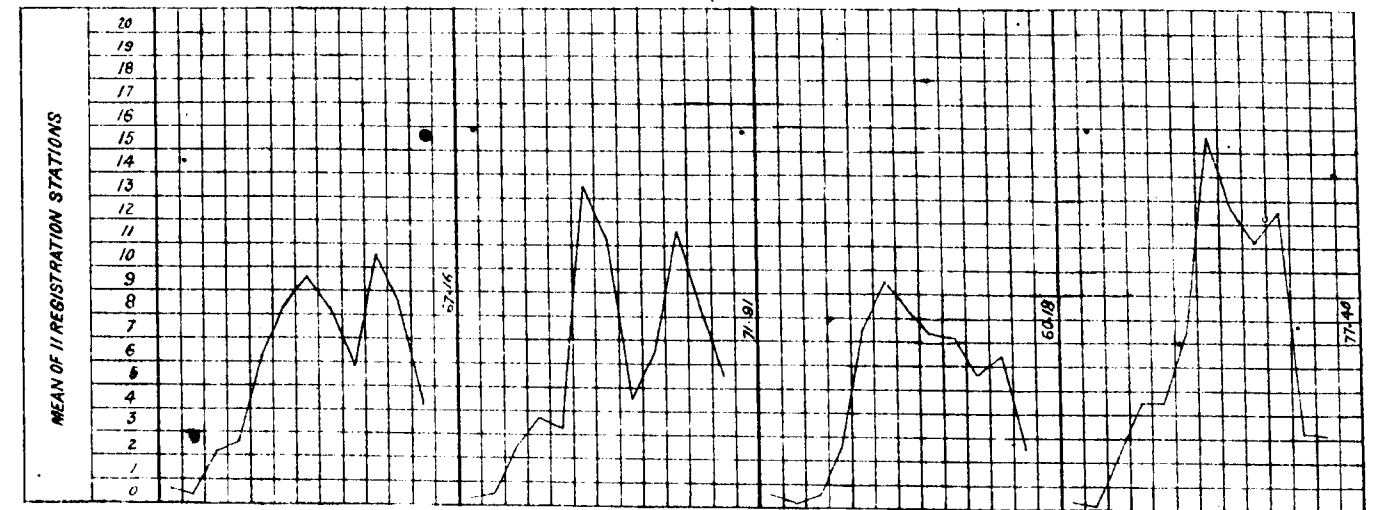
PRICE OF FOOD (CUMBU)



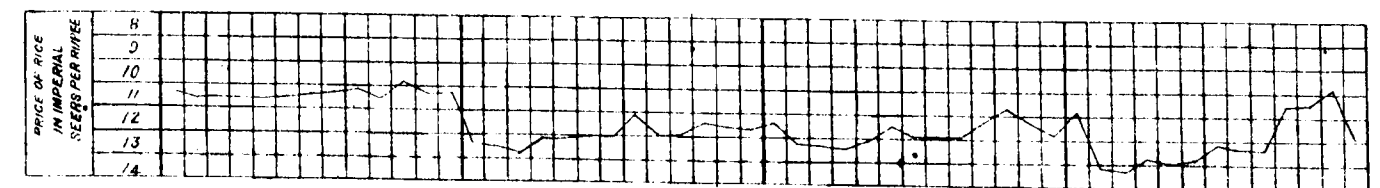
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RICE) IN THE DISTRICT OF NILGIRIS & (CUMBU) IN THE DISTRICT
OF COIMBATORE FOR 3 YEARS ENDING 1889, COMPARED WITH AVERAGE OF 10 YEARS
NILGIRIS

DISTRICTS	YEARS	AVERAGE OF 10 YEARS												1887												1888												1889											
	MONTHS	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL	JAN.	FEB.	MAR.	APR.	MAY.	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.	TOTAL									

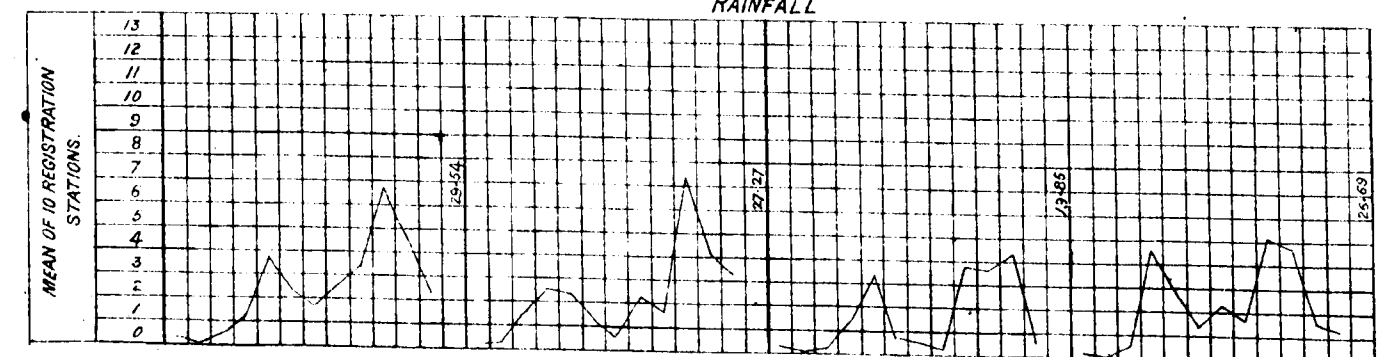
AINFALL



PRICE OF FOOD (RICE)



COIMBATORE
RAINFALL



PRICE OF FOOD (CUMBU)

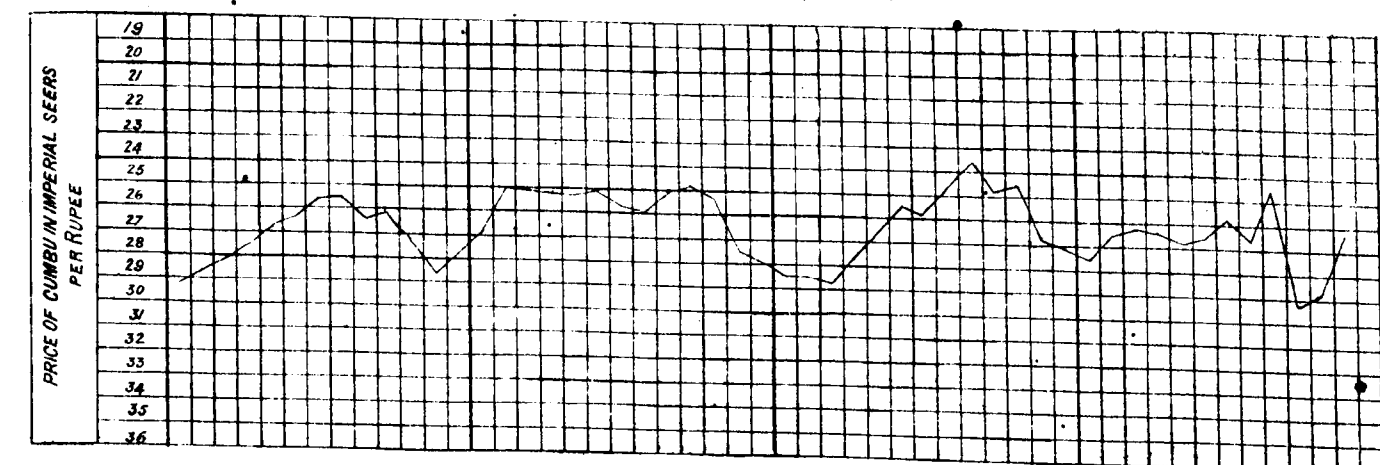


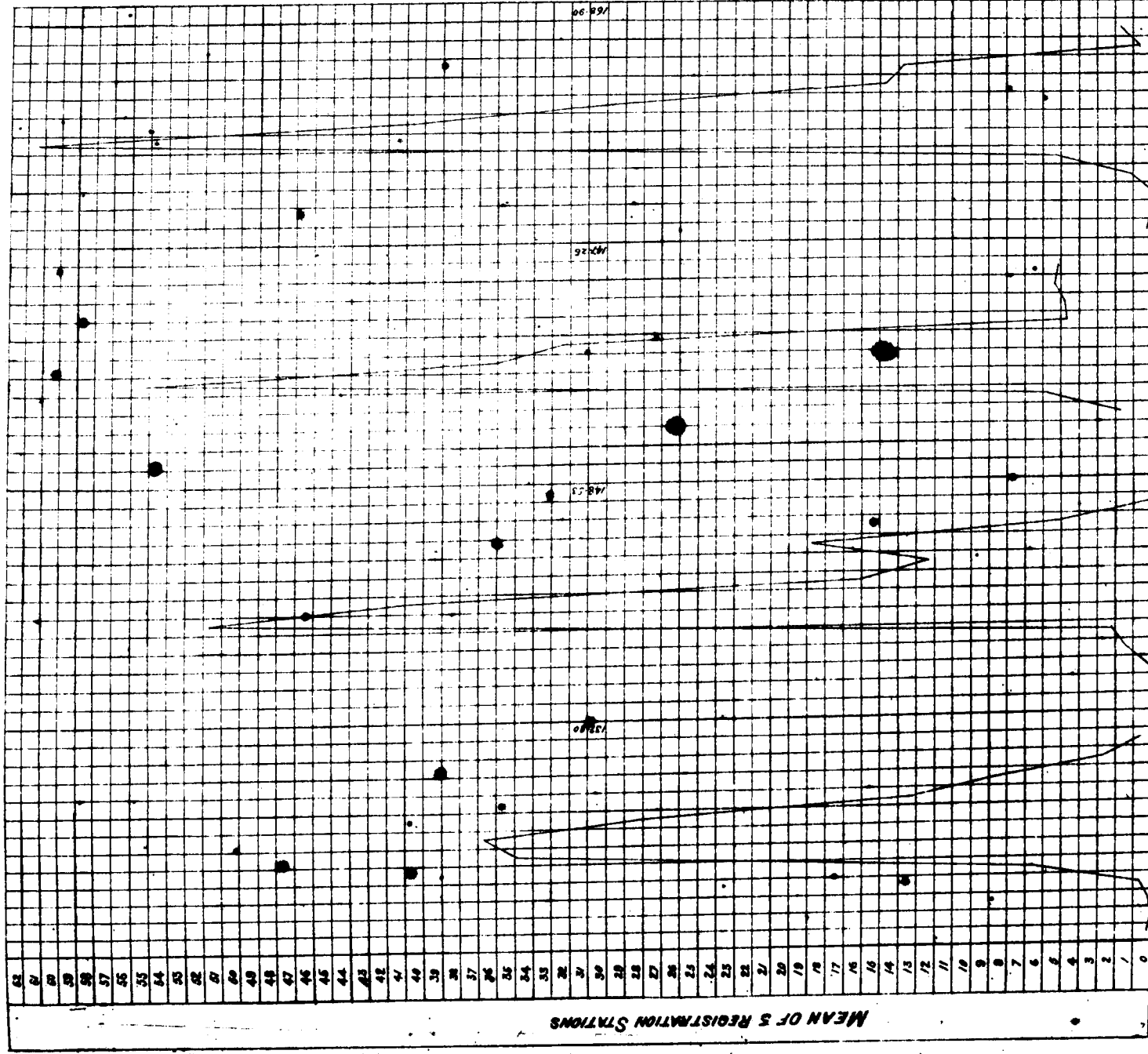
DIAGRAM SHOWING THE RAINFALL & PRICE OF FOOD (RICE) IN THE DISTRICTS OF SOUTH CANARA & MALABAR FOR

3 YEARS ENDING 1889 COMPARED WITH AVERAGE OF 10 YEARS

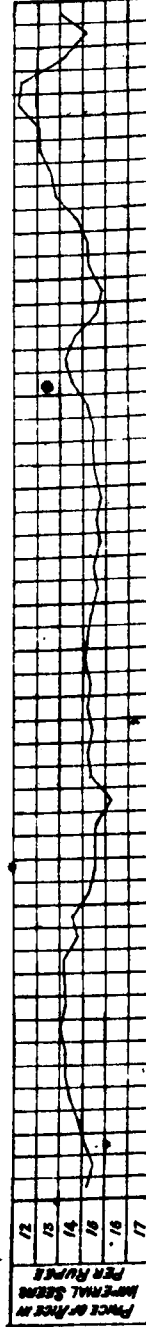
SOUTH CANARA

DISTRICTS	AVERAGE OF 10 YEARS										1889										1888										1887									
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	

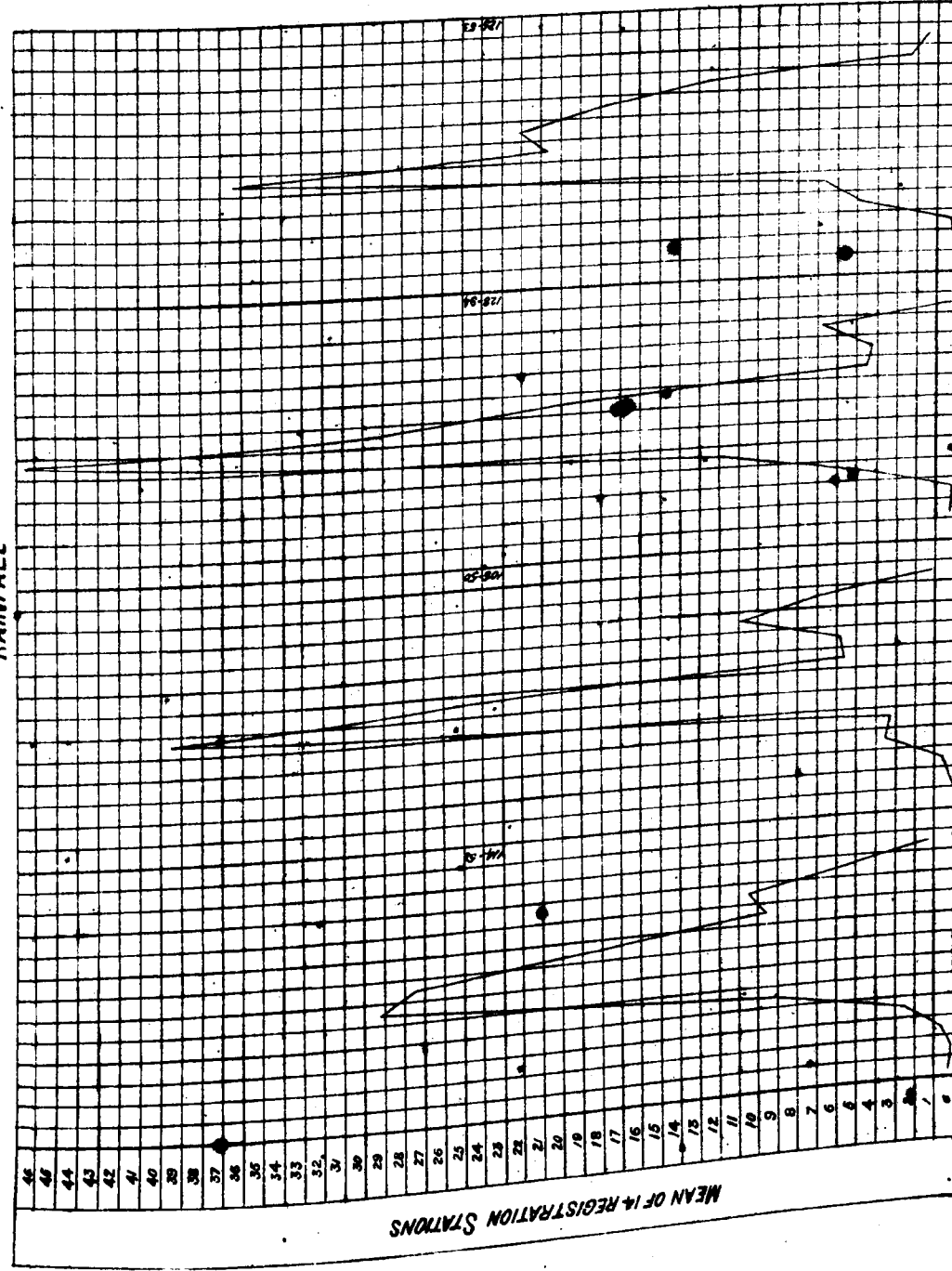
RAINFALL



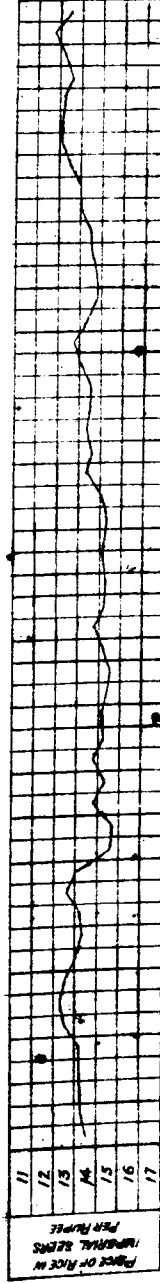
PRICE OF FOOD (RICE)



MALABAR RAINFALL



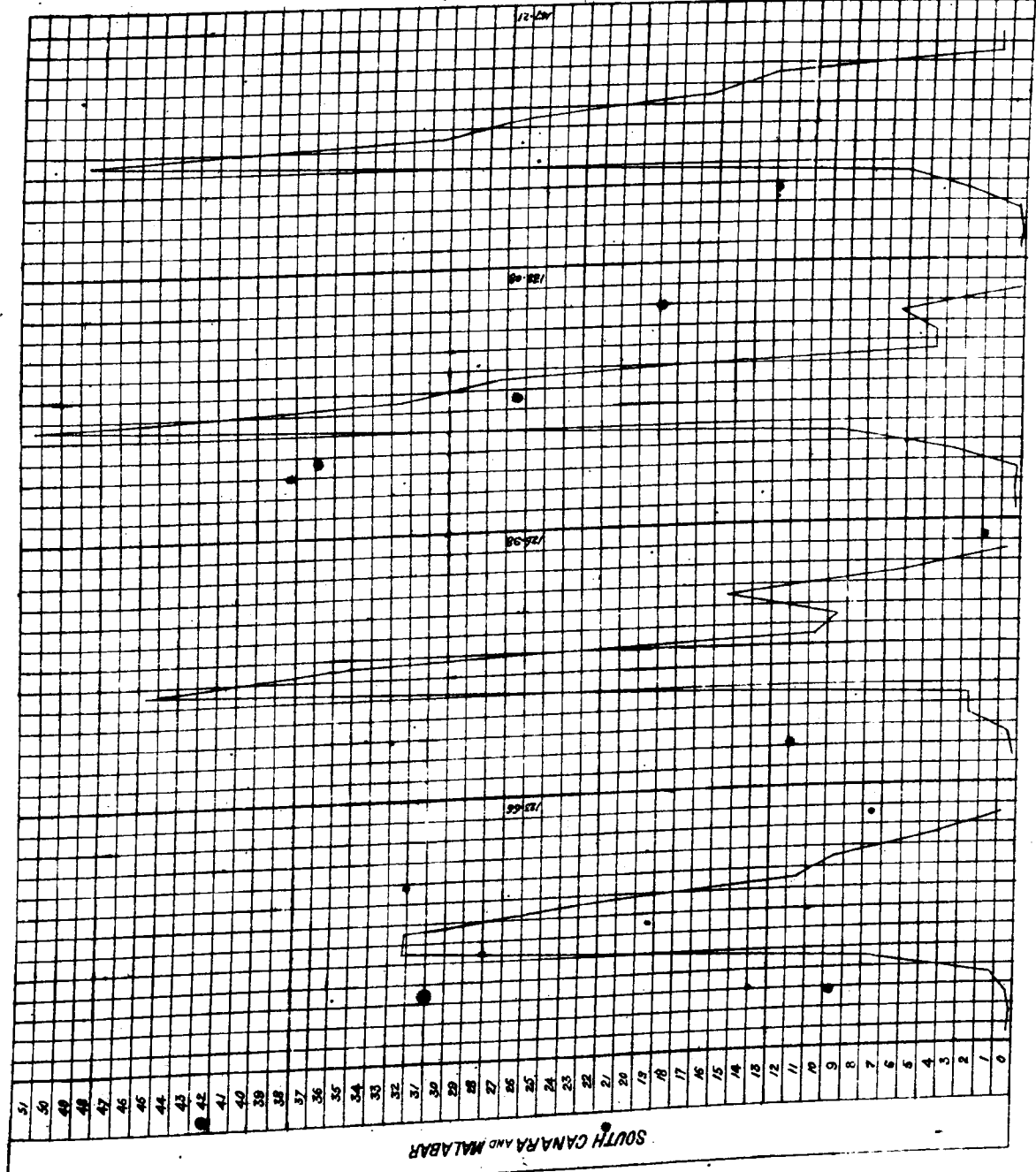
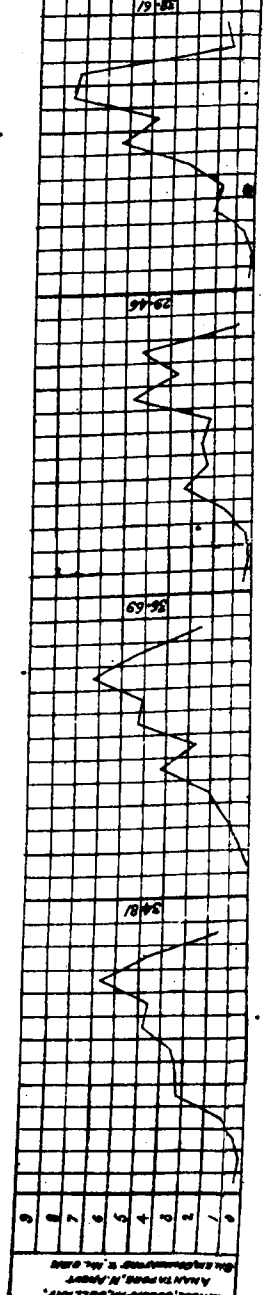
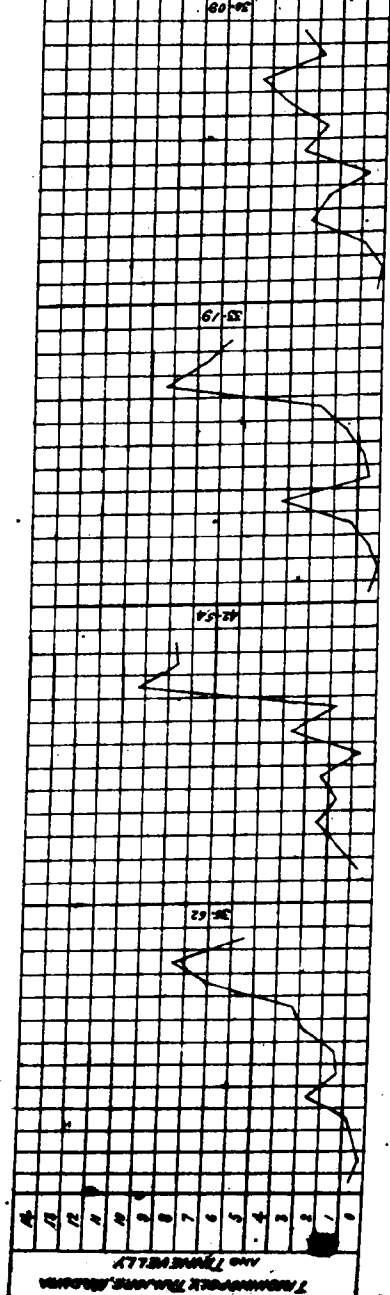
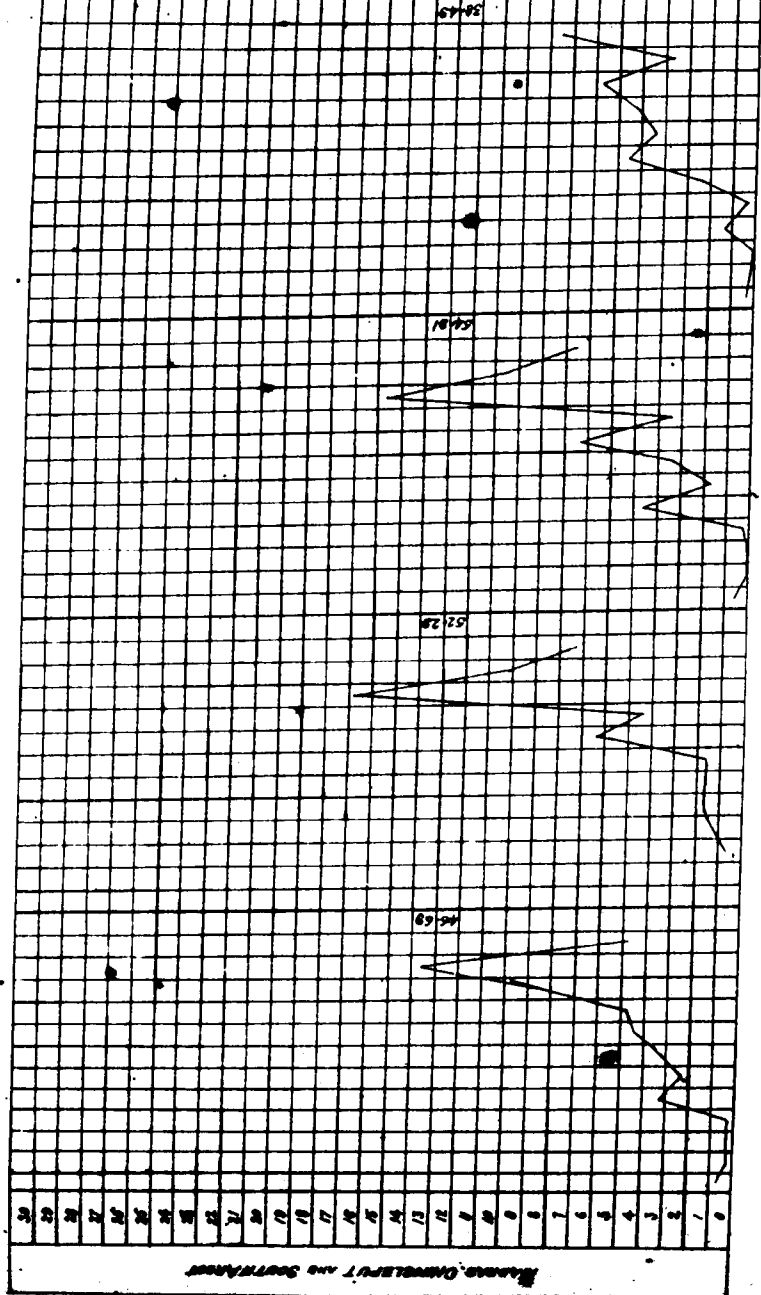
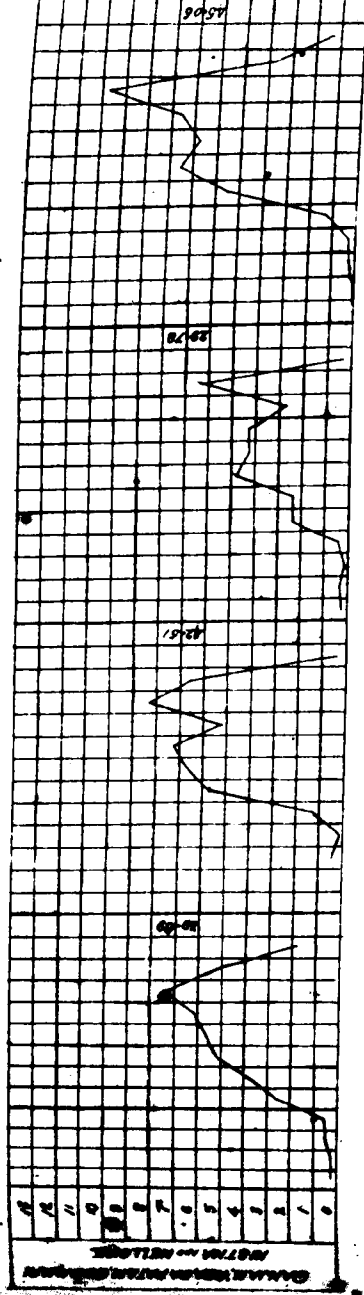
PRICE OF FOOD (RICE)



62

DIAGRAM SHOWING THE RAINFALL IN DIFFERENT GROUPS OF DISTRICTS (NORTHERN, EASTERN, SOUTH, EASTERN, CENTRAL & WESTERN) OF THE MADRAS PRESIDENCY DURING 1889 COMPARED WITH PREVIOUS YEARS

DISTRICTS	AVERAGE OF 10 YEARS												1888												1889												TOTAL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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VITAL STATISTICS OF THE GENERAL POPULATION.

4. The record of births and deaths during the year does not extend to the whole population as ascertained at the census of 1881, viz., 30,535,771; there are certain tracts of zemindary estates, &c., for which no birth and death returns are received. The total population for which returns were furnished in 1889 was 28,050,087, being 2,785,684 short of the total population.

5. The exact population of a country can only be obtained directly by a census; but in this country, as in England, censuses are only carried out at decennial intervals, and so during the inter-censal years we have to be content with estimates. In England the birth and death rates are calculated on the population enumerated in the census of 1881 and every year raised at the rate of increase which prevailed between 1871 and 1881. This method has been found to give trustworthy results, and the assumption that the rate of increase during the period between the last two censuses had been maintained in the succeeding years has been proved to be generally correct. In India, however, this method of calculation cannot be relied on, as we have yet no accurate data to show what the normal increment of the population was in past years, for the census of 1871 was the first that gave the entire population with complete accuracy, and so it cannot be ascertained whether the rate of increase obtained in the interval between the two last censuses is being maintained in the succeeding years. Further, in India, although in ordinary times it might be safe to estimate the annual increment in the population since the date of the last census, yet, if a season like that of 1877 in Madras occurred when there was widespread famine and pestilence over two-thirds of the area of the presidency, it would tend so much to the rapid reduction of population that the estimated increase would probably prove to be entirely fallacious. It has, therefore, been thought better at present to base the ratios of births and deaths on the ascertained figures of 1881 rather than on an estimated increase which the next census of 1891 might probably prove to be wrong.

BIRTHS.

6. The births registered in 1889 (exclusive of Europeans and Eurasians and still births) numbered 867,523 and were in the proportion of 30.9 to 1,000 inhabitants. This is the highest birth-rate recorded in the presidency for the past nineteen years as will be seen from the subjoined table, and it is satisfactory to notice the improvement which has taken place in the registration of births:—

Table showing the Births and Deaths for a series of years and their Ratios per 1,000 of Population.

Years.	Population for which returns were received.	Births.	Birth-ratio per mille.	Deaths.	Death-ratio per mille.
1871	24,555,046	506,707	20.6	444,371	18.0
1872	30,147,779	543,325	18.02	501,482	16.6
1873	30,287,842	527,363	17.4	506,894	16.4
1874	30,360,221	569,631	18.7	516,848	17.0
1875	30,278,903	625,953	20.6	641,260	21.1
1876	29,157,056	619,748	21.2	680,384	23.3
1877	29,209,542	467,543	16.01	1,556,312	53.2
1878	29,127,205	341,388	11.7	810,921	27.8
1879	28,991,267	467,938	16.1	549,390	18.9
1880	28,778,097	641,769	22.3	454,101	15.7
1881	28,676,375	716,672	24.9	465,682	16.2
1882	28,887,111	743,777	25.7	470,700	16.2
1883	28,503,100	774,754	27.2	541,930	19.0
1884	28,151,952	810,102	28.8	650,335	23.1
1885	28,118,178	807,105	28.7	615,449	21.8
1886	28,043,538	837,077	29.8	553,927	19.7
1887	27,907,840	849,551	30.4	604,775	21.6
1888	27,852,474	833,345	29.9	597,015	21.4
1889	28,050,087	867,523	30.9	661,178	23.5

7. The following table shows the birth and death rates in each district of the presidency contrasted with those of 1888 and the mean of ten years:—

No.	Districts.	Ratio of births per mille of population.		Average of birth-ratio for previous 10 years.	Ratio of deaths per mille of population.		Average of death-ratio for previous 10 years.
		1889.	1888.		1889.	1888.	
1	Anantapur	40.7	40.06	30.6	28.3	26.6	20.2
2	Bellary	38.9	39.2	37.6	26.7	26.5	23.4
3	Chingleput	34.5	30.9	24.5	20.3	16.8	15.4
4	Coimbatore	31.4	27.7	25.4	21.7	23.9	19.2
5	Cuddapah	18.1	20.9	22.4	40.9	17.9	17.5
6	Ganjam	22.9	21.0	20.8	24.4	15.2	19.9
7	Godavari	37.2	35.3	29.3	24.7	19.5	20.2
8	Kistna	42.2	37.4	30.6	31.0	31.1	22.8
9	Kurnool	40.4	39.6	40.0	42.6	37.8	38.1
10	Madras	35.9	31.8	27.2	23.2	19.2	18.1
11	Madura	24.4	25.0	22.6	16.2	19.7	18.4
12	Malabar	27.5	25.9	21.9	15.6	16.8	13.5
13	Nellore	20.1	19.1	16.2	16.0	16.3	16.0
14	Nilgiris	31.3	30.4	25.7	20.9	21.2	17.6
15	North Arcot	37.4	40.3	29.0	22.4	22.1	17.0
16	Salem	30.5	30.5	25.5	25.0	21.8	18.9
17	South Arcot	31.9	32.2	27.5	20.9	25.3	21.8
18	South Canara	27.5	27.5	28.9	23.7	25.8	24.2
19	Tanjore	29.6	27.3	27.1	22.0	23.2	21.7
20	Tinnevely	33.6	29.5	28.4	22.3	24.8	20.9
21	Trichinopoly	22.0	21.5	20.0	25.7	12.5	15.3
22	Vizagapatam						
Total, Madras Presidency		30.9	29.9	26.8	23.5	21.4	19.4

From the above table it will be seen that in only five districts (Chingleput, Ganjam, Malabar, Salem and South Canara) were the birth-rates lower than those in 1888, in two (South Arcot and Tanjore) they were the same, while in the remaining fourteen districts they were higher. The increase was most marked in the districts of Kurnool, Madura and Trichinopoly, and the decrease in Salem and Ganjam. The highest birth-rates registered were 42.2 per mille in Kurnool, 40.7 in Bellary-Anantapur, 40.4 in Madras and 38.9 in Chingleput. The birth-rate was lowest in Ganjam (18.1); (excluding the Nilgiris) Vizagapatam comes next to it (22.0) and then Godavari (22.9). These three districts have for some years always returned the lowest birth-rates. The birth-rates in Vizagapatam and Godavari, although still far from satisfactory, yet show an improvement when compared with the ratios of the previous year. The decrease in the birth-rate for Ganjam is for the most part to be ascribed to the effects of the distress which prevailed in the district. Indeed a lessened birth-rate must always be a necessary consequence of famine, for, not only are the women at the child-bearing periods of life lessened in number by death and emigration from the affected districts, but the debility caused by protracted privation reduces the chance of their becoming mothers.

In three districts (Kurnool, Madras and Bellary-Anantapur) only was the birth-rate above 40 per mille, which may be taken as the standard, in ten it was over 30 and under 40, and in the remaining eight districts it was under 30 per mille.

8. Of the 867,523 births registered in 1889, there were 442,712 males and 424,811 females, or in a proportion of 104.2 males to every 100 female births, the corresponding percentage in 1888 being almost exactly the same.

9. In table XI of the appendix the birth-rates among the various sections of the population in each district are given. The Hindus returned the highest birth-rate, viz., 31.2 per 1,000 of population, the Muhammadans next (28.4) and then Native Christians (24.6).

10. The subjoined table shows the birth-rates according to the months of the year compared with 1888 and the monthly mean of the previous ten years:—

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Mean of 10 years ...	1.8	1.7	1.9	1.9	2.1	2.2	2.6	2.5	2.5	2.5	2.4	2.3	26.8
1888 ...	2.1	1.9	2.3	2.2	2.5	2.6	2.9	2.7	2.7	2.7	2.6	2.5	29.9
1889 ...	2.2	1.9	2.2	2.3	2.6	2.6	2.9	2.8	2.7	2.9	2.7	2.6	30.9

11. The greatest number of births registered in 1889 were in the months of July and October and the fewest in February. In this presidency July is the month in which the largest number of births are usually registered and February the fewest.

12. Taking the presidency as a whole, there were 206,345 more births than deaths registered; the birth-rate being 7.4 per 1,000 higher than the death-rate. In all the districts, with the exception of four (Ganjam, Vizagapatam, Madras and Godavari), the births exceeded the deaths.

13. The birth-rates per 1,000 of population among the rural and urban populations in each district during 1889 and 1888 are given in the subjoined table:—

No.	Districts.		Ratio of births per 1,000 of population.		Ratio of deaths per 1,000 of population.		No.
			1889.	1888.	1889.	1888.	
1 & 2	Anantapur and Bellary	Urban ...	38.3	30.1	33.6	36.7	1 & 2
		Rural ...	40.9	40.8	27.9	25.8	
3	Chingleput	Urban ...	23.6	22.4	26.9	29.2	3
		Rural ...	39.8	40.2	26.7	26.2	
4	Coimbatore	Urban ...	42.9	41.7	29.7	27.8	4
		Rural ...	34.2	30.5	20.0	16.5	
5	Cuddapah	Urban ...	27.0	19.6	30.4	31.7	5
		Rural ...	21.4	27.8	21.5	23.7	
6	Ganjam	Urban ...	25.5	22.8	42.9	31.3	6
		Rural ...	17.6	20.9	40.8	17.0	
7	Godavari	Urban ...	23.1	23.8	31.9	19.1	7
		Rural ...	22.9	20.7	23.9	14.9	
8	Kistna	Urban ...	32.4	27.9	29.3	20.1	8
		Rural ...	37.4	35.9	24.5	19.5	
9	Kurnool	Urban ...	33.8	33.2	36.9	37.8	9
		Rural ...	42.4	37.6	30.8	30.8	
10	Madura	Urban ...	36.9	37.1	29.5	28.2	10
		Rural ...	35.0	31.3	22.6	18.3	
11	Malabar	Urban ...	31.2	31.2	24.0	35.3	11
		Rural ...	23.8	24.5	15.6	18.4	
12	Nellore	Urban ...	31.4	30.1	22.4	23.5	12
		Rural ...	27.4	25.8	15.3	16.6	
13	Nilgiris	Urban ...	26.1	26.3	21.1	20.7	13
		Rural ...	18.3	16.7	14.3	14.5	
14	North Arcot	Urban ...	23.5	26.4	23.1	28.6	14
		Rural ...	31.8	30.6	20.8	20.8	
15	Salem	Urban ...	36.6	31.0	28.2	26.8	15
		Rural ...	37.4	40.9	22.0	21.7	
16	South Arcot	Urban ...	19.5	22.3	22.1	23.0	16
		Rural ...	31.0	30.8	25.1	21.8	
17	South Canara	Urban ...	39.3	36.9	29.7	46.9	17
		Rural ...	31.6	32.0	20.6	24.7	
18	Tanjore	Urban ...	23.0	23.6	28.4	30.2	18
		Rural ...	27.9	27.8	23.2	25.3	
19	Tinnevely	Urban ...	27.4	24.6	24.3	23.5	19
		Rural ...	29.8	27.6	21.7	23.2	
20	Trichinopoly	Urban ...	20.1	18.0	21.4	29.5	20
		Rural ...	34.9	30.6	22.5	24.4	
21	Vizagapatam	Urban ...	25.4	27.0	37.1	21.2	21
		Rural ...	21.8	21.0	24.9	11.7	
Total		Urban ...	28.5	27.0	28.0	27.9	
		Rural ...	30.9	29.8	22.9	20.7	

14. The rural birth-rate for the presidency was as usual higher than the urban, the ratios per 1,000 of population being 30.9 and 28.5 respectively. This result may in some measure be due to births obtaining more local notoriety in villages than in towns of considerable size. In eleven districts (Bellary-Anantapur, Chingleput, Cuddapah, Kistna, Kurnool, North Arcot, Salem, South Arcot, Tanjore, Tinnevely and Trichinopoly) the birth-rates were higher in rural than in urban populations, the difference being most marked in Chingleput, Trichinopoly and South Arcot.

15. In the table on page 14 is given the birth-rates per 1,000 of population of the fifty-five municipal towns in the presidency exclusive of Madras. In eight towns only (Dindigul, Bezvada, Adoni, Anantapur, Erode, Karur, Coimbatore and Salem) was the birth-rate above 40 per mille, the assumed standard. In twenty-seven towns the birth-rates ranged from 10.8 to 29.7 per 1,000 of population, and in these towns the figures are undoubtedly below the actual birth-rates and point to the necessity of greater attention being paid to birth registration. If some municipalities can return approximately correct results of birth registration, there is no reason, if attention is given to this important subject, why other municipalities cannot do the same. In twenty-three towns (Bezvada, Tuticorin, Bellary, Kurnool, Vizianagrum, Berhampore, Rajahmundry, Guntur, Tinnevely, Cuddapah, Mayavaram, Kumbakonam, Vizagapatam, Cocanada, Ellore, Chicacole, Parlakimedi, Tanjore, Chidambaram, Negapatam, Trichinopoly, Cuddalore and Tirupati) the birth-rate was lower than the death-rate.

DEATHS.

16. During 1889 there were 661,178 deaths (exclusive of Europeans and Eurasians and born dead) registered in the Madras Presidency, corresponding to an annual rate of 23.5 per mille of the population. This death-rate exceeded by 2.1, the rate for 1888, and was 2.0 above the average rate for the five years 1884-1888. The increase in the death-rate for 1889 is due to the exceptional amount of mortality registered in certain parts of the presidency.

17. The following table shows in abstract form the means of comparing the mortality under the principal causes of death during 1889 with the result of twenty-one previous years:—

Years.	Total deaths.	Cholera.	Small-pox.	Fevers.	Bowel-complaints.	Injuries.	Other causes.	Years.
1868	390,956	8,036	34,330	105,692	...	9,242	233,659	1868
1869	451,981	21,034	17,448	132,346	...	9,310	271,843	1869
1870	451,020	55,867	11,252	151,027	...	12,325	220,549	1870
1871	444,371	17,656	20,828	192,469	88,928	15,323	159,173	1871
1872	501,482	13,247	39,074	214,148	39,387	15,150	180,476	1872
1873	506,894	840	51,784	222,843	36,392	14,251	180,784	1873
1874	516,848	313	48,343	226,220	37,993	13,065	190,914	1874
1875	641,260	94,546	24,775	252,042	37,484	12,421	219,992	1875
1876	680,384	148,193	23,469	230,092	38,176	11,175	229,279	1876
1877	1,556,312	357,430	88,321	469,241	133,366	16,460	491,434	1877
1878	810,921	47,167	56,360	374,443	48,083	15,007	266,861	1878
1879	549,390	13,296	17,840	285,477	23,218	12,619	196,940	1879
1880	454,101	618	14,529	209,940	19,622	10,845	198,552	1880
1881	465,682	9,446	15,776	203,542	18,961	11,527	206,430	1881
1882	470,700	23,604	20,159	188,561	19,958	11,611	206,807	1882
1883	641,930	36,284	37,975	203,786	22,098	11,509	230,278	1883
1884	650,335	75,476	61,247	215,977	28,775	11,502	257,358	1884
1885	615,449	58,109	64,726	218,786	31,209	11,659	260,960	1885
1886	553,927	12,417	17,129	221,679	27,379	13,108	262,220	1886
1887	604,775	28,359	21,472	240,860	26,679	11,828	276,077	1887
1888	597,015	58,677	21,858	204,561	27,721	11,401	272,797	1888
1889	661,178	76,020	29,138	230,172	29,122	11,506	285,220	1889

18. Under every one of the four great classified causes of death, as well as under unspecified causes, there has been an increase in the registered mortality. As the classification of the causes of death in this country is still very imperfect, having to depend on unprofessional opinion for the facts, the registration of the

actual "causes of death" must be to a great extent incorrect. Thus in the Ganjam district, where there has been more difficulty this year than usual in the classification, the deaths registered from cholera alone were 12,902, being at the rate of 14.0 per 1,000 of population, and as it is not always easy to diagnose deaths from cholera from the last stages of famine diseases, there can be no doubt that many of the deaths registered as from cholera were in reality deaths from chronic starvation.

19. The 661,178 deaths included 341,867 of males and 319,311 of females. The annual death-rate per 1,000 was 24.6 for males and 22.5 for females. In accordance with the experience of former years, the male is in excess of the female death-rate. The excess of male over female deaths was most marked in Ganjam, where distress prevailed, the rate per 1,000 being 45.6 for males and 36.4 for females. The statistical evidence of the famine relief camps of 1877 showed that mortality resulting from distress was much more marked in men than in women. In the whole presidency for every 100 females who died, 107 deaths among males were registered.

20. The following table shows the total deaths in 1889 under different ages :—

No.	Ages.	Deaths.	Ratio per 1,000 of population.	Percentage on total deaths.
1	Under 1 year	138,680	154.3	20.9
2	1 year and under 5 years ...	96,593	33.5	14.6
3	5 years and under 10 years ...	42,053	10.2	6.3
4	10 years and under 15 years ...	26,617	7.2	4.0
5	15 years and under 20 years ...	33,047	13.2	4.9
6	20 years and under 30 years ...	64,459	12.4	9.7
7	30 years and under 40 years ...	61,617	14.1	9.3
8	40 years and under 50 years ...	54,186	18.7	8.2
9	50 years and under 60 years ...	54,521	30.2	8.3
10	60 years and upwards	89,405	55.5	13.5
	Total ...	661,178	23.3	...

From this table it will be seen that as usual the mortality among infants under one year of age is high; the average death-rate among infants under one year of age calculated on the number given in the census of 1881 was 154.3 per 1,000 of population. The mortality amongst children under five years of age is very high in comparison with other periods of life. In fact the deaths in children under five years of age formed 35.5 per cent. of the total deaths. It cannot be too distinctly recognised that a high rate of infant mortality is a proof of the insanitary condition of most of the towns and villages in the presidency. The period of greatest immunity was, as in 1888, in the age of above 10 and under 15 years, the rate being 7.2 per 1,000. For those above 60 and upwards the mortality was at the rate of 55.5 per 1,000.

21. The total deaths by sexes according to age are given in form IV in the appendix. As usual this statement shows that females have a better chance of life than males from infancy up to 15 years of age, and also from 30 years and upwards. Between the ages of 15 and 30 the death-rate amongst males is less than that of females.

22. The deaths according to classes are given in form V in the appendix. The deaths registered amongst Hindus were in the proportion of 24.0 per mille, of Muhammadans 19.9 per mille, of Native Christians 16.7 per mille and of Other Classes 15.6 per mille. In ten districts (Chingleput, Coimbatore, Cuddapah, Kurnool, Madura, Nellore, Nilgiris, Salem, Tanjore and Tinnevely) no deaths were recorded among "other classes."

23. In statement III in the appendix the deaths in each month of the year are given, and in the subjoined table the death-rates during each month in 1889 are contrasted with the death-rates in 1888 and the mean for ten years :—

Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Mean of 10 years	2.1	1.5	1.5	1.3	1.3	1.4	1.6	1.6	1.5	1.5	1.6	2.1	19.4
1888	2.6	1.8	1.7	1.5	1.5	1.6	1.7	1.7	1.6	1.6	1.7	2.2	21.4
1889	2.3	1.7	1.7	1.7	1.9	2.0	2.3	2.1	1.8	1.8	1.8	2.2	23.5

During 1889 the largest number of deaths (65,759) took place in January and the least (47,406) in February. The most unhealthy months were January, July and December and the most healthy February, March and April. Usually the most unhealthy months are December and January and the most healthy April and May. A sudden rise in the death-rate usually occurs in December, and this was also the case in 1889.

24. The death-rates in each district in 1889 are given on page 9. As has been the case for some years, the mortality in Madras was higher than in any other district in the presidency, being at the rate of 42.6 per 1,000 of population. The lowest death-rate (15.6) occurred in Nellore. In eleven districts (Madras, Ganjam, Bellary-Anantapur, Chingleput, Vizagapatam, South Arcot, Kistna, Godavari, Madura, Salem and Coimbatore) the death-rates per 1,000 of population were higher in 1889 than in 1888, but in the others they were lower. The largest increase in mortality took place in Ganjam. For 1888 the death-rate per 1,000 of population of this district was 17.9, but for 1889 it was 40.9. The cause of this large increase in the death-rate for 1889 was owing to the effects of the famine which prevailed in the district. Famine must inevitably be accompanied by a largely increased mortality; and, considering the difficulties that had to be met in the district in affording aid to a people difficult at all times to manage, a people trammelled with caste prejudices, and who became dispirited, hopeless and apathetic, who had no other resource for self aid but a blind fatalism, it is a matter of surprise that the mortality was not even yet still higher. It must have been infinitely greater if the Government had not organised a system of aid which was most thoroughly calculated to bring relief to all who sought for it. The increased mortality in the districts of Vizagapatam and Godavari was due to an increase of deaths under all heads, but chiefly under cholera and fevers. The greatest decrease in the death-rate took place in South Canara, where the deaths under all the principal causes were much less than those specified in the preceding year, especially those from cholera and small-pox.

25. The death-rates per 1,000 of population among the urban and rural populations in each district of the presidency during 1889, as compared with 1888, are given on page 10. The death-rates among the urban and rural populations were, respectively, 28.0 and 22.9 against 27.9 and 20.7 in 1888. In all the districts, with the exception of Trichinopoly and South Arcot, the urban death-rate was higher than the rural. The death-rate of the urban population being higher than that of the rural population, shows how much has still to be done for the sanitation of our large towns, and another important conclusion to be drawn from these figures is that improved sanitation is much more urgently required in the towns than in the country.

26. In the following table is given the deaths registered in the fifty-five municipal towns and in the districts, exclusive of municipal towns, proportionally considered with the population :—

Table showing the Birth and Death Rates of Districts and Towns arranged in order of sequence.

Districts (exclusive of Municipal Towns).						Municipalities.					
Birth-rate.			Death-rate.			Birth-rate.			Death-rate.		
No.	Districts.	Ratio per mille.	No.	Districts.	Ratio per mille.	No.	Municipalities.	Ratio per mille.	No.	Municipalities.	Ratio per mille.
1	Kurnool	42.4	1	Madras	42.6	1	Dindigul	54.0	1	Bezvada	57.8
2	Anantapur	40.8	2	Ganjam	40.8	2	Bezvada	51.7	2	Berhampore	52.7
3	Bellary	40.4	3	Kurnool	30.8	3	Adoni	46.7	3	Vizianagrum	42.2
4	Madras	40.4	4	Anantapur	27.8	4	Anantapur	46.6	4	Tuticorin	40.4
5	Chingleput	39.0	5	Bellary	26.4	5	Erode	44.6	5	Bellary	40.0
6	Kistna	37.4	6	Chingleput	25.6	6	Karur	43.9	6	Vizagapatam	39.6
7	Salem	37.3	7	Vizagapatam.	25.2	7	Coimbatore	42.3	7	Rajahmundry	38.7
8	Madura	35.0	8	South Arcot	24.5	8	Salem	40.6	8	Parlakimedi	37.1
9	Trichinopoly	34.9	9	Kistna	23.9	9	Wajalápet	39.6	9	Kurnool	36.9
10	Coimbatore	34.2	10	Godávari	23.2	10	Mangalore	39.3	10	Tirupatúr	36.0
11	South Canara.	31.6	11	Tanjore	22.6	11	Ongole	38.6	11	Chicacole	35.3
12	Cuddapah	31.5	12	Madura	22.6	12	Calicut	37.8	12	Kumbakonam	34.7
13	North Arcot	31.5	13	Trichinopoly	22.5	13	Tuticorin	36.7	13	Conjeevaram	34.5
14	South Arcot	31.0	14	Salem	21.8	14	Vaniyambádi	36.5	14	Tinnevely	34.5
15	Tinnevely	29.5	15	Cuddapah	21.6	15	Tirupatúr	36.4	15	Vaniyambádi	33.7
16	Tanjore	27.9	16	Tinnevely	21.6	16	Bellary	36.1	16	Wajalápet	33.6
17	Nellore	27.4	17	North Arcot	20.7	17	Palghat	36.1	17	Anantapur	33.2
18	Malabar	23.7	18	Coimbatore	20.6	18	Conjeevaram	36.0	18	Srirangam	31.7
19	Godávari	22.8	19	South Canara.	20.6	19	Periyakulam	35.7	19	Ellore	31.5
20	Vizagapatam.	22.0	20	Malabar	15.6	20	Madura	34.8	20	Guntúr	31.4
21	Nilgiris	18.7	21	Nellore	15.5	21	Anakápallo	34.4	21	Anakápallo	31.3
22	Ganjam	17.6	22	Nilgiris	14.8	22	Kurnool	33.8	22	Madura	31.1
						23	Cochin	33.8	23	Cochin	31.0
						24	Bimlipatam	33.5	24	Cuddapah	30.4
						25	Vizianagrum	33.0	25	Cocanada	30.3
						26	Palni	32.5	26	Coimbatore	30.1
						27	Srirangam	32.1	27	Erode	30.0
						28	Palamcottah	30.7	28	Bimlipatam	29.9
						29	Berhampore	29.7	29	Mangalore	29.7
						30	Rajahmundry	29.2	30	Máyavaram	29.7
						31	Nellore	29.1	31	Calicut	28.8
						32	Masulipatam	28.7	32	Salem	28.6
						33	Vellore	28.6	33	Dindigul	28.4
						34	Mannárgudi	28.4	34	Chidambaram	28.0
						35	Guntúr	28.2	35	Karúr	27.7
						36	Coonoor	28.2	36	Palghat	27.4
						37	Tellicherry	28.1	37	Vellore	26.6
						38	Gudiyátam	27.6	38	Palni	26.2
						39	Tinnevely	27.4	39	Negapatam	26.2
						40	Cuddapah	27.0	40	Mannárgudi	26.2
						41	Máyavaram	25.7	41	Periyakulam	25.8
						42	Kumbakonam	25.6	42	Coonoor	25.5
						43	Vizagapatam	25.4	43	Tanjore	24.9
						44	Ootacamund	25.3	44	Palamcottah	24.1
						45	Cocanada	24.8	45	Ongole	24.0
						46	Ellore	23.9	46	Adóni	23.7
						47	Chicacole	23.6	47	Gudiyátam	22.7
						48	Parlakimedi	21.6	48	Nellore	21.9
						49	Tanjore	21.6	49	Masulipatam	20.0
						50	Cannanore	20.1	50	Ootacamund	19.3
						51	Chidambaram	19.8	51	Tellicherry	19.2
						52	Negapatam	19.1	52	Trichinopoly	19.0
						53	Trichinopoly	17.4	53	Tirupati	17.8
						54	Cuddalore	16.5	54	Cuddalore	16.8
						55	Tirupati	10.8	55	Cannanore	15.0
Total		30.9	Total		23.3	Total		30.2	Total		29.3

The average death-rate of the fifty-five municipal towns was 29.3 per 1,000 or 6.0 higher than the district rate. In twenty-seven municipalities the death-rate ranged from 30 to over 50 per 1,000, in twenty-two from 20 to 30 and in six the death-rate was below 20 per 1,000. The low death-rate in the last six towns is certainly due to defective registration. At present the position of any municipality on the list is very largely determined by the interest taken in registration by the council.

DIAGRAM SHOWING THE BIRTH AND DEATH RATES PER MILLE PER ANNUM IN THE UNDERMENTIONED DISTRICTS

DURING THE YEAR 1889 COMPARED WITH PREVIOUS YEARS

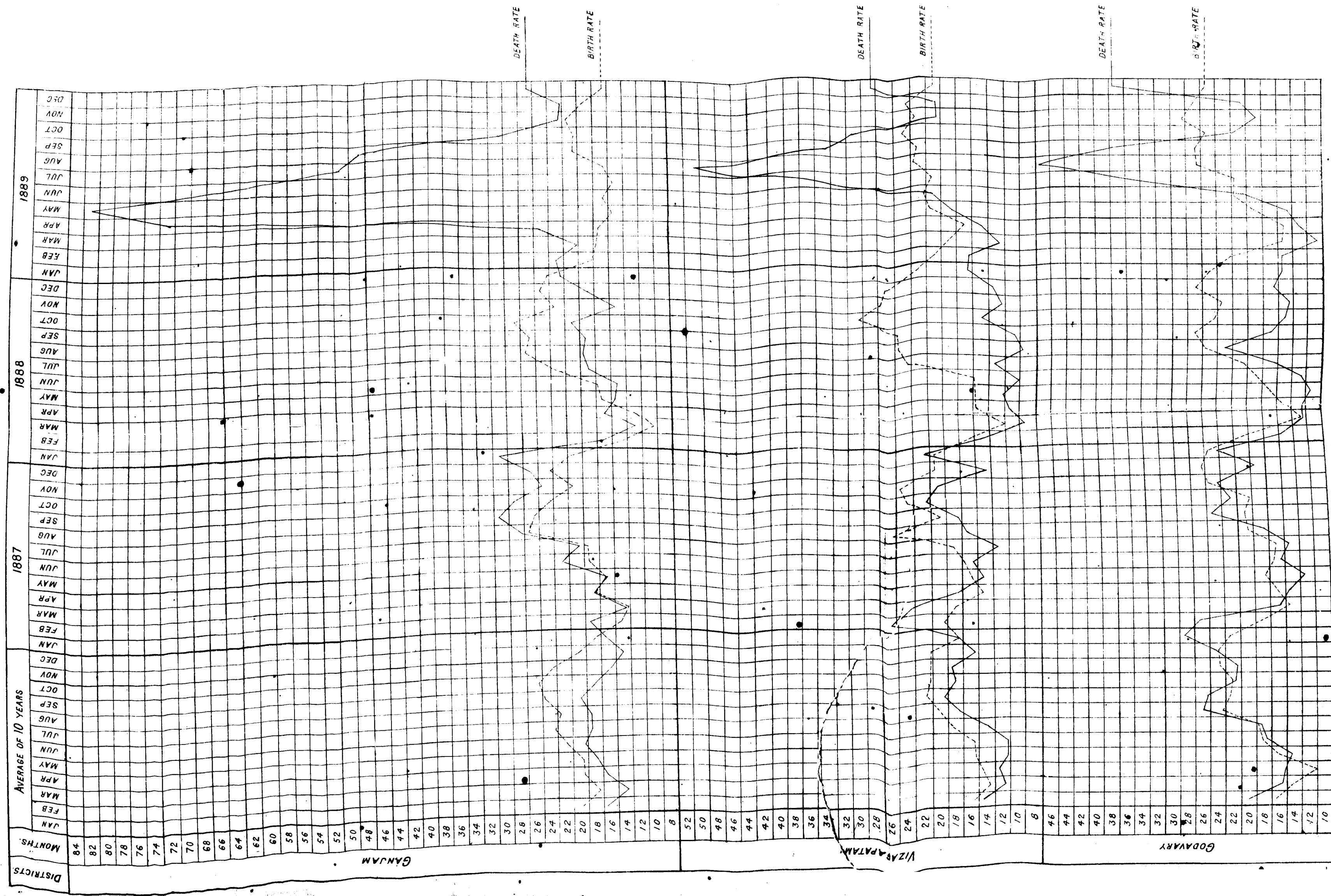
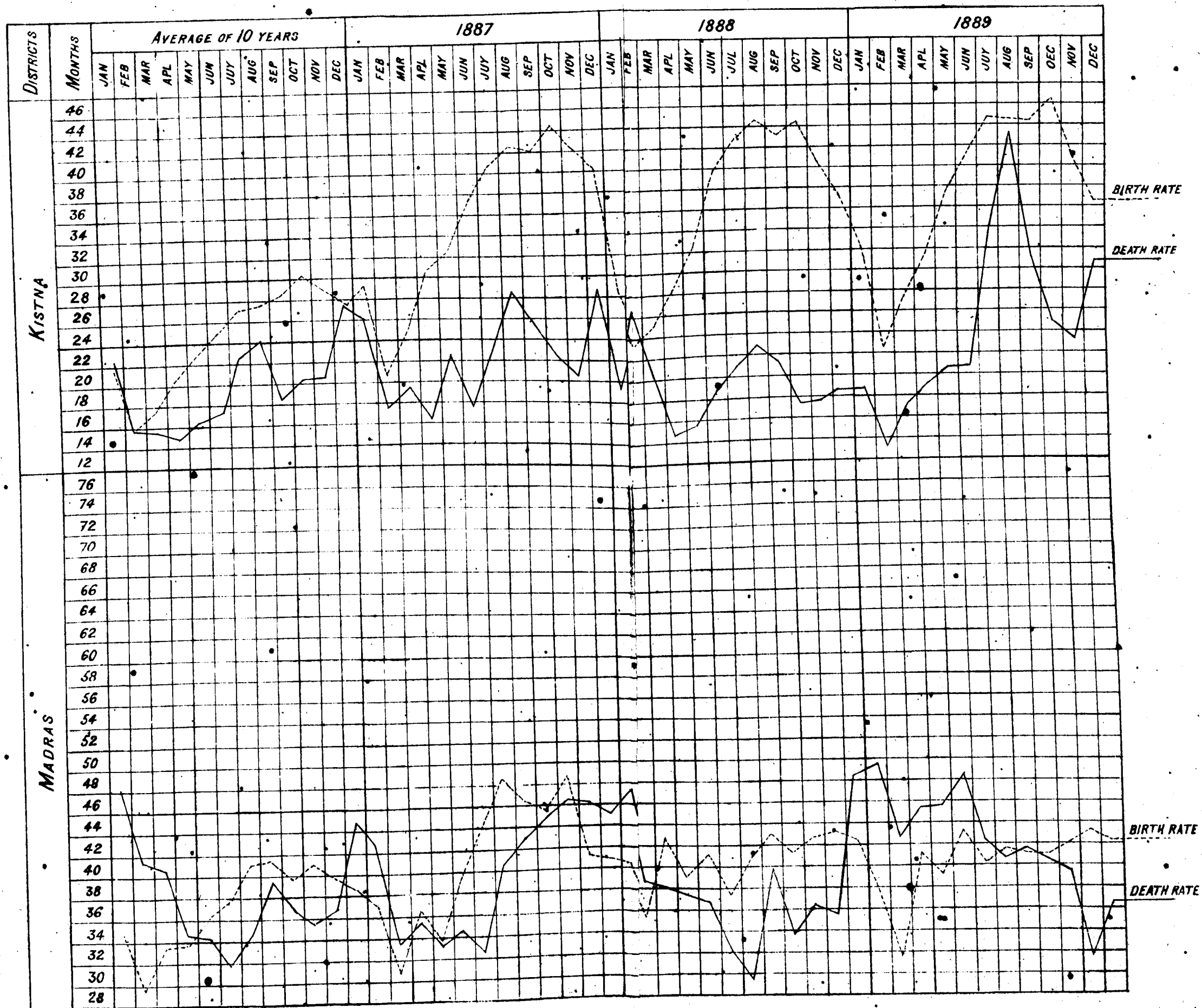


DIAGRAM SHOWING THE BIRTH AND DEATH RATES PER MILE PER ANNUM IN THE UNDERMENTIONED DISTRICTS
DURING THE YEAR 1889 COMPARED WITH PREVIOUS YEARS.



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**DIAGRAM SHOWING THE BIRTH AND DEATH RATES PER MILLE PER ANNUM IN THE UNDERMENTIONED DISTRICTS
 DURING THE YEAR 1889 COMPARED WITH PREVIOUS YEARS.**

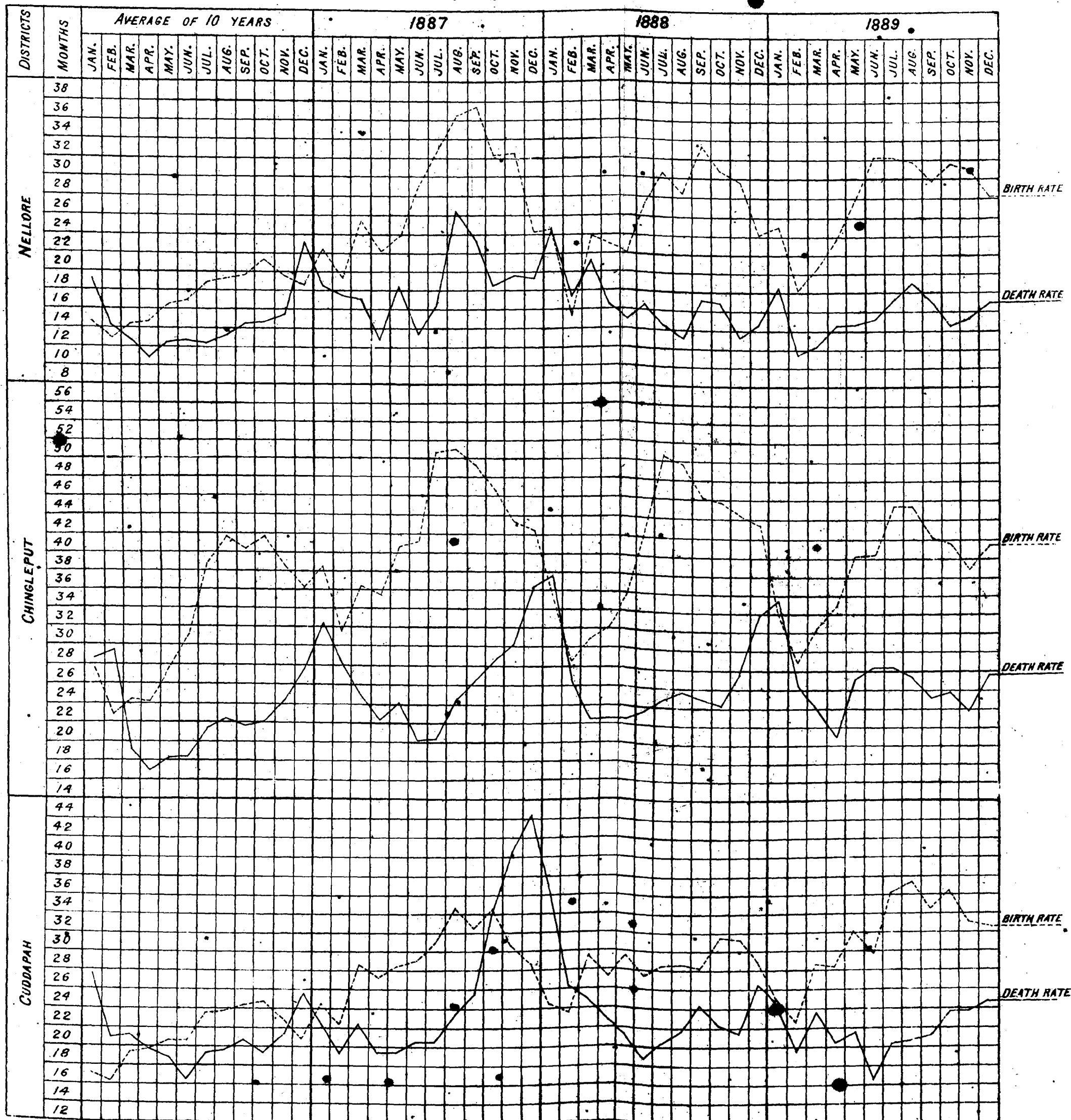
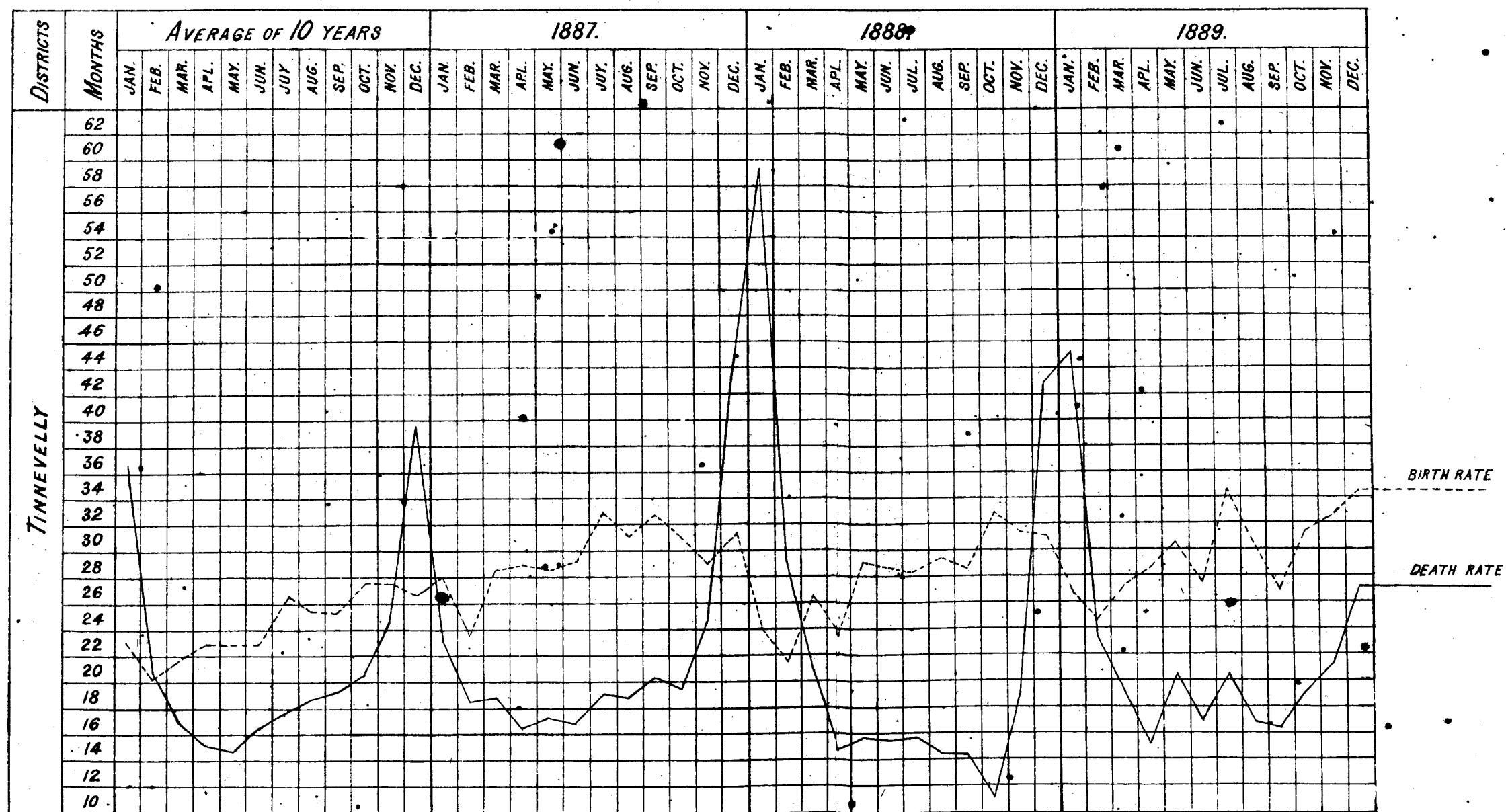
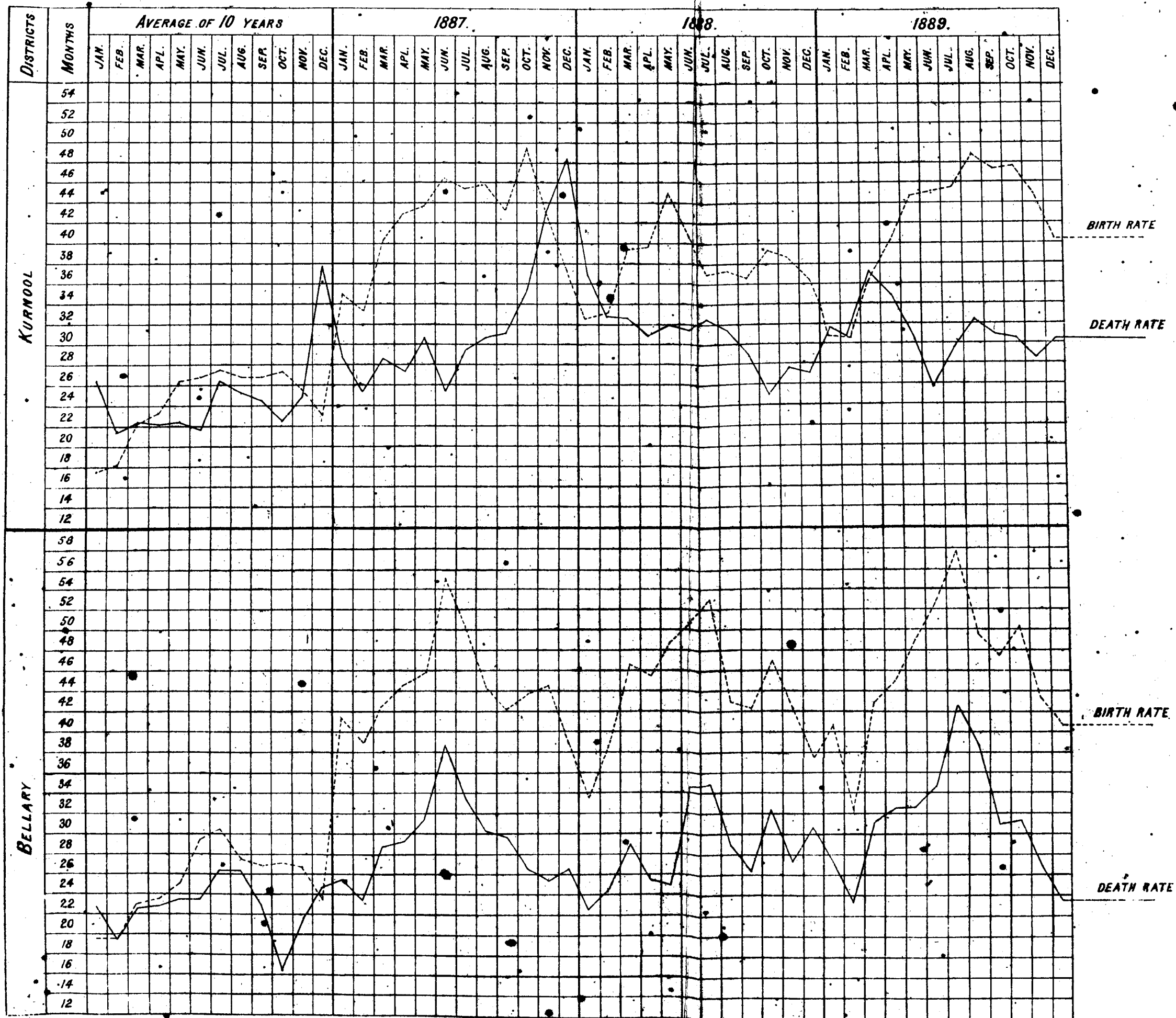


DIAGRAM SHOWING THE BIRTH AND DEATH RATES PER MILLE PER ANNUM IN THE UNDERMENTIONED DISTRICTS
DURING THE YEAR 1889 COMPARED WITH PREVIOUS YEARS.



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DIAGRAM SHOWING THE BIRTH AND DEATH RATES PER MILLE PER ANNUM IN THE UNDERMENTIONED DISTRICTS DURING THE YEAR 1889 COMPARED WITH PREVIOUS YEARS.



SECTION VI.

GENERAL HISTORY OF CHIEF DISEASES.

. CHOLERA.

27. 40,863 males and 35,157 females, or a total of 76,020 persons, died from cholera in 1889. This number exceeds the mean of the previous ten years by 44,392, and is the highest mortality recorded to have taken place from cholera since 1877—*vide* table on page 11.

The following table shows the ratios of cholera deaths for the past twenty-two years :—

Years.	Ratio of cholera deaths per mille of population.	Years.	Ratio of cholera deaths per mille of population
1868	0·3	1879	0·4
1869	0·8	1880	0·02
1870	2·3	1881	0·3
1871	0·7	1882	0·8
1872	0·4	1883	1·2
1873	0·02	1884	2·7
1874	0·01	1885	2·06
1875	3·1	1886	0·4
1876	5·08	1887	1·01
1877	12·2	1888	2·1
1878	1·6	1889	2·7

28. The subjoined table shows the monthly distribution of the deaths from cholera for the past nine years :—

Years.	Deaths from cholera.												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
1881	51	4	12	92	92	151	16	1	4	297	1,823	7,403	9,446
1882	10,794	4,193	1,081	491	590	843	550	780	644	777	799	2,062	23,604
1883	3,671	1,826	1,392	1,007	497	1,168	2,248	1,298	623	1,247	6,143	15,164	36,284
1884	21,268	7,362	2,374	1,550	2,108	3,975	6,267	3,298	2,677	1,645	3,639	19,313	75,476
1885	22,885	8,366	5,385	3,617	3,883	2,703	4,686	3,077	1,439	723	681	664	58,109
1886	1,224	554	582	1,219	1,597	1,214	1,564	774	640	1,111	1,003	935	12,417
1887	945	679	1,111	483	966	1,445	1,184	2,104	1,718	1,540	2,258	18,626	28,359
1888	18,787	9,399	4,421	2,251	1,694	2,565	4,587	3,551	1,806	1,813	1,494	6,310	58,677
1889	10,547	5,064	3,727	5,724	8,036	11,632	13,184	7,548	2,394	1,656	2,218	4,290	76,020
Ratio per mille of population for 1889.	0·3	0·1	0·1	0·2	0·2	0·4	0·4	0·2	0·08	0·06	0·08	0·1	2·7
Number of districts affected during 1889.	18	19	19	20	21	20	20	20	21	19	19	19	22

In no month of the year was cholera absent from the Mádras Presidency. The total mortality was highest in July and June (July 13,184 deaths, June 11,632). From July the mortality fell rapidly, and in October only 1,656 deaths were recorded; but in November and December there was again a rise. As regards this presidency, cholera usually attains its maximum degree of intensity during the cold weather months, but this year was an exception to the rule. In June and July 1889 many deaths from cholera were registered in the Vizagapatam and Godávári districts, and in the months of April, May, June and July the mortality from cholera was very great in the Ganjam district.

29. The deaths from cholera in the several districts in the presidency during each month of the year are given in annual Form VII in the appendix.

In every district in the presidency deaths from cholera were reported during the year, and in thirteen districts cholera was prevalent in them more or less throughout the year. In South Canara deaths from cholera were only recorded in the months of January, February and March. As before mentioned the mortality from cholera in 1889 is the highest recorded since 1877, and the increase is due to the large number of deaths registered under cholera in the Ganjam district. In 1889 there were 13,932 deaths recorded from cholera in the Ganjam district against 688 in 1888. The death-rate was 14·2 per 1,000 of population in 1889, 0·7 in 1888 and 0·9 the mean ratio per 1,000 for the previous five years. It must, however, be remembered that in 1889 in the Ganjam district the registration of cholera mortality was a good deal confused with famine diarrhoea, &c., and that the number of cholera deaths included in the returns has no doubt been exaggerated from this cause. The coincidence, however, of bad seasons in this presidency with maximum cholera prevalence is remarkable. Thus the year 1833-34 of the Guntūr famine, in which more than 50 per cent. of the people disappeared, was also a time of maximum prevalence of cholera. The years 1853-54, which were years of drought, were also years of unusual cholera, and the same may be said of the years 1865-66 and 1876-77. In the Ganjam district in 1889, in consequence of the prolonged drought, the people were in a semi-starved state for months, and in parts of the district the drinking water was more impure than usual, because, in consequence of the drought, it was much reduced in quantity and, therefore, had a larger percentage of suspended and dissolved impurities. The disease was present in the district before the food dearth was felt, but it was aggravated by the wandering habits of the famine sufferers, by the resort to strange and unnatural articles of diet, and by the use of contaminated water. In fact all the normal insanitary conditions of native life, viz., bad feeding, bad housing, bad conservancy, and bad water, were all intensified by the distress which prevailed in the Ganjam district. In January there were only 28 deaths registered from cholera in the Ganjam district, in February 58, and in March 115. The mortality then suddenly rose, and in April 3,367 deaths were registered, in May 4,209, in June 3,218 and in July 2,040. The mortality then suddenly decreased, and in August only 701 deaths were recorded, and in September 54. It may be here remarked that for the first five months of the year there was very little rain, but in June 6·17 inches were registered and in July as much as 10·34 inches.

In the districts of Godáviri and Vizagapatam the epidemic was very severely felt. In the former district the death-rate was 5·4 per 1,000 of population and in the latter 5·0. In eleven districts (Chingleput, Cuddapah, Kurnool, Madras, Malabar, North Arcot, Salem, South Canara, Tanjore, Tinnevelly and Trichinopoly) the death-rates were lower in 1889 than in 1888. In the following districts very few deaths were recorded from cholera:—Nilgiris 12, Madras 171, Kurnool 339, South Canara 353, Malabar 489 and Cuddapah 496.

30. Annual Form VI-B shows the mortality from the different causes in the principal towns of the presidency. Of the seventy-seven towns, in seventy-two deaths from cholera were registered and in only five there were no deaths recorded.

31. In the following twenty-seven towns the cholera death-rate in each was above 5 per 1,000 of population, and this is very high:—

Name of town.	Name of district.	Population of town.	Death-rate per 1,000.
Sálúr	Vizagapatam	11,856	23·2
Berhampore	Ganjam	23,599	23·1
Parlakimedi	Do.	15,365	23·0
Peldápuram	Godáviri	11,278	15·5
Vizianagrum	Vizagapatam	22,577	14·6
Robbili	Do.	14,943	11·4
Tirapatúr	Salem	14,278	11·2

Name of town.	Name of district.	Population of town.	Death-rate per 1,000.
Ványambádi	Salem	15,933	11·1
Bezvada	Kistna	9,336	9·4
Tuticorin	Tinnevelly	16,281	9·0
Tenkási	Do.	11,987	8·8
Ellore	Godáviri	25,092	8·5
Negapatam	Tanjore	53,776	8·0
Salem	Salem	59,631	7·7
Guntūr	Kistna	19,646	7·5
Arcot	North Arcot	10,718	7·5
Pithápuram	Godáviri	11,593	7·4
Chicacole	Ganjam	18,802	7·1
Chidambaram	South Arcot	19,837	7·0
Erode	Coimbatore	9,864	6·5
Rajahmundry	Godáviri	24,555	6·1
Conjeeveram	Chingleput	37,275	5·7
Vellore	North Arcot	40,958	5·5
Tinnevelly	Tinnevelly	23,221	5·5
Panruti	South Arcot	20,172	5·3
Vizagapatam	Vizagapatam	30,291	5·2
Cochin	Malabar	15,698	5·1

32. Of the fifty-five municipal towns (excluding Madras) fifty-three were affected. The following table shows the death-rate from cholera in each of the fifty-three towns which were affected as compared with the death-rate of the district in which it is situated:—

Districts, exclusive of municipal towns.	Ratio of cholera deaths per mille of population.	Municipalities.	Ratio of cholera deaths per mille of population.
Anantapur	2·0	Anantapur	0·4
Bellary		Bellary	1·6
Chingleput		Ádóni	0·2
Coimbatore	1·4	Conjeeveram	5·7
		Coimbatore	1·9
		Erode	6·5
Cuddapah	0·3	Karúr	2·5
		Cuddapah	4·1
		Berhampore	23·1
Ganjam	14·0	Chicacole	7·1
		Parlakimedi	23·0
		Ellore	8·5
Godáviri	5·3	Rajahmundry	6·1
		Cocanada	4·1
		Masulipatam	0·7
Kistna	2·3	Guntūr	7·5
		Bezvada	9·4
		Kurnool	0·09
Kurnool	0·5	Madura	2·8
		Dindigul	3·3
		Periyakulam	3·1
Madura	3·7	Palni	1·1
		Calicut	0·6
		Pálghat	0·4
Malabar	0·1	Cochin	5·1
		Nellore	0·4
		Ongole	0·1
Nellore	1·3	Ootacamund	0·08
		Coonoor	1·4
		Vellore	5·5
Nilgiris	0·05	Wárajápet	2·0
		Gudiyátam	3·4
		Tirupati	1·7
North Arcot	1·9	Salem	7·7
		Ványambádi	11·1
		Tirapatúr	11·2
Salem	1·4		

Districts, exclusive of municipal towns.	Ratio of cholera deaths per mille of population.	Municipalities.	Ratio of cholera deaths per mille of population.
South Arcot	3.5	Cuddalore	1.5
South Canara	0.3	Chidambaram	7.0
		Mangalore	0.7
		Tanjore	3.3
Tanjore	2.9	Kumbakonam	2.3
		Negapatam	8.0
		Máyavaram	4.1
		Mannargudi	3.9
Tinnevelly	2.5	Tinnevelly	5.5
		Palamcottah	3.8
		Tuticorin	9.0
Trichinopoly	1.6	Trichinopoly	1.3
		Srirangam	0.3
		Vizagapatam	5.2
Vizagapatam	5.0	Vizianagrum	14.6
		Bimlipatam	2.8
		Anakápallo	4.4

In thirty-three municipal towns the death-rate exceeded that of the districts and in twenty it was less. In only two municipalities (Cannanore and Tellicherry) no deaths were recorded.

33. Such measures as could be taken were resorted to by the district authorities to prevent the spread of the disease. From the reports received no new light has been cast upon the etiology of cholera. Overcrowding, local insanitary conditions, bad water, and unsuitable and unwholesome food have been indicated as predisposing elements for the production of cholera, and all that was required was an exciting cause for its development. There is, however, strong evidence to show that there is a close connection between impure water and cholera, and that dissemination of the disease is largely dependent on water-fouling. It has also been found that cholera finds difficulty in taking root in places with a pure water-supply.

The following is the statement ordered by the Government of India to be appended to the cholera map, and it shows each district affected by cholera, its population, the dates of first and last cases, the total cholera deaths, their ratios per 1,000 of population, the period of maximum intensity, the number of villages in the districts, and the number of those affected and not affected by the disease.

Statement illustrating the distribution, &c., of Cholera in the Madras Presidency during the year 1889, to accompany the Cholera Map.

1	2	3	4	5	6	7	8	9	10		
Districts.	Number of Circles of Registration.	Name of the Circle.	Population for which Returns were received.	Date of First Case of Cholera in the Circle during the Year.	Date of Last Case of Cholera in the Circle during the Year.	Cholera.		Period of Maximum Intensity of the Disease.	Number of Villages in each of the Circles.	Number of those	
						Total Deaths in each of the Circles.	Ratio per 1,000 of Population.			Affected by Cholera.	Not affected by Cholera.
Ganjam.	1	Chicacole Taluk	146,136	22nd April...	31st Dec...	1,070	7.3	May	307	102	205
	2	Berhampore do.	172,122	3rd Jan...	10th Dec...	4,027	23.3	April	552	261	291
	3	Gumsoor do.	141,852	10th Feb...	25th Oct...	2,113	14.8	July	825	272	553
	4	M. T. Chicacole	18,302	22nd April...	4th Sept...	131	7.1	June	1	1	...
	5	M. T. Berhampore	23,599	30th Mar...	29th July...	545	23.1	April	1	1	...
	6	M. T. Parlákimedi	115,365	1st April...	13th Aug...	354	23.0	May	1	1	...
	7	Zemindaries	446,575	3rd Feb...	6th Dec...	5,646	12.6	June	2,754	507	2,247
	8	Agency Tracts	13,741	5th May...	30th Aug...	46	3.3	August	2,733	6	2,727
	Total	977,692	3rd Jan.	31st Dec.	13,932	14.2	May	7,174	1,151	6,023	
Vizagapatam.	9	Sarvasiddhi Taluk.	119,297	28th Mar...	8th Nov...	410	3.4	July	152	65	87
	10	Narsapatnam do.	89,365	16th Mar...	21st Sept...	471	5.2	August	178	41	137
	11	Anakápallo do.	103,292	4th April...	9th Sept...	185	1.8	July	144	35	109
	12	Vizagapatam do.	44,726	6th June...	13th Oct...	74	1.7	Do.	74	25	49
	13	Viravilli do.	137,268	28th Mar...	24th Aug...	297	2.1	Do.	238	60	178
	14	Bimlipatam do.	88,257	4th May...	14th Sept...	307	3.5	Do.	117	54	63
	15	Srungavarapukottah do.	96,799	28th Mar...	30th Oct...	844	8.7	Do.	178	86	92
	16	Vizianagrum do.	75,378	30th Mar...	10th Aug...	223	2.9	June & July.	186	36	150
	17	Gajapatnagar do.	89,337	10th April...	14th Aug...	273	3.3	July	224	40	184
	18	Chipurupalle do.	100,734	24th April...	30th Sept...	298	2.9	June	268	46	222
	19	Sálúr do.	62,798	30th Mar...	24th Aug...	850	13.5	July	156	63	93
	20	Bobbili do.	99,885	8th April...	19th Aug...	692	6.9	Do.	178	54	124
	21	Pálkonda do.	120,936	4th April...	7th Dec...	1,135	9.4	June	362	162	200
	22	Párvatipur do.	88,024	30th April...	1st Sept...	432	4.9	July	208	59	149
	23	M. T. Vizagapatam	30,291	19th May...	27th Aug...	159	5.2	Do.	1	1	...
	24	M. T. Bimlipatam	8,582	10th July...	29th Aug...	24	2.8	Do.	1	1	...
	25	M. T. Vizianagrum	22,577	30th Mar...	22nd Sept...	331	14.6	Do.	1	1	...
	26	M. T. Anakápallo	13,341	7th April...	15th Aug.	60	4.4	Do.	1	1	...
	Total	1,390,887	16th Mar...	7th Dec...	7,065	5.0	July	2,667	830	1,837	
Godávari.	27	Rámachandrapuram Taluk	220,780	24th Mar...	14th Sept...	1,618	7.3	July	163	76	87
	28	Amalápuram do.	227,157	4th April...	27th Sept...	519	2.2	Do.	172	54	118
	29	Narsápur do.	200,153	19th Mar...	18th Oct...	536	2.6	Do.	139	46	93
	30	Bhimavaram do.	108,599	20th Mar...	19th Oct...	1,055	9.7	June	149	39	110
	31	Tanuku do.	188,306	8th Mar...	18th Nov...	1,338	7.1	Do.	180	58	122
	32	Ellore do.	124,216	Do.	18th Sept...	308	2.4	Do.	248	20	228
	33	Yornagudem do.	159,364	4th Mar...	4th Oct...	678	4.2	July	211	28	183
	34	Rajahmundry do.	106,641	23rd Mar...	24th Oct...	796	7.4	August	139	30	109
	35	Peddápuram do.	124,314	26th Mar...	31st Oct...	943	7.5	Do.	213	33	180
	36	Bhadráchalam do.	35,656	8th June...	16th July...	24	0.6	July	313	4	309
	37	M. T. Cocanada	30,441	29th April...	29th July...	127	4.1	May	1	1	...
	38	M. T. Rajahmundry	24,555	12th Mar...	15th Aug...	150	6.1	July	1	1	...
	39	M. T. Ellore	25,092	20th Feb...	14th Aug...	215	8.5	June	1	1	...
	40	Zemindaries	216,238	22nd Mar...	30th Oct...	1,379	6.3	July	272	63	209
		Total	1,791,512	20th Feb...	18th Nov...	9,686	5.4	July	2,202	454	1,748
Kistna.	41	Rápalle Taluk	184,340	11th Feb...	20th Dec...	156	0.8	August	150	23	127
	42	Bápatla do.	151,736	4th Mar...	31st Dec...	142	0.9	March	114	18	96
	43	Guntúr do.	116,437	15th Mar...	23rd Sept...	492	4.2	August	113	36	77
	44	Palnád do.	125,799	2nd April...	17th Nov...	47	0.3	October	97	5	92
	45	Narasaraopet do.	128,791	16th Mar...	22nd Dec...	276	2.1	August	114	29	85
	46	Gudiváda do.	99,233	2nd April...	21st Sept...	506	5.1	Do.	203	48	155
	47	Sattenapalle do.	110,290	22nd Mar...	17th Oct...	81	0.7	September.	174	16	158
	48	Masulipatam do.	140,426	1st Mar...	25th Sept...	154	1.1	August	194	27	167
	49	Nandigáma do.	107,288	28th Feb...	16th Oct...	334	3.1	Do.	172	45	127
	50	Bezváda do.	73,559	9th Mar...	30th Sept...	547	7.4	Do.	111	57	54
	51	Vinukonda do.	66,977	20th Mar...	30th Nov...	41	0.6	November...	71	11	60
	52	M. T. Masulipatam	35,056	17th Mar...	1st Dec...	25	0.7	August	1	1	...
	53	M. T. Guntúr	19,646	9th Mar...	2nd Sept...	148	7.5	July	1	1	...
	54	M. T. Bezváda	9,336	21st Feb...	25th Aug...	88	9.4	March	1	1	...
	55	Zemindaries	179,566	19th Feb...	27th Nov...	720	4.0	July	321	82	239
	Total	1,548,480	11th Feb...	31st Dec...	3,757	2.4	August	1,837	400	1,437	
Nellore.	56	Gúddúr Taluk	99,249	9th Jan...	9th Jan...	1	0.01	...	124	1	123
	57	Rápúr do.	49,774	...	...	...	...	...	116	...	116
	58	Nellore do.	136,235	5th Feb...	14th Feb...	6	0.04	...	154	3	151
	59	Atmakúr do.	83,911	...	...	...	...	...	112	...	112
	60	Kávali do.	60,650	13th April...	18th Sept...	292	4.8	September..	57	3	54
	61	Udayagiri do.	48,043	...	...	...	...	...	54	...	54
	62	Kandukúr do.	97,113	22nd Mar...	19th Sept...	232	2.3	August	126	19	107
	63	Kanigiri do.	50,174	7th Aug...	14th Sept...	160	3.2	September..	58	14	44

Statement illustrating the distribution, &c., of Cholera in the Madras Presidency during the year 1889,
to accompany the Cholera Map—continued.

1	2	3	4	5	6	7	8	9	10
Districts.	Number of Circles of Registration.	Name of the Circle.	Population for which Returns were received.	Date of First Case of Cholera in the Circle during the Year.	Date of Last Case of Cholera in the Circle during the Year.	Cholera. Total Deaths in each of the Circles. Ratio per 1,000 of Population.	Period of Maximum Intensity of the Disease.	Number of Villages in each of the Circles.	Number of those: Affected by Cholera. Not affected by Cholera.
N. Arcot—cont.	178	Arcot Taluk ...	147,388	1st Jan. ...	30th Dec. ...	615 43	January ...	258	37 221
	179	Wāljāpet do. ...	188,790	Do. ...	Do. ...	353 18	Do. ...	249	25 224
	180	M. T. Vellore ...	40,958	Do. ...	31st Dec. ...	225 55	Do. ...	1	1 ...
	181	M. T. Wāljāpet ...	10,387	10th Jan. ...	17th June ...	21 20	May ...	1	1 ...
	182	M. T. Gudiyātam ...	16,690	1st Jan. ...	17th Dec. ...	58 34	January ...	1	1 ...
	183	M. T. Tirupati ...	13,232	14th Feb. ...	3rd Nov. ...	23 17	October ...	1	1 ...
	184	Zemindaries ...	581,596	1st Jan. ...	31st Dec. ...	460 07	January ...	1,598	50 1,518
		Total ...	1,822,873	1st Jan. ...	31st Dec. ...	3,799 20	January ...	3,638	269 3,349
Salem.	185	Salem Taluk ...	267,547	1st Jan. ...	31st Dec. ...	645 24	December ...	518	164 354
	186	Atūr do. ...	158,554	Do. ...	Do. ...	409 25	Do. ...	181	54 117
	187	Nāmakkal do. ...	254,577	2nd Jan. ...	Do. ...	117 04	Do. ...	378	23 355
	188	Tiruchengōd do. ...	191,328	5th Jan. ...	27th Dec. ...	112 07	August ...	309	25 280
	189	Hosūr do. ...	131,770	4th Jan. ...	14th Sept. ...	35 02	January ...	952	3 949
	190	Kistnagiri do. ...	120,929	1st Jan. ...	29th Dec. ...	100 08	Do. ...	541	22 519
	191	Dharmapuri do. ...	135,826	Do. ...	17th Dec. ...	272 20	Do. ...	704	37 667
	192	Tirupatūr do. ...	133,070	2nd Jan. ...	31st Dec. ...	267 20	August ...	338	38 300
	193	Uttankarai do. ...	109,456	8th Jan. ...	22nd Dec. ...	132 12	January ...	555	13 542
	194	M. T. Salem ...	59,631	1st Jan. ...	31st Dec. ...	462 77	November ...	1	1 ...
	195	M. T. Tirupatūr ...	14,278	15th Jan. ...	Do. ...	161 112	December ...	1	1 ...
	196	M. T. Vāniyambādi ...	15,933	5th Jan. ...	19th Dec. ...	177 111	January ...	1	1 ...
		Total ...	1,592,899	1st Jan. ...	31st Dec. ...	2,919 18	January ...	4,479	396 4,083
Coimbatore.	197	Coimbatore Taluk ...	228,837	23rd Jan. ...	26th Oct. ...	562 24	June ...	263	60 203
	198	Erode do. ...	185,805	11th Feb. ...	31st Dec. ...	145 07	December ...	197	25 172
	199	Satyamangalam do. ...	151,313	10th May ...	21st Dec. ...	179 11	August ...	178	40 138
	200	Pollāchi do. ...	172,909	21st April ...	30th Dec. ...	547 31	Do. ...	161	95 66
	201	Palladam do. ...	213,391	26th Jan. ...	28th Dec. ...	77 03	April ...	195	15 180
	202	Bhavāni do. ...	94,123	9th Jan. ...	30th Dec. ...	511 54	August ...	62	45 17
	203	Kollegāl do. ...	77,522	20th June ...	1st Dec. ...	19 02	Do. ...	125	9 116
	204	Udamalpet do. ...	112,572	24th Jan. ...	30th Dec. ...	58 05	December ...	91	11 80
	205	Karūr do. ...	167,950	2nd Jan. ...	31st Dec. ...	241 14	Do. ...	95	30 65
	206	Dhārāpuram do. ...	195,232	23rd Feb. ...	Do. ...	476 24	Do. ...	82	40 42
	207	M. T. Coimbatore ...	38,967	26th April ...	6th Oct. ...	74 19	June ...	1	1 ...
	208	M. T. Erode ...	9,864	9th Feb. ...	12th Dec. ...	64 65	September ...	1	1 ...
	209	M. T. Karūr ...	9,205	Feb. ...	Dec. ...	23 25	Feb. & May ...	1	1 ...
		Total ...	1,657,690	2nd Jan. ...	31st Dec. ...	2,976 17	August ...	1,452	373 1,079
Nīlگیرis.	210	Nīlگیرi Taluk ...	46,756	21st Feb. ...	26th Sept. ...	4 008	September ...	33	3 30
	211	Wellington Cantonment. ...	1,725	...	...	...	...	1	...
	212	South-East Wynād ...	25,440	...	...	...	...	12	...
	213	M. T. Ootacamund ...	12,335	27th Sept. ...	27th Sept. ...	1 008	...	1	1 ...
	214	M. T. Coonoor ...	4,778	21st April ...	23rd Dec. ...	7 14	June ...	1	1 ...
		Total ...	91,034	21st Feb. ...	23rd Dec. ...	12 01	June ...	48	5 43
S. Canara.	215	Mangalore Taluk ...	216,950	1st Jan. ...	21st Mar. ...	71 03	January ...	306	23 283
	216	Kāsaragōd do. ...	243,881	Do. ...	31st Mar. ...	163 06	Do. ...	243	24 219
	217	Uppinangadi do. ...	110,367	Do. ...	31st Jan. ...	24 02	Do. ...	278	9 269
	218	Udipi do. ...	237,432	Do. ...	28th Feb. ...	59 02	Do. ...	258	18 240
	219	Kundapur do. ...	115,113	Do. ...	31st Jan. ...	11 009	Do. ...	190	3 187
	220	M. T. Mangalore ...	32,099	Do. ...	28th Feb. ...	25 07	Do. ...	1	1 ...
		Total ...	955,842	1st Jan. ...	31st Mar. ...	353 03	January ...	1,276	78 1,198
Malabar.	221	Chirakkal Taluk ...	246,283	1st Jan. ...	30th June ...	16 06	February ...	43	4 39
	222	Kōttayam do. ...	141,191	...	...	...	...	27	...
	223	Kurumbanād do. ...	261,024	16th Oct. ...	3rd Nov. ...	9 003	October ...	57	2 55
	224	Calicut do. ...	148,877	16th Feb. ...	30th Dec. ...	32 02	August ...	38	2 36
	225	Ernād do. ...	296,143	1st Jan. ...	31st Dec. ...	49 01	December ...	52	4 48
	226	Ponāni do. ...	392,654	7th Feb. ...	30th Aug. ...	83 02	May ...	73	9 64
	227	Walawanād do. ...	308,102	11th Jan. ...	23rd Dec. ...	19 006	December ...	64	3 61
	228	Pālgat do. ...	306,115	22nd Mar. ...	30th Dec. ...	149 04	Do. ...	56	8 48
	229	Wynād do. ...	88,091	...	...	...	...	22	...
	230	Cochin do. ...	1,463	...	...	...	...	1	...
	231	Anjengo do. ...	2,534	...	...	...	...	1	...
	232	Tangachéri do. ...	1,665	...	...	...	...	1	...
	233	M. T. Tellicherry ...	24,581	...	...	...	...	1	...
	234	M. T. Calicut ...	57,085	11th Feb. ...	31st Dec. ...	36 06	December ...	1	1 ...
	235	M. T. Pālgat ...	36,339	11th Dec. ...	23rd Dec. ...	16 04	Do. ...	1	1 ...
	236	M. T. Cochin ...	15,698	15th Feb. ...	2nd Sept. ...	80 51	February ...	1	1 ...
	237	M. T. Cannanore ...	26,386	...	...	...	...	1	...
		Total ...	2,354,234	1st Jan. ...	31st Dec. ...	489 02	December ...	440	35 405

NOTE.—In this statement the ratios are worked on the population including Europeans and Eurasians.

34. The following statements give daily records of meteorological observations and reported deaths from cholera at Salem during the prevalence of that disease in 1889:—

Daily Record of Meteorological Observations and of Cholera Deaths at SALEM during the Prevalence of the Disease in the year 1889.

Month and date.	Rainfall in inches.	Temperature of air in the shade.			Moisture of air per cent., 100 being saturation.		Wind.			Deaths from cholera recorded on each day.	
		Highest maxi- mum.	Lowest mini- mum.	Range.	10 H.	16 H.	Direction.		Velocity, miles per diem.		
							10 H.	16 H.			
JANUARY.											
1	...	...	57.6	...	55	57	N.E.	S.E.	93	1	
2	...	...	62.9	...	60	59	E.N.E.	N.E.	79	5	
3	...	...	60.9	...	58	54	E.N.E.	N.E.	71	5	
4	...	...	62.9	...	70	53	E.	S.S.E.	116	6	
5	...	...	66.0	...	68	53	E.N.E.	S.E.	104	9	
6	...	...	72.1	...	73	66	E.	E.S.E.	128	...	
7	...	0.23	72.6	...	75	81	S.E.	E.	89	8	
8	...	...	73.0	...	73	57	N.E.	E.	155	5	
9	...	...	63.9	...	70	58	E.N.E.	S.W.	96	4	
10	...	...	62.9	...	68	58	E.N.E.	E.	60	2	
11	...	...	61.9	...	61	51	S.E.	N.E.	92	3	
12	...	...	60.2	...	69	51	E.	E.N.E.	84	2	
13	...	...	61.9	...	69	43	E.N.E.	E.	146	...	
14	...	...	59.9	...	65	58	N.E.	S.E.	110	9	
15	...	...	59.9	...	54	43	E.	N.N.E.	100	2	
16	...	...	88.4	66.8	21.6	55	49	S.E.	S.E.	152	4
17	...	...	89.0	64.9	24.1	53	46	E.N.E.	S.E.	132	1
18	...	...	89.5	65.4	24.1	58	52	S.E.	E.	114	4
19	...	...	89.1	66.8	22.3	62	55	S.E.	E.	103	2
20	...	...	90.5	61.7	28.8	58	50	E.S.E.	E.	101	...
21	...	...	90.0	62.9	27.1	55	49	E.	E.S.E.	87	1
22	...	...	91.6	60.9	30.7	61	33	S.E.	S.S.E.	72	2
23	...	...	93.1	61.1	32.0	54	38	S.E.	S.S.E.	75	...
24	...	...	94.3	60.3	34.0	44	40	E.	S.S.E.	88	2
25	...	...	92.3	59.9	32.4	69	37	E.	S.S.E.	108	2
26	...	...	91.9	62.0	29.9	56	49	N.N.E.	E.	111	1
27	...	...	91.3	66.7	24.6	56	47	E.	E.N.E.	96	...
28	...	...	91.5	64.9	26.6	59	47	E.	S.E.	115	2
29	...	...	90.3	62.5	27.8	62	48	N.E.	S.E.	128	2
30	...	...	93.3	65.0	28.3	66	43	E.	S.E.	123	2
31	...	...	96.8	66.4	30.4	64	43	E.N.E.	E.	33	2
FEBRUARY.											
1	...	...	99.1	66.7	32.4	62	63	N.E.	E.N.E.	106	...
2	...	...	97.9	66.9	31.0	63	37	E.N.E.	S.E.	105	2
3	...	...	94.4	64.9	29.5	60	45	E.	N.N.E.	118	...
4	...	...	95.5	65.9	29.6	75	43	S.E.	E.S.E.	110	5
5	...	...	96.1	58.9	37.2	62	43	S.W.	S.E.	87	...
6	...	...	93.9	65.2	28.7	64	47	S.E.	E.S.E.	140	2
7	...	...	90.4	63.5	26.9	50	54	E.	E.S.E.	91	...
8	...	...	94.3	62.5	31.8	57	50	E.	S.E.	118	2
9	...	...	94.2	62.1	32.1	67	42	E.S.E.	E.N.E.	100	1
10	...	...	96.3	62.4	33.9	60	38	E.N.E.	E.	91	...
11	...	...	96.5	66.2	30.3	65	39	E.	E.N.E.	83	1
12	...	...	96.3	65.2	31.1	53	33	S.E.	E.N.E.	136	2
13	...	...	94.3	63.8	30.5	60	42	E.	S.E.	107	3
14	...	...	93.6	63.9	29.7	41	37	N.N.E.	N.E.	142	1
15	...	...	92.7	62.1	30.6	46	34	E.N.E.	E.	126	...
16	...	...	93.4	64.9	28.5	59	43	E.	N.	91	...
17	...	...	95.1	66.9	28.2	56	42	E.	S.E.	117	...
18	...	...	94.8	67.2	27.6	64	29	E.N.E.	E.	111	...
19	...	...	96.1	65.8	30.3	41	35	E.	E.N.E.	91	1
20	...	...	97.1	66.9	30.2	56	35	E.	N.E.	101	...
21	...	...	96.3	70.9	25.4	46	39	N.E.	E.N.E.	148	2
22	...	...	95.3	67.9	27.4	56	38	E.N.E.	E.S.E.	152	2
23	...	...	96.2	68.1	28.1	52	42	N.N.E.	E.	153	...
24	...	...	96.4	66.7	29.7	56	36	N.E.	E.	119	...
25	...	...	96.7	66.6	30.1	59	41	S.E.	S.	120	...
26	...	...	96.5	70.5	26.0	65	42	E.	N.E.	131	...
27	...	...	100.4	70.9	29.5	54	37	E.N.E.	E.S.E.	129	...
28	...	...	100.6	66.9	33.7	58	32	N.E.	E.N.E.	138	1

SMALL-POX.

35. The total deaths registered in 1889 from small-pox were 29,138 against 21,858 in 1888 and a quinquennial mean of 31,286.

36. The number of deaths registered from small-pox in each year since 1868 is seen in the table on page 11, and in the subjoined table the ratios per mille of population are given :—

Table showing the ratios of Small-pox Deaths for a series of years.

Years.	Ratio per mille of population.	Years.	Ratio per mille of population.
1868	1.2	1879	0.6
1869	0.7	1880	0.5
1870	0.5	1881	0.5
1871	0.8	1882	0.6
1872	1.2	1883	1.3
1873	1.7	1884	2.1
1874	1.5	1885	1.2
1875	0.8	1886	0.6
1876	0.8	1887	0.7
1877	3.0	1888	0.8
1878	1.9	1889	1.0

The small-pox death-rate for the presidency during the year under review was 1.0 per 1,000 of population, for 1888 it was 0.8, and for the five-year period 1884-88 the annual average rate was 1.1 per 1,000. The mortality from this cause for the present year is higher than that of 1888, but less than the average of the preceding five years.

37. The seasonal incidence of small-pox is shown in annual Form No. VIII. The disease prevailed severely during the months of January, February, March and April, attaining, as often happens, its maximum in March and gradually decreasing in severity as the cold weather approached until December when the numbers again rose, 2,343 deaths being recorded for that month. The minimum number of deaths (1,289) was registered in October.

38. There were 5,641 children under one year of age and 12,260 over one and under twelve years of age who died from small-pox. These figures are instructive as showing the extreme proneness of the disease to attack infants and young persons. Nearly two-thirds or 61 per cent. of the small-pox mortality in 1889 occurred in children under twelve years of age. The attention of the Vaccine department has frequently been called to the necessity of prosecuting vaccination amongst young children, preferably those under one year of age. But there are difficulties in the way, and the people as a rule make great objections to the vaccination of children below one year of age. A test of the efficiency of vaccination in a district or town should be the proportions of vaccinated under one year of age to the registered births in the district or town.

39. Although the total for 1889 exceeds that for 1888, there is decrease in the death-rate in eight districts. In Coimbatore the death-rate is the same as for 1888, and in the twelve (Anantapur-Bellary, Chingleput, Cuddapah, Ganjam, Godáviri, Kistna, Kurnool, Madras, Salem, South Arcot, Tanjore and Vizagapatam) the rates are higher. In last year's report it was noted that the small-pox mortality was high in the Kurnool and Ganjam districts, and for the present year these two districts have again the highest recorded death-rates from this cause. In the Ganjam district the ratio per 1,000 of population was 4.3 against 2.2 in 1888. The condition of the population of this district in 1889 was, however, such as to be eminently favorable to the spread of a contagious disease like small-pox. Nearly all historical records of scarcity in India show that small-pox is a most common attendant on those forms of distress that cause disruption of village and family life and tend to the massing of the people in crowds. The indifference of the people to the disease and their thoughtless exposure of the unprotected to contagion tend greatly to its epidemic spread. In the Kurnool district the small-pox mortality amounted to 4.2 per 1,000 during the year under report against 2.4 in 1888. In this district vaccination has always been opposed by the people and its practice has been carried on under many disadvantages.

The District Medical and Sanitary Officer, Kurnool, in his annual report states :—

"A most severe epidemic small-pox swept the district. No less than 2,913 deaths occurred. This was nothing but what was to be expected in a district where vaccination has hitherto met with steady opposition and where Government has refused, though twice asked by the District Board to do so, to sanction compulsory vaccination. A grant of Rs. 1,000 having been made by the Board, I organized a "Special Vaccination Department" to deal with the epidemic. They vaccinated over 17,000 cases in addition to those performed by the regular staff during the year.

"Villagers have, as a result of this epidemic, altered their views as to the futility of "vaccination."

The mortality in the districts of Madras, Tinnevely and Godáviri was slight, the ratio per 1,000 of population being 0.1 in each.

40. From annual Form VI in the appendix it is seen that in districts the death-rate from small-pox was 1.0, the same as that for towns.

41. In the following table is shown the small-pox mortality in the municipal towns during the year under report :—

No.	Municipalities.	Number of deaths from small-pox.	Ratio per mille of population.	Ratio per mille of successful vaccination to population.	No.	Municipalities.	Number of deaths from small-pox.	Ratio per mille of population.	Ratio per mille of successful vaccination to population.
1	Vizagapatam	205	6.7	51.3	30	Tirupatūr	8	0.5	28.1
2	Berhampore	122	5.1	19.5	31	Parlákimedi	7	0.4	40.2
3	Vizianagrum	111	4.9	38.7	32	Cuddapah	6	0.3	29.5
4	Kumbakonam	169	3.3	26.0	33	Salem	18	0.3	33.1
5	Chicacole	54	2.9	18.3	34	Cuddalore	16	0.3	20.9
6	Bezvada	26	2.7	58.3	35	Tinnevely	7	0.3	32.8
7	Bellary	141	2.6	35.2	36	Rajahmundry	5	0.2	42.8
8	Adóni	57	2.5	43.4	37	Ougole	2	0.2	25.3
9	Mannárgudi	44	2.2	27.1	38	Ootacamund	2	0.1	66.7
10	Kurnool	42	2.0	116.7	39	Karúr	1	0.1	41.8
11	Wálajápet	21	2.0	26.2	40	Negapatam	9	0.1	33.6
12	Chidambaram	35	1.7	42.1	41	Máyavaram	3	0.1	36.4
13	Anantapur	8	1.6	69.3	42	Tuticorin	2	0.1	43.5
14	Anakápalle	20	1.4	30.1	43	Bimlipatam	1	0.1	57.6
15	Calicut	73	1.2	30.5	44	Tellicherry	2	0.08	31.6
16	Cannanore	33	1.2	55.1	45	Periyakulam	1	0.06	22.0
17	Trichinopoly	108	1.2	56.4	46	Palamecottah	1	0.05	41.5
18	Vellore	48	1.1	34.8	47	Mangalore	1	0.03	48.3
19	Tanjore	62	1.1	29.1	48	Masulipatam	...	...	34.8
20	Madura	73	0.9	34.9	49	Guntúr	...	...	31.2
21	Palni	12	0.9	43.2	50	Pálghat	...	...	36.3
22	Cocanada	25	0.8	3.9	51	Cochin	...	...	61.1
23	Dindigul	12	0.8	100.2	52	Nellore	...	...	49.3
24	Vániyambádi	13	0.8	24.1	53	Coonoor	...	...	106.5
25	Gudiyátam	12	0.7	10.6	54	Tirupati	...	...	10.5
26	Srirangam	13	0.6	54.9	55	Ellore	...	...	45.6
27	Conjeeveram	21	0.5	34.5					
28	Coimbatore	20	0.5	36.8					
29	Erode	5	0.5	69.7					
						Total	1,677	1.1	37.05

In all municipalities with the exception of eight (Masulipatam, Guntúr, Pálghat, Cochin, Nellore, Coonoor, Tirupati and Ellore) deaths from small-pox were recorded. The highest death-rate, viz., 6.7 per 1,000 of population, was in Vizagapatam, the district rate being only 0.5. Berhampore stands next with a ratio of 5.1 per 1,000 of population. The lowest ratio (0.03) per 1,000 of population took place in Mangalore.

FEVERS.

42. The registered mortality from "fevers" during the year was 230,172 or a ratio of 8.2 per mille of the population against 204,561 or 7.3 per mille in 1888 and 220,373 or 7.8 per mille, the mean of the previous five years. There was

According to these figures fever was less prevalent in towns as a rule and more prevalent in rural circles during the year under report, the death-rate for the districts being 8·3 per mille of population, while that for municipal towns was 5·8. It is possible that the low rate of mortality in towns as compared with that in rural circles is partly due to the indiscriminate classification of all diseases with inflammatory symptoms as fever in the more rural and less educated tracts of the country.

In fifteen towns (Kurnool, Bezvada, Rajahmundry, Bellary, Tirupati, Tuticorin, Adoni, Chidambaram, Anantapur, Conjeeveram, Tanjore, Kumbakonam, Mayavaram, Negapatam and Mannargudi) the mortality rate from fevers was greater than that of the districts.

BOWEL-COMPLAINTS.

46. There were 29,122 deaths recorded under "bowel-complaints" in the presidency during the year or 1,401 more than last year, when 27,721 deaths were registered. The death-rates from bowel-complaints for a series of years are given in the following table:—

Years.	Ratio per mille of population.	Years.	Ratio per mille of population.
1881	0·6	1886	0·9
1882	0·6	1887	0·9
1883	0·7	1888	1·0
1884	1·0	1889	1·0
1885	1·1		

47. The death-rate for the year under review was 1·0 per 1,000, being the same as that for 1888, and also for the average rate per 1,000 of population for the five-year period 1884–88. In eight districts (Coimbatore, Ganjam, Godavari, Madras, Madura, North Arcot, Salem and Vizagapatam) the death-rate was higher in 1889 than in 1888, in seven (Kistna, Kurnool, Nellore, Nilgiris, South Arcot, Tanjore and Tinnevely) it was the same, and in six (Bellary-Anantapur, Chingleput, Cuddapah, Malabar, South Canara and Trichinopoly) it was less. Madras as usual heads the list with the high death-rate of 7·5 per 1,000 of population or 1·0 more than in 1888. Following it comes Chingleput with a ratio of 4·0 per 1,000 against 4·2 in 1888, and next to it come Malabar and South Canara with 1·8 each. In 1888 the death-rates per 1,000 of population for South Canara and Malabar were 2·3 and 2·0 respectively. Madras, Chingleput and South Canara usually return the highest death-ratios from "bowel-complaints." The lowest ratios, viz., 0·3 and 0·4 per mille, were returned by the Kistna and Vizagapatam districts respectively.

48. The greatest mortality, as will be seen in table X in appendix, was registered during the month of January, and the experience of 1889 has been in accordance with the general rule. The fewest deaths as usually happens were recorded in April.

49. The following table shows the number of deaths reported from bowel-complaints in each district and municipality in 1889:—

No.	Districts, exclusive of municipalities.	Number of deaths from bowel-complaints.	Ratio per mille of population.	No.	Municipalities.	Number of deaths from bowel-complaints.	Ratio per mille of population.
1	Madras	2,930	7·5	1	Tuticorin	156	9·5
2	Chingleput	3,830	4·0	2	Bezvada	80	8·5
3	Malabar	3,862	1·7	3	Cocanada	202	6·6
4	South Canara	290	1·7	4	Negapatam	336	6·2
5	Anantapur	771	0·8	5	Madura	464	6·0
6	Bellary	1,318	0·8	6	Calicut	346	6·0
7	Coimbatore	54	0·7	7	Rajahmundry	145	5·9
8	Nilgiris	1,273	0·7	8	Tinnevely	137	5·9
9	North Arcot	1,180	0·7	9	Kumbakonam	282	5·6
10	Tinnevely	711	0·6	10	Mangalore	171	5·3
11	Madura	646	0·5	11	Tanjore	280	5·1
12	Cuddapah	699	0·5	12	Chicacole	88	4·8
13	Nellore	784	0·5	13	Vizagapatam	148	4·8
14	Salem	995	0·5	14	Bimlipatam	41	4·7
15	South Arcot	377	0·4	15	Karur	43	4·6
16	Ganjam	690	0·4	16	Mannargudi	85	4·3
17	Godavari	300	0·4	17	Srirangam	86	4·3
18	Kurnool	590	0·3	18	Berhampore	98	4·1
19	Tanjore	408	0·3	19	Tirupatur	56	3·9
20	Trichinopoly	416	0·2	20	Mayavaram	90	3·9
21	Kistna	311	0·2	21	Ongole	35	3·8
22	Vizagapatam	1,308	0·2	22	Coimbatore	146	3·7
				23	Periyakulam	62	3·7
				24	Conjeeveram	134	3·6
				25	Cochin	55	3·5
				26	Coonoor	17	3·5
				27	Erode	34	3·4
				28	Walajapet	36	3·4
				29	Ellore	84	3·3
				30	Chidambaram	64	3·2
				31	Ootacamund	40	3·2
				32	Vellore	116	2·8
				33	Cuddalore	121	2·7
				34	Cuddapah	47	2·5
				35	Vizianagrum	57	2·5
				36	Dindigul	32	2·2
				37	Salem	120	2·0
				38	Kurnool	40	1·9
				39	Palghat	67	1·8
				40	Palamcottah	33	1·8
				41	Trichinopoly	148	1·7
				42	Cannanore	40	1·5
				43	Guntur	29	1·4
				44	Tellicherry	33	1·3
				45	Bellary	62	1·1
				46	Anakapalle	15	1·1
				47	Vaniyambadi	16	1·0
				48	Palni	12	0·9
				49	Gudiyatam	15	0·9
				50	Tirupati	12	0·9
				51	Anantapur	3	0·6
				52	Nellore	14	0·5
				53	Adoni	5	0·2
				54	Masulipatam	1	0·02
				55	Parlakimedi	...	...
Total ...		24,043	0·9	Total ...		5,079	3·5

The rates of mortality from "bowel-complaint" in towns, as is always the case, was much higher than in rural tracts. In Parlakimedi, where there was distress, no deaths from bowel-complaints were recorded notwithstanding the intimate relation there is between defective food-supplies and bowel-complaints. In towns the ratio of bowel-complaint mortality was 3·5 per mille and in the country only 0·9 per mille. In only six towns (Conjeeveram, Cannanore, Tellicherry, Anantapur, Adoni and Masulipatam) was the death-rate lower than in

districts. The highest death-rate (9.5) was recorded at Tuticorin, and this town also stood at the head of the list last year. The lowest death-rate (0.02) was registered at Masulipatam.

INJURIES.

50. 11,506 deaths are recorded under the heading "injuries" during the year under review, giving a death-rate of 0.4 per 1,000. In 1888 the deaths from injuries were 11,401, or 105 less than the deaths registered in 1889, and the death-rate per mille of population was 0.4. There was an increase in the number of deaths from wounds and accidents and persons killed by snakes and wild beasts in 1889 as compared with 1888, but a decrease in the number of suicides. Nearly two-thirds of the total mortality from injuries in 1889 was caused by wounds and accidents. As usual the greater number of suicides were women—1,061 of the cases being men and 1,331 women. As is usually the case the highest death-rates from "injuries" (0.8) was obtained by Nellore and the lowest (0.02) by Nalgiris.

51. The following table shows the deaths from injuries for a series of years:—

Years.	Suicides.	Wounds and accidents.	Snake-bite and killed by wild beasts.	Total.	Years.
1868	602	6,007	2,653	9,242	1868
1869	694	6,057	2,559	9,310	1869
1870	1,438	8,158	2,729	12,325	1870
1871	2,370	9,566	3,387	15,323	1871
1872	2,366	9,668	3,116	15,150	1872
1873	2,077	9,185	2,889	14,251	1873
1874	1,876	8,590	2,899	13,065	1874
1875	1,811	8,057	2,553	12,421	1875
1876	1,715	7,083	2,377	11,175	1876
1877	2,575	11,797	2,088	16,460	1877
1878	2,464	10,554	1,989	15,007	1878
1879	1,926	8,324	2,369	12,619	1879
1880	1,487	6,985	2,373	10,845	1880
1881	1,603	7,532	2,392	11,527	1881
1882	1,644	7,665	2,302	11,611	1882
1883	1,477	7,714	2,318	11,509	1883
1884	1,514	7,498	2,290	11,502	1884
1885	1,573	7,716	2,370	11,659	1885
1886	1,028	9,057	2,418	13,103	1886
1887	1,784	7,339	2,205	11,328	1887
1888	2,483	6,587	2,331	11,401	1888
1889	2,392	6,768	2,346	11,506	1889

ALL OTHER CAUSES.

52. The registered mortality from "all other causes" amounted to 285,220 in 1889 against 272,797 in 1888 and 265,882 the mean of the five years 1884-88. The ratios per mille which these figures bear to population are 10.1, 9.8 and 9.4 respectively. The death-rates under this head during the last nine years were as per margin,

Years.	Ratio per mille of population.	Years.	Ratio per mille of population.
1881	7.2	1886	9.3
1882	7.1	1887	9.8
1883	8.0	1888	9.8
1884	9.1	1889	10.1
1885	9.2		

and it will be seen that the mortality was highest in 1889.

53. The following statement showing the ratios of deaths from cholera, small-pox, fevers and bowel-complaints per mille of population in each circle of registration is given as required by the Government of India—vide G.O., Mis. No. 2366, dated 12th November 1886, Public:—

Districts.	No.	Circles of Registration.	Population for which returns were received.	Ratio per mille of population.			
				Cholera.	Small-pox.	Fevers.	Bowel-complaints.
Ganjam.	1	Chicacole Taluk	146,136	7.3	2.7	17.2	0.1
	2	Berhampore do.	172,122	23.3	5.9	15.2	0.6
	3	Goomsur do.	141,852	14.8	6.4	14.0	0.5
	4	M. T. Chicacole	18,302	7.1	2.9	7.3	4.8
	5	M. T. Berhampore	23,599	23.1	5.1	7.3	4.1
	6	M. T. Parlákimedi	15,365	23.0	0.4	10.9	...
	7	Zemindaries	446,575	12.6	3.8	17.0	0.3
	8	Agency Tracts	13,741	3.3	4.6	13.9	0.3
		Total	977,692	14.2	4.3	16.2	0.5
Vizagapatam.	9	Sarvasiddhi Taluk	119,297	3.4	0.1	15.4	0.2
	10	Narsapatnam do.	89,365	5.2	0.05	18.3	0.4
	11	Anakápalie do.	103,292	1.8	0.2	14.3	0.1
	12	Vizagapatam do.	44,726	1.7	1.1	16.7	0.3
	13	Viravilli do.	137,268	2.1	0.2	14.8	0.08
	14	Bimlipatam do.	88,257	3.5	1.0	13.4	0.2
	15	Srungavarapukottah do.	96,799	8.7	0.1	15.8	0.3
	16	Vizianagram do.	75,378	2.9	0.8	16.8	0.3
	17	Gajapatipur do.	89,337	3.3	0.7	18.9	0.1
	18	Chipurupalle do.	100,734	2.9	0.4	17.8	0.2
	19	Sálfur do.	62,798	13.5	0.6	23.7	0.5
	20	Bobbili do.	99,885	6.9	0.8	18.2	0.09
	21	Pálkonda do.	120,936	9.4	0.5	20.3	0.2
	22	Párvatipur do.	88,024	4.9	1.1	31.7	0.3
	23	M. T. Vizagapatam	30,291	5.2	6.7	7.3	4.8
	24	M. T. Bimlipatam	8,582	2.8	0.1	6.3	4.7
	25	M. T. Vizianagram	22,577	14.6	4.9	8.8	2.5
	26	M. T. Anakápalie	13,341	4.4	1.4	7.4	1.1
		Total	1,390,887	5.0	0.7	17.6	0.4
Godavari.	27	Rámachandrapuram Taluk	220,780	7.3	0.09	10.2	0.4
	28	Amalápuram do.	227,157	2.2	0.09	6.8	0.2
	29	Narsápur do.	200,153	2.6	0.1	2.8	0.2
	30	Bhimavaram do.	108,599	9.7	...	5.1	0.4
	31	Tannuku do.	188,306	7.1	0.02	10.0	0.2
	32	Ellore do.	124,216	2.4	0.1	15.0	0.3
	33	Yernagudem do.	159,364	4.2	0.04	15.5	0.3
	34	Rajahmundry do.	106,641	7.4	0.2	12.2	0.6
	35	Peddápuram do.	124,314	7.5	0.03	14.8	0.5
	36	Bhadráchalam do.	35,656	0.6	0.03	6.6	0.9
	37	M. T. Cocanada	30,441	4.1	0.6	2.4	6.6
	38	M. T. Rajahmundry	24,555	6.1	0.2	10.6	5.9
	39	M. T. Ellore	25,092	8.5	...	5.1	3.3
	40	Zemindaries	216,238	6.3	0.1	10.3	0.4
		Total	1,791,512	5.4	0.1	9.6	0.6
Kistna.	41	Répalle Taluk	184,340	0.8	0.3	4.1	0.1
	42	Bápatla do.	151,736	0.9	0.1	9.7	0.2
	43	Guntúr do.	116,437	4.2	0.6	9.1	0.2
	44	Painád do.	125,799	0.3	0.3	16.1	0.3
	45	Narasaraopet do.	128,791	2.1	0.1	14.1	0.4
	46	Gudiráda do.	99,233	5.1	0.1	3.3	0.2
	47	Sattenapalle do.	110,290	0.7	0.1	12.1	0.2
	48	Masulipatam do.	140,426	1.1	0.3	2.8	0.1
	49	Nandigáma do.	107,288	3.1	0.3	11.4	0.5
	50	Bezváda do.	73,559	7.4	0.2	15.5	0.7
	51	Vinukonda do.	66,977	0.6	0.3	13.7	0.06
	52	M. T. Masulipatam	35,056	0.7	...	3.2	0.02
	53	M. T. Guntúr	19,646	7.5	...	9.2	1.4
	54	M. T. Bezváda	9,386	9.4	2.7	13.1	8.5
	55	Zemindaries	179,566	4.0	0.07	10.4	0.2
		Total	1,548,480	2.4	0.2	9.5	0.3
Nellore.	56	Gúdúr Taluk	99,249	0.01	0.1	6.1	0.5
	57	Rápúr do.	49,774	...	1.3	9.5	1.0
	58	Nellore do.	136,235	0.04	0.1	5.7	0.6
	59	Atmakúr do.	83,911	...	0.6	8.5	0.9
	60	Kávali do.	60,650	4.8	0.1	6.7	0.8
	61	Udayagiri do.	48,048	...	0.6	7.3	0.6
	62	Kandukúr do.	97,113	2.3	0.3	8.1	0.7
	63	Kanigiri do.	50,174	3.2	0.04	8.6	0.7

Districts.	No.	Circles of Registration.	Population for which returns were received.	Ratio per mille of population.			
				Cholera.	Small-pox.	Fever.	Bowel-complaints.
N. Arcot—cont.	178	Arcot Taluk	147,388	4.3	1.1	4.6	0.8
	179	Wárajápet do.	188,790	1.8	0.7	4.7	1.2
	180	M. T. Vellore	40,958	5.5	1.1	6.8	2.8
	181	M. T. Wárajápet	10,387	2.0	2.0	5.5	3.4
	182	M. T. Gndiyátam	16,690	3.4	0.7	4.9	0.9
	183	M. T. Tirupati	13,232	1.7	...	9.3	0.9
	184	Zemindaries	584,596	0.7	0.6	9.8	0.6
		Total ...	1,822,873	2.0	0.9	8.0	0.8
Salem.	185	Salem Taluk	267,547	2.4	1.2	7.6	0.3
	186	Atúr do.	158,554	2.5	0.8	10.9	0.3
	187	Námakal do.	254,577	0.4	1.0	6.7	0.3
	188	Tiruchengód do.	191,328	0.7	1.1	9.2	0.7
	189	Hosúr do.	131,770	0.2	0.5	10.5	0.4
	190	Kistnagiri do.	120,929	0.8	1.0	7.8	0.4
	191	Dharampuri do.	135,826	2.0	0.6	9.0	0.9
	192	Tirupatúr do.	133,070	2.0	0.6	11.3	0.5
	193	Uttankarai do.	109,456	1.2	0.3	14.3	0.6
	194	M. T. Salem	59,631	7.7	0.3	6.0	2.0
	195	M. T. Vániyambádi	15,933	11.1	0.8	7.9	1.0
	196	M. T. Tirupatúr	14,278	11.2	0.5	8.4	3.9
		Total ...	1,592,899	1.8	1.0	9.1	0.6
Coimbatore.	197	Coimbatore Taluk	228,837	2.4	0.6	10.3	0.5
	198	Erode do.	185,805	0.7	0.1	5.4	1.0
	199	Satyamangalam do.	151,313	1.1	0.9	11.3	0.6
	200	Polláchi do.	172,909	3.1	0.1	8.0	1.0
	201	Palladam do.	213,391	0.3	0.5	8.3	1.1
	202	Bhaváni do.	94,123	5.4	1.1	11.1	0.4
	203	Kollegál do.	77,522	0.2	0.1	12.6	1.5
	204	Udamalpet do.	112,572	0.5	0.7	6.6	0.2
	205	Karúr do.	167,950	1.4	0.4	4.3	0.8
	206	Dhárápúram do.	195,242	2.4	0.2	4.2	3.7
	207	M. T. Coimbatore	38,967	1.9	0.5	5.9	3.4
	208	M. T. Erode	9,864	6.5	0.5	3.2	4.6
	209	M. T. Karúr	9,205	2.5	0.1	4.5	...
		Total ...	1,657,690	1.7	0.4	7.8	0.9
Nilgiris.	210	Nilgiri Taluk	46,756	0.08	0.4	12.3	0.3
	211	Wellington Cantonment	1,725	...	...	11.5	2.9
	212	South-East Wynad	25,440	...	0.6	10.3	1.3
	213	M. T. Ootacamund	12,335	0.08	0.1	6.0	5.2
	214	M. T. Coonoor	4,778	1.4	...	7.3	3.5
		Total ...	91,034	0.1	0.4	11.1	1.2
S. Canara.	215	Mangalore Taluk	216,950	0.3	0.2	5.6	1.6
	216	Kásaragód do.	243,881	0.6	0.4	6.6	1.9
	217	Uppinangadi do.	110,367	0.2	0.09	1.1	1.4
	218	Udipi do.	237,432	0.2	0.7	3.09	1.1
	219	Kundapur do.	115,113	0.09	0.2	9.7	2.7
	220	M. T. Mangalore	32,099	0.7	0.03	5.5	5.3
		Total ...	955,842	0.3	0.3	6.2	1.8
Malabar.	221	Chirakal Taluk	246,283	0.6	1.9	8.8	1.4
	222	Kóttayam do.	141,194	...	0.4	9.6	0.7
	223	Kurumbanádo do.	261,024	0.03	0.3	9.4	0.9
	224	Calicut do.	148,877	0.2	0.4	7.8	1.4
	225	Ernádo do.	296,143	0.1	0.1	8.0	2.1
	226	Ponáni do.	392,654	0.2	0.4	3.8	3.2
	227	Walawanád do.	308,102	0.06	0.3	7.7	2.1
	228	Pálghat do.	306,115	0.4	0.2	7.9	0.9
	229	Wynad do.	88,091	...	0.8	16.9	0.5
	230	Cochin do.	1,463	...	...	...	2.0
	231	Anjengo do.	2,534	...	...	1.1	...
	232	Tangachéri do.	1,665	...	...	2.4	...
	233	M. T. Tellicherry	24,581	...	0.08	3.8	1.3
	234	M. T. Calicut	57,085	0.6	1.2	3.1	6.0
	235	M. T. Pálghat	36,339	0.4	...	5.5	1.8
	236	M. T. Cochin	15,698	5.1	...	4.2	3.5
	237	M. T. Cannanore	26,386	...	1.2	2.6	1.5
		Total ...	2,354,234	0.2	0.5	7.6	1.8

NOTE.—In this statement the ratios are worked on the total population, including Europeans and Eurasians.

SECTION IX.

SANITARY WORKS—CIVIL.

MUNICIPALITIES.

54. The number of towns administered by the District Municipalities Act was the same as in 1888, viz., 55.

55. *Sanitary Works.*—Detailed particulars of the sanitary improvements executed during the year in each of the towns are given in the abstracts of the sanitary reports which follow. No new works of any importance were undertaken during the year; but drainage and water-supply schemes have been prepared for some towns and will, it is expected, be begun this year. In Cuddapah the scheme for supplying the town with good and sufficient water from the Bugga springs was in progress and will be completed this year. A good deal of work was however done in the way of repairing and cleansing of tanks and wells, in the sinking of wells, in the repair and construction of latrines, drains, dust-bins, markets, slaughter-houses, &c., and in the improvement of town sites, by filling up hollows and removal of prickly-pear and other rank vegetation.

56. *Water-supply and Drainage.*—Their condition was generally much the same as detailed in former reports as will be seen from the appended abstracts of the sanitary reports received from the several municipalities. The sources of water-supply are chiefly tanks, wells, rivers, canals and irrigation channels. Greater attention is now however being paid to conserve and guard the drinking-water supplies from pollution. Generally speaking there is no regular system of drainage. The drains consist chiefly of side-cuttings for surface drainage only. In a few towns natural drainage is fairly good. In some, masonry drains exist, but they form no part of a regular system, and from faulty construction or bad repair are of little or no use, and in some cases are more a nuisance than a boon. In many towns cess-pools still abound, which form receptacles for the drainage from houses, &c. Generally both the water-supply and drainage of the greater number of towns are far from satisfactory; but in the abstracts of the sanitary reports which follow, it will be seen that schemes for some towns have been prepared. Hitherto the absence of professional engineering advice in devising schemes on a systematic plan and want of funds were great drawbacks towards substantial and permanent improvements in these as well as in other matters connected with sanitation. However, now that a Sanitary Engineer to Government has been appointed specially to give advice to local bodies in devising schemes and forming plans and estimates for the execution of works of a sanitary nature in a complete and systematic manner, the former deficiency will be supplied, and by the powers conferred on Municipal and District Boards by recent legislation for the raising of funds for the execution of local improvements, the latter difficulty can to a great extent be overcome.

57. *Conservancy.*—The system of conservancy pursued in almost all the towns is much the same. The street sweepings, other refuse matters, &c., and contents of dust-bins and latrines are removed daily and carted away outside municipal limits and are either buried or burnt, thrown on the fields, or sold as manure.

58. There were in all 7,743 dust-bins and 948 public latrines maintained in the fifty-five municipalities. The number of dust-bins fell from 8,005 in 1888 to 7,743 in 1889, being less by 262; and this occurred chiefly in Wárajápet, Kumbakónam, Vániyambádi, Salem and Mannárgudi, where the numbers were reduced by 284, 235, 134, 68, and 44 respectively. In many of the towns the number of dust-bins was

increased, the greatest increase (87, 80, 58, 53 and 52) occurring in Rajahmundry, Vizianagram, Vizagapatam, Nellore and Bellary respectively. It is satisfactory to note that on the recommendation of the Sanitary Commissioner the old masonry fixtures are being gradually replaced by moveable corrugated iron or wooden dust-bins. The number of public latrines, though greater by 33 than in 1888, cannot be considered as ample. It represents an accommodation of only 1 to every 1,535 people. There should at least be, as noted by Government, 1 to every 1,000 inhabitants. An adequate latrine accommodation in convenient and judiciously selected sites is a very important element in the conservancy of a town, and where this has been deficient sanitary inspections disclosed that streets, narrow lanes, bye-paths and quiet corners are often resorted to for the purposes of nature to the prejudice of the sanitary condition of the town and public health.

59. Private scavenging was in force in thirty-nine towns, being two more than in 1888. It was newly introduced during the year in Periyakulam and Cuddapah. 17,500 private latrines were scavenged by municipal agency or 1,429 more than in 1888, thus indicating a considerable progress in the system. In twenty-five towns, exclusive of those in which it was newly introduced, the increase ranged from 1 in Berhampore to 406 in Tuticorin. In six there was a retrograde movement in this respect, notably so in Srirangam, Tanjore and Palamcottah, where the numbers fell from 1,995 to 1,648, 1,026 to 819 and from 250 to 100 respectively. The greatest number of private latrines managed under municipal control was in Mangalore 2,387, next in Tuticorin 1,697, then in Srirangam 1,648, Bellary 1,634 and Negapatam 1,055.

60. The following statement shows the conservancy staff employed during the year in the several towns and the number of private latrines scavenged by municipal agency:—

Statement showing the Conservancy Establishment in each Municipality of the Madras Presidency during the year 1889.

Municipalities.	Population as per Census of 1881.	Inspectors.	Supervisors.	Overseers.	Maistries.	Peons.	Sweepers.	Toties for cleaning public latrines.	Toties for private scavenging.	Number of latrines scavenged by the municipality.	Carts.	Latrines.				Dust-bins.	Tank watchers.
												Pucka built.	Brick wall enclosures.	Mud wall enclosures.	Tatty.		
Coonoor	4,778	1	...	...	1	...	18	6	7	111	3	4	5	...	...	45	...
Anantapur	4,907	1	...	...	...	2	16	8	3	125	5	1	4	3	...	63	...
Bimlipatam	8,582	1	...	2	...	2	37	2	...	...	2	2	...	...	...	30	1
Ongole	9,200	1	...	...	...	2	20	4	4	187	3	...	2	3	1	65	1
Karūr	9,205	2	...	...	1	2	25	7	...	...	6	...	3	5	5	58	...
Bezváda	9,336	1	2	...	...	5	34	11	...	...	23	5	...	...	5	79	...
Erode	9,864	1	...	...	...	3	16	10	2	86	16	4	...	9	1	111	1
Wálanjápet	10,387	2	...	...	4	...	12	9	3	93	6	7	...	...	...	569	7
Ootacamund	12,335	2	...	3	5	...	75	11	17	247	25	47	...	...	...	105	...
Tirupati	13,232	1	...	...	1	1	19	...	...	...	8	...	...	...	5	165	1
Palni	13,315	1	...	...	1	4	8	4	...	...	9	...	...	5	...	22	3
Anakápallo	13,341	...	...	1	2	...	25	15	...	...	3	2	...	12	5	61	1
Dindigul	14,182	1	...	1	4	3	12	19	...	...	19	2	...	16	1	49	2
Tirupatūr	14,278	...	...	...	2	...	32	8	...	...	11	...	...	3	2	52	1
Parlákimedi	15,365	2	...	...	...	3	37	2	4	27	4	8	...	...	...	200	2
Cochin	15,698	1	...	4	1	...	21	6	33	260	4	2	...	7	7	4	...
Vániyambádi	15,933	...	...	...	2	...	39	9	...	...	20	...	...	5	3	66	7
Tuticorin	16,281	1	...	...	...	5	16	18	...	1,697	13	...	...	...	10	53	1
Periyakulam	16,446	1	...	...	...	2	8	4	...	200	8	...	...	3	...	73	1

Statement showing the Conservancy Establishment in each Municipality of the Madras Presidency during the year 1889—continued.

Municipalities.	Population as per Census of 1881.	Inspectors.	Supervisors.	Overseers.	Maistries.	Peons.	Sweepers.	Toties for cleaning public latrines.	Toties for private scavenging.	Number of latrines scavenged by the municipality.	Carts.	Latrines.				Dust-bins.	Tank watchers.
												Pucka built.	Brick wall enclosures.	Mud wall enclosures.	Tatty.		
Gudiyátam	16,690	1	...	...	5	...	13	4	1	13	12	2	...	5	...	109	7
Palamcottah	17,964	1	...	...	...	2	7	7	9	100	14	1	4	...	...	98	2
Chicacole	18,302	...	1	...	...	4	38	2	16	146	6	...	4	1	...	25	2
Cuddapah	18,982	4	...	...	...	6	29	28	12	510	16	23	...	3	...	166	1
Mannárgundi	19,409	2	...	...	...	...	20	12	...	...	15	...	2	1	2	46	4
Guntúr	19,646	...	...	5	...	5	36	38	...	...	30	18	...	...	...	48	3
Srirangam	19,773	3	...	...	...	10	11	13	21	1,648	21	...	7	1	3	83	...
Chidambaram	19,387	1	...	...	...	4	...	6	2	47	10	...	1	...	4	301	4
Kurnool	20,329	1	...	...	1	8	36	13	2	66	7	38	...	...	...	255	...
Adóni	22,441	2	...	...	1	4	25	16	13	667	14	6	...	6	...	105	7
Vizianagram	22,577	2	...	5	6	...	76	7	...	...	16	...	24	...	...	125	4
Máyavaram	23,041	3	...	...	...	5	15	14	...	175	23	3	...	...	5	163	5
Tinnevelly	23,221	3	...	1	...	6	36	9	2	60	17	1	6	1	1	117	1
Berhampore	23,599	4	...	3	2	1	77	21	26	521	19	...	5	8	5	120	4
Rajahmundry	24,555	2	...	1	1	11	46	21	33	900	12	7	...	5	6	240	2
Tellicherry	24,581	3	...	1	1	...	20	14	17	325	13	42	...	...	...	30	1
Ellore	25,092	4	...	...	...	...	30	19	...	...	9	...	10	5	2	83	1
Cannanore	26,386	2	...	2	...	2	8	17	6	152	11	18	...	...	...	18	...
Nellore	27,505	2	...	...	6	1	40	25	18	872	17	...	16	...	12	195	...
Vizagapatam	30,291	14	...	...	7	...	108	86	6	130	10	2	48	...	15	238	1
Cocanada	30,441	...	...	2	...	12	42	33	6	94	8	8	...	...	9	...	7
Mangalore	32,099	9	...	...	...	...	21	2	29	2,387	5	5	...	...	...	88	...
Masulipatam	35,056	20	...	...	...	...	50	...	8	221	25	13	...	...	...	...	1
Pálghat	36,339	2	...	...	1	2	30	13	8	165	16	1	5	...	4	79	...
Conjeeveram	37,275	4	...	...	...	...	40	5	2	139	22	1	9	...	...	389	3
Coimbatore	38,967	3	...	1	2	5	78	28	...	...	30	17	8	6	3	124	1
Vellore	40,958	6	...	...	...	9	31	42	8	233	42	21	4	...	...	480	6
Cuddalore	43,545	6	...	...	...	6	43	21	3	50	25	12	...	...	6	274	3
Kumbakónam	50,098	6	...	...	...	7	45	15	19	357	36	...	18	...	1	221	6
Bellary	53,460	7	...	1	2	19	66	16	57	1,634	62	11	...	10	...	340	4
Negapatam	53,776	5	...	...	1	12	96	15	81	1,055	41	...	15	...	...	592	9
Tanjore	54,745	6	...	1	6	24	80	35	20	819	66	...	28	...	...	206	11
Calicut	57,085	1	...	1	9	...	48	17	19	546	17	11	...	...	...	...	2
Salem	59,631	3	...	...	11	...	148	55	12	435	52	8	13	21	3	140	1
Madura	76,847	2	...	1	10	11	87	31	...	...	67	6	...	...	2	84	...
Trichinopoly	84,449	8	...	2	1	16	46	109	...	...	106	2	15	57	2	291	21
Total	1,455,660	162	3	38	97	226	2,092	962	529	17,500	1,100	361	256	201	130	7,743	153

ABSTRACT OF SANITARY REPORTS OF MUNICIPALITIES.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Anantapur.	9	545	Night-soil pits were dug (Rs. 39) and wells were cleaned. A cholera-shed was constructed (Rs. 20); moveable dust-bins were purchased and latrines repaired (Rs. 207). Slaughter-house, latrines and drain were repaired (Rs. 35); Rs. 120 spent on water-supply project and a mud-wall latrine made pukka.	Obtained from a tank and 11 wells. Fairly good. Some wells are not properly conserved and are in close vicinity to cess-pools.	No improvement since last report. No regular system. The larger streets have side-cuttings. Cess-pools abound.	System same as last reported. Sweepings, &c., are stored in dépôts and night-soil buried. There are 8 public latrines; kept fairly clean and freely resorted to. Private scavenging is in force.	On the whole fairly good.
Adoni.	2	11,221	Is obtained from the fort ditch. Mainwaring's tank and wells. The feeding channel of the fort ditch being an open one, is liable to pollution.	Same as last reported. Obtained from wells and springs. Insufficient. Endeavours are being made to bring into the town a wholesome and sufficient supply of drinking water.	No regular system. Such drains that exist are of little use. Cess-pools abound.	System same as last reported. Some of the smaller streets and lanes require attention. The street sweepings, &c., are now collected by municipal agency as recommended by the Sanitary Commissioner and not by contractors. There are 12 public latrines, 5 urinals and 106 dust-bins. Sweepings and night-soil are used as manure. Private scavenging is in force.	Fair.
Bellary.	26	2,066	Markets, slaughter-sheds and latrines were repaired (Rs. 375) and moveable dust-bins purchased (Rs. 503).	Is obtained from the fort ditch. Mainwaring's tank and wells. The feeding channel of the fort ditch being an open one, is liable to pollution.	No improvement since last report. No regular system. In certain parts of the town surface drains exist. Drainage of houses defective. Cess-pools are numerous, but are daily emptied by municipal agency on payment.	System same as last reported. No improvement in the disposal of street sweepings, &c. There are 21 public latrines—11 pucks built and 10 simple walled enclosures; the former not well attended to. More latrines on approved plans are required. Private scavenging is successfully carried on.	Unsatisfactory.
Conjeveram.	4	9,319	The Lalakal channel was deepened and cleaned (Rs. 14); 3 new wells for drinking purposes were sunk (Rs. 253); and Rs. 290 were spent in erecting a temporary sundry bazaar, in purchasing 13 iron moveable dust-bins, and cutting surface drains.	Unsatisfactory. Obtained from tanks, wells, the river and Lalakal channel. Three tanks are watched, one of which is fed by an open channel liable to all sorts of pollution.	Defective. No improvement since last report. Some streets have side-cuttings.	System same as last reported. Sweepings, &c., are collected, stored in dépôts and periodically sold as manure. There are 10 public latrines. Most people resort to streets, fields and river or waste lands, and pigs are the chief scavengers. The night-soil dépôt is on the bank of the river, a most unsuitable spot. Private scavenging is in force.	Unsatisfactory. Cholera, small-pox, fevers and bowel-complaints prevailed largely.
Combaratore.	3	12,989	Several wells and tanks were repaired and cleaned (Rs. 1,986) and latrines, dust-bins and drains were repaired (Rs. 1,099).	Unsatisfactory. Sources same as last reported. Subject to much pollution.	In the same defective and unsatisfactory condition as last reported.	System same as last reported. Dust-bins exist in nearly all streets. There are 34 latrines; but many streets and lanes are used for purposes of nature.	Indifferent. Cholera prevailed about the middle of the year.

Brode.	11	897	A new well was sunk (Rs. 20); others repaired and deepened (Rs. 54); slaughter-house and market-sheds were repaired (Rs. 16); a bandy-pettah was constructed (Rs. 443); dust-bins were purchased (Rs. 324) and others repaired (Rs. 50); a latrine was repaired (Rs. 43); and prickly-pears removed (Rs. 30). A spring was dug in the river bed (Rs. 28); 2 wells were repaired and cleaned (Rs. 26); and dust-bins purchased (Rs. 85).	From river channel, wells and tanks.	Defective. Numerous cess-pools exist, but are only occasionally cleaned.	No change in system since last report. The sweepings, &c., are collected and either burnt or stored in dépôts for sale. Night-soil is buried. There are 14 latrines. The smaller streets and lanes were neglected and many used as latrines.	On the whole fairly good.
Kardar.	1	9,205	Latrines were constructed (Rs. 222) and the Bugga drinking water-supply project was in progress. Rs. 56,370 were spent on it during the year.	Is obtained from the river and public and private wells in the bed of the river during the hot weather. River water good; that from wells brackish.	Defective. No improvement since last report.	Sweepings, &c., from streets and houses and contents of dust-bins were carted away to dépôts and either burnt or sold as manure. There are 58 dust-bins and 13 latrines of various kinds. Night-soil was removed outside the town and buried.	Fairly good.
Cuddapah.	4	989	Latrines were constructed (Rs. 222) and the Bugga drinking water-supply project was in progress. Rs. 56,370 were spent on it during the year.	Unsatisfactory. Obtained from the Bugga river and public and private wells. A new supply of good quality will shortly be opened.	Unsatisfactory. No regular system. Side channels defective. Cess-pools abound, which are seldom or never cleaned out.	Street sweepings, &c., and contents of latrines were daily removed and buried outside the town. There are 26 latrines of different patterns. They are freely resorted to.	Unsatisfactory. Cholera prevailed epidemically.
Berhampur.	3	5,899	Rs. 188 were spent in improvements to water-supply and Rs. 660 in the construction and repair of latrines, slaughter-houses, markets, drains, dust-bins and cinerators.	No improvement since last report. Unsatisfactory. Obtained from wells and tanks. Subject to pollution. Only 2 tanks are guarded from pollution.	Defective and very unsatisfactory. No regular system. Sewage from houses flow into cess-pools, of which there are 190, and which are only occasionally emptied.	No change in system since last report. Sweepings, refuse matters, &c., from streets and houses were collected and carted away to dépôts outside of the town and burnt. There are 5 pucks and 8 mud wall and 5 moveable latrines. The mud-wall ones are in a dilapidated condition. Private scavenging is in force.	Very unsatisfactory. Famine prevailed with its concomitant diseases.
Chiticolle.	3	6,101	Rs. 306 were spent in removing silt from and cleaning tanks and wells; latrines and wooden urinals were constructed (Rs. 253) and market repaired (Rs. 6).	Is obtained from the river, wells and 3 conserved tanks. River subject to much pollution.	Unsatisfactory. A scheme for drainage is under consideration. Sewage from houses flows into side channels or cess-pools.	Defective. No change in system since last report. The sweepings and refuse matters were carted away to dépôts and either burnt or sold as manure. There are latrines, the contents of which were removed to a distance and buried. Private scavenging is in force.	Unsatisfactory. Cholera and small-pox prevailed.
Pariki-medi.	3	5,122	Tanks and wells were cleaned (Rs. 40); 3 new wells were sunk (Rs. 499); latrines were erected (Rs. 120); new drains were constructed (Rs. 252), and some of the existing ones repaired (Rs. 185).	From wells and tanks	Natural. Good rough-stone drains were built in some of the streets since last report.	The sweepings, &c., were burnt and carried away to dépôts and sold as manure. There are 8 public latrines. Private scavenging is in force.	Unsatisfactory. Cholera and small-pox prevailed.

ABSTRACT OF SANITARY REPORTS OF MUNICIPALITIES—continued.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Cochin.	5	6,088	Certain streets were improved (Rs. 268) and prickly-pears removed (Rs. 41). Rs. 3,070 were spent in improvements to water-supply. Markets, latrines and culverts were repaired (Rs. 165); side drains were cut (Rs. 514); and latrines constructed (Rs. 138). Parapet walls and drains were constructed to certain wells (Rs. 55) and petty repairs to wells, tanks and parapet walls were made (Rs. 50). A slaughter-house was constructed (Rs. 130) and Rs. 468 were spent in excavating side drains, in erecting and repairing latrines and other sanitary works. Tanks and wells were cleaned and deepened (Rs. 156); platform to well was constructed (Rs. 55); a well was sunk (Rs. 146); a slaughter-house was built (Rs. 288); 4 tatty latrines were erected and others repaired (Rs. 42); 11 dust-bins (Rs. 80) and a drain (Rs. 100) were constructed and some minor works executed. Eight wells and 3 cattle troughs were constructed (Rs. 2,240); the black and red tanks were deepened (Rs. 219); reservoirs were cleaned (Rs. 676); a tank for dhobies was constructed (Rs. 570); and latrines repaired (Rs. 70).	Unsatisfactory. Is brought from the canal by open channels to the town and stored in tanks and reservoirs and distributed in different parts of the town. Is subjected to much pollution. Two wells and tanks are reserved for drinking purposes only.	No improvement since last report. No regular system.	No change in system since last report. Was attended to by an establishment maintained for the purpose. Sweepings, &c., were used in filling up hollow places. There are 17 latrines—8 pukka and 9 of tatty—insufficient in number. Night-soil is partly buried in a garden and partly thrown in the swamp, both not far from the town. Private scavenging is in force.	Cholera prevailed in the beginning of the year.
Kilore.	9	2,788	Very unsatisfactory. Is obtained from the canal, a river, a tank and wells. Subject to much pollution.	Indifferent. No improvement since last report.	Street sweepings, &c., are removed daily to depôts outside of the town. There are 17 latrines—10 of brick walls, 5 of mud and 2 of tatty. They are freely resorted to.	Unsatisfactory. Cholera prevailed from February to August.	
Rajahmundry.	12	2,046	Is obtained from the river Godavari. Subject to much pollution. A tank and 8 wells are reserved for drinking only.	Defective. No improvement since last report. A drainage scheme is under consideration.	The town was swept daily and the sweepings, &c., carried away and burnt in cinerators. There are 18 public latrines, which are freely resorted to. Private scavenging is in force.	Unsatisfactory. Cholera prevailed.	
Guntur.	13	1,511	Obtained from tanks and numerous wells.	No regular system. A complete drainage scheme is in contemplation.	The sweepings, refuse matters, &c., and night-soil are removed outside of the town, where the former are stored and sold as manure and the latter buried. There are 18 public latrines freely resorted to, but they were not clean nor kept in good repair.	Unsatisfactory.	

Masulipatam.	4	8,764	Conduits were constructed (Rs. 1,438); tanks and wells were cleaned (Rs. 30); reservoirs, conduits and drains repaired (Rs. 1,270); prickly-pear was removed (Rs. 505); market and slaughter-houses repaired (Rs. 666); zinc latrines were constructed (Rs. 23); and hollow places filled up (Rs. 162). A channel was repaired (Rs. 80); wells were sunk (Rs. 746); a drain was cut (Rs. 44); dust-bins were purchased and put up (Rs. 255); a corrugated iron latrine was erected (Rs. 290); and water-casks for removing cess-pool water made (Rs. 105). Silt was removed from water channels (Rs. 47) and a latrine and drains were constructed (Rs. 32).	From the Krishna canal, brought into the town by an open channel and conducted into reservoirs in different parts by masonry or earthen pipes. Endeavours are being made to improve the water-supply.	No regular system. Side-cuttings exist. Sewage from houses flows into the streets and cess-pools.	The street sweepings, &c., are removed daily outside the town, where they are stored and burnt once a week. There are 8 pukka latrines and 5 zinc ones kept in a fairly good condition. Private scavenging is in force.	Was satisfactory.
Beavada.	4	2,334	Unsatisfactory. Is obtained from the Krishna and its canals and from public and private wells. Endeavours are being made to improve the supply.	Defective. No regular system. House sewage flows into the streets or cess-pools.	Street sweepings and refuse from houses are sold by auction and carted away by the purchasers to their fields. Night-soil and cess-pool water are removed to the north of the town and buried. There are 10 latrines—5 pukka and 5 temporary—but they are not freely used.	Unsatisfactory. Cholera prevailed from February to April.	
Kurnool.	5	4,066	Unsatisfactory. From the canal, brought into the town unfiltered.	Same as last reported. Unsatisfactory.	The refuse sweepings, &c., are carted away and deposited on a specially selected spot and the night-soil buried on right bank of the river Hindry; both are periodically sold as manure. There are 255 dust-bins and 38 latrines. Private scavenging is in force.	On the whole fairly good.	
Dindigul.	2	7,091	Obtained from tanks and wells. Unsatisfactory and insufficient. The council is most anxious to obtain a good and sufficient drinking water-supply for the town, and a scheme will be prepared when the source of supply is decided upon.	Same as last reported. Some drains exist, but on no regular system.	Well attended to. The sweepings, refuse, &c., are removed to depôts outside the town and sold as manure. There are 49 dust-bins and 19 public latrines. Night-soil is removed to depôts and buried.	On the whole satisfactory. At the end of the year cholera broke out in a mild form.	
Madura.	13	5,911	Sources same as last reported. No improvement. A scheme has been prepared and will be taken in hand this year.	Very unsatisfactory both of streets and houses. L and V shaped drains exist, but are kept in a very insanitary condition.	Very unsatisfactory and the sanitary condition of town very bad. No improvement since last report. There are 84 dust-bins and only 6 pukka built and 2 temporary latrines, which are quite inadequate, and consequently streets and lanes are used as latrines.	Unsatisfactory. Cholera prevailed epidemically.	
Pulni.	7	1,908	Unsatisfactory. Is obtained from a tank fed by a channel and subject to much pollution and from wells, most of which have no platforms.	Unsatisfactory. No regular system. Side-drains exist.	Indifferent. In the backyards, &c., rubbish was allowed to accumulate. Street sweepings, refuse matters, &c., were collected and stored in depôts; eventually to be sold as manure. There are 3 double and 2 single latrines, all mud wall enclosures. They were kept in good condition.	Was fairly good.	

ABSTRACT OF SANITARY REPORTS OF MUNICIPALITIES—continued.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Pertum.	27	609	Some roads were repaired and land purchased for widening a road (Rs. 114); a slaughter-house was constructed (Rs. 35); 5 corrugated iron latrines were purchased (Rs. 87); drains were repaired (Rs. 25), and a piece of land for latrines was purchased (Rs. 500). Nothing of importance. A market and beef and fish stalls were repaired (Rs. 100).	No improvement since last report. Is obtained chiefly from the river Varahanadi, which is polluted in every possible way. Burning and burial grounds in its bed and on its banks still exist. There are also 9 public wells used for drinking purposes, of which only 4 have parapet walls, drains and platforms. Obtained principally from wells. There is also a fine tank strictly reserved for drinking purposes. The numerous shallow private wells are subject to much pollution from their filthy surroundings.	No regular system. Side-cuttings exist. A few cess-pools exist, but not kept in good condition.	Fair. The street sweepings and other refuse matters were carted away to dépôts at a little distance from the town and sold as manure. There are 73 dust-bins and 3 public latrines. Two more are under construction. Night-soil is removed in baskets and buried away from houses.	Was unsatisfactory. Cholera prevailed.
Calicut.	13	4,391	Several roads were repaired (Rs. 1,001). A well was sunk (Rs. 302), and slaughter-house, market and travellers' bungalow were repaired (Rs. 83). A swamp was reclaimed (Rs. 6,650); latrines and drains were repaired (Rs. 88); and some other minor works executed (Rs. 28).	Sources same as last reported—wells.	Same as last reported. Side-cuttings exist in some streets and masonry drains in others, but no regular system.	Fairly well attended to. The sweepings, rubbish, &c., and night-soil are collected and used in the jail garden as manure. There are 6 pukka built and 5 sentry-box latrines, which are freely resorted to: more are required. There are no dust-bins: some should be provided.	Reported to have been favorable on the whole.
Cannanore.	4	6,596	Several roads were repaired (Rs. 1,001). A well was sunk (Rs. 302), and slaughter-house, market and travellers' bungalow were repaired (Rs. 83). A swamp was reclaimed (Rs. 6,650); latrines and drains were repaired (Rs. 88); and some other minor works executed (Rs. 28).	Sources same as last reported—wells.	Un satisfactory. No regular system. Cess-pools abound.	Fair. Sweepings, refuse matters, &c., are carted away and buried. There are 18 dust-bins and 19 public latrines, 7 of which are sentry-box ones, but they are not freely resorted to by the people. Private scavenging is in force.	Fairly good. Small-pox prevailed in early part of the year.
Cochin.	1	15,698	Crawford's privies were erected (Rs. 145); dust-bins were purchased and repaired (Rs. 184); latrines were thatched and repaired (Rs. 83); culverts to bridges were constructed and repairs to tank fences executed (Rs. 622); and latrines erected during festivals (Rs. 58).	Un satisfactory. Is chiefly obtained from tanks or pools in private compounds subject to all kinds of impurities and from wells often brackish. Rain water stored in iron tanks is also used and the richer people get their water from the river Alwaye, a distance of 6 miles from Cochin.	Un satisfactory. No regular system.	Fair. Street sweepings, rubbish, &c., are partly carted away to a distance and burnt and partly sold. There are 16 latrines of various kinds, 5 urinals and 4 dust-bins. The latrines are freely resorted to. Private scavenging is in force.	Un satisfactory.
Palghat.	9	4,038		Sources same as last reported—rivers, tanks and wells. Tanks used only for bathing purposes.	No regular system. In some places side-cuttings exist.	On the whole fairly well attended to. In parts, however, the lanes and corners are used as latrines. The sweepings, refuse, &c., are collected and removed to 6 dépôts and annually sold by auction. There are 79 dust-bins and 10 latrines in good condition and freely resorted to. Private scavenging is in force.	Was on the whole fairly good. Cholera broke out towards the close of the year.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Tellicherry.	4	6,145	A market was repaired (Rs. 8,071) and repairs executed to drains, latrines and hospital (Rs. 943).	Fairly good and abundant. Obtained from wells and a tank.	Natural. No regular system. Side-cuttings exist.	Fair. Street sweepings, refuse matters, &c., are carted away to a distance and burnt. There are 10 public latrines built of laterite and 32 sentry-box ones. All are freely resorted to. Night-soil is carted away and buried.	Fairly good.
Nellore.	25	1,100	Tatty latrines were constructed (Rs. 73); drains and wells were repaired (Rs. 317); prickly-pear removed (Rs. 605); and 45 dust-bins purchased (Rs. 195).	Un satisfactory. Is obtained from irrigation channel, tanks and wells. All as a rule subject to pollution in every possible way.	Defective. No regular system. Cess-pools are numerous. Some drains that exist are kept in a foul condition.	Sanitary condition of town and backyards of houses, &c., very unsatisfactory. Sweepings, &c., are carted away outside of the town and annually sold. There are 28 public latrines: more are required. Private scavenging is in force.	Was fairly good.
Ongole.	4	2,300	Prickly-pear was removed (Rs. 103); three wells were sunk (Rs. 290); and some tanks and wells were repaired and cleaned (Rs. 313).	Is obtained from a tank and 7 wells subject to pollution.	No regular system. Principally side-cuttings. Some streets have stone drains.	Indifferent. Sanitary condition of town, compounds of houses, &c., very unsatisfactory. Sweepings, refuse, &c., are taken outside of the town, stored and sold annually. There are 6 public latrines. Private scavenging is in force.	Fair.
Coonoor.	9	531	Snices, markets, channels and drains were repaired (Rs. 552); cisterns and slaughter-houses were constructed and repaired (Rs. 1,115); and dust-bins purchased (Rs. 53).	Un satisfactory. Is brought into the town, from a source 3 or 4 miles off, by open channels subject to much pollution. It is in contemplation to improve the supply.	Un satisfactory. A regular drainage scheme has been drawn up, and as soon as funds permit, it will be taken on hand.	Was well attended to and much improved since last report. Sweepings, refuse matter, night-soil, &c., are collected in dépôts, mixed together and sold to planters as manure. There are 9 public latrines. They were kept as clean as they possibly could be. Private scavenging is in force.	Fairly good.
Votacamund.	11	1,121	Rs. 600 were spent on improvements to water-supply. Markets and slaughter-houses were repaired and renovated (Rs. 1,294) and latrines repaired (Rs. 120).	Is obtained from the Marimund reservoir, brought through iron pipes to the town and from Dodabetta brought by an open channel, which is subject to much pollution. Wells are also used for drinking purposes, some of which are protected from pollution, but many are not.	No change since last report. Drains are constructed in the bazaar, but they are defective and unsatisfactory. A drainage scheme for Kandal, a part of Ooty, has been prepared, but want of funds prevents its being begun at present.	The sweepings, rubbish, &c., are collected and the greater portion buried. The offensive matter is used to fill up hollows and pits. There are 19 latrines, the contents of which are buried. They are freely resorted to. Private scavenging is in force.	Was fairly good. No epidemics.
Gudalur.	1	16,690	Rs. 174 were spent on water-supply; Rs. 25 on sanitary arrangements during fairs and festivals and Rs. 818 on other sanitary objects.	Un satisfactory. Is obtained from springs in the river, a tank and wells, all subject to much pollution.	Defective. Side channels exist.	Indifferent. Sweepings, refuse, &c., are sold and carted to fields. There are only 7 public latrines; they are freely resorted to.	Fairly good.
Tirupati.			Dust-bins were purchased (Rs. 154) and moveable tatty latrines constructed (Rs. 200).	Un satisfactory. Obtained from tanks and wells reserved for drinking purposes and guarded. There are also a few private wells.	Indifferent. 17 streets are provided with drains, but they are badly laid. Smaller streets and lanes have no drains. Drainage from houses flows into street-drains. Cess-pools are numerous.	Rubbish, sweepings, &c., are collected and carted away by contractors to their fields. There are 5 portable tatty latrines. Pigs do the work of scavengers.	Fair.

ABSTRACT OF SANITARY REPORTS OF MUNICIPALITIES—continued.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Vellore.	4	10,239	A well was sunk (Rs. 38); some silt was removed (Rs. 20); markets, slaughter-houses, roads and latrines were repaired (Rs. 4,550); a road dam was erected (Rs. 2,348); some streets were widened (Rs. 70); and Rs. 1,314 were spent on account of drainage.	Obtained from wells, tanks, streams and the river. Unsatisfactory. Burial grounds are in dangerous proximity to some of the sources.	Natural. Most of the main streets have masonry drains of some sort. A new drainage scheme has been prepared. Cess-pools are numerous and rarely cleaned.	Fair. On the contract system. There are no rubbish or night-soil depôts. The contractor removes the sweepings, &c., of streets, and contents of latrines and carts them straight away to the fields. Private scavenging is in force. 25 public latrines freely resorted to.	Was fairly satisfactory, except at the early and latter part of the year, when some cholera prevailed.
Walajapet.	1	10,387	V-shaped drains were constructed (Rs. 58); a burning ground (Rs. 24) and market and slaughter-house (Rs. 17) were repaired and steps built to a tank (Rs. 75).	Fairly satisfactory. Obtained from 6 wells and 6 tanks. Reserved for drinking only.	No change since last report. Masonry drains of various patterns exist in the main streets, but they are no part of any scheme.	Was fairly well attended to. The sweepings, &c., are removed to the outskirts, there stored and sold as manure. Night-soil is removed to suitable depôts and buried. There are 7 latrines and 2 urinals. Private scavenging is in force.	Was on the whole fairly good.
Balem.	6	9,938	Certain wells were repaired (Rs. 193); compound walls to slaughter-house and municipal water-shed were built (Rs. 750); a zinc latrine was constructed (Rs. 316); and the cistern and latrines were repaired (Rs. 190).	Is obtained from the river, a tank and numerous wells, all subject to much pollution. Is unsatisfactory in quality and some times deficient in quantity. A water-supply scheme has been prepared and is under consideration.	Natural. There is no regular system. Some masonry U and V shaped drains exist, but they are badly constructed and badly kept. A drainage scheme is to be prepared for the town.	Is on the contract system. Fair. The sweepings, &c., are removed to three newly established rubbish depôts. There are 45 latrines of various kinds. Night-soil is removed to depôts. Private scavenging is in force.	Was fairly good, but cholera prevailed to some extent.
Tirupatūr.	4	3,569	Nil	Sources same as last reported—wells and a tank; the supply channel to the tank being open, is liable to cause pollution of the water.	No system. Defective. House drains open into streets and sewage soaks into the soil or forms stagnant pools. Cess-pools are numerous and seldom cleaned. The municipality intend having cess-pools constructed on approved plans and daily emptied.	Well attended to. Is partly on contract and partly by municipal agency. There are 3 mud wall and 2 tatty latrines. More latrines at convenient places are required.	With the exception of a severe outbreak of cholera at the end of the year, public health was generally good.
Vaniyambadi.	1	15,933	Rubbish and night-soil carts were built (Rs. 423), and some old ones repaired (Rs. 22).	Obtained from 4 wells and the river, which is subject to pollution. Endeavours are being made to improve the supply.	No regular system. Surface drains exist to carry off storm water. House drains lead into the streets and sewage soaks into the soil.	Sweepings, rubbish, &c., were collected in dust-bins and removed to selected depôts within municipal limits. There are 5 mud wall and 3 tatty latrines, the contents of which are removed out-side of the town.	With the exception of the prevalence of cholera and small-pox, public health was on the whole fairly good.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Chidambaram.	6	3,806	Nil	Unsatisfactory. Is obtained from tanks and wells in the temple.	Bad. No regular system. Cess-pools are common.	The sweepings, refuse matters, &c., are collected and removed to depôts outside the town and sold as manure. There are 5 public latrines, of which 4 are tatty enclosures. They are not much used. People mostly resort to fields. No improvement since last report. The sweepings, &c., are sold annually, the refuse being deposited in the fields of the purchasers. There are 12 pucks and 6 tatty latrines.	Was on the whole fairly good.
Cuddalore.	11	3,959	Tanks and wells were constructed and repaired (Rs. 1,458), and latrines repaired (Rs. 179).	Is obtained from rivers, wells, Mount Capper and a tank.	Indifferent. No regular system. Some old-fashioned masonry drains exist which are in bad repair. Most streets have not even side-cuttings.	No improvement since last report. The sweepings, &c., are sold annually, the refuse being deposited in the fields of the purchasers. There are 12 pucks and 6 tatty latrines.	Fairly satisfactory.
Kumbakonam.	3	16,699	Wells were cleaned (Rs. 13), and markets improved (Rs. 537). Rs. 1,780 were spent in the construction and repair of side-drains and purchase and repair of night-soil carts. A road was opened out (Rs. 1,277) and tunnels and drains constructed (Rs. 501). Six wells (Rs. 306), two latrines (Rs. 254) and a drain (Rs. 48) were constructed. Drainage channels were cleaned and repaired (Rs. 966) and Rs. 3,693 were spent in repairs to roads, markets, slaughter-houses, latrines, dust-bins, &c.	Is obtained from wells and tank. Fairly good in quality and sufficient in quantity.	Same as last reported. Fairly good.	Was well attended to. Sweepings, refuse, &c., are collected and removed to a depôt two miles from the town where they are incinerated and the residue mixed with the night-soil is sold as manure. There are 88 dust-bins and 5 public latrines, which are freely resorted to. Private scavenging is in force.	Was on the whole fairly good.
Mannargudi.	4	4,852	Several roads were repaired (Rs. 2,981); tanks and wells were cleaned and repaired (Rs. 1,755); markets repaired (Rs. 70) and dust-bins purchased (Rs. 70).	Defective. Is obtained from the river, tanks and wells.	No change since last report. No regular system. Cess-pools are numerous, but kept very clean.	The sweepings, &c., are carted away to depôts where they are burnt and sold as manure. There are 5 public latrines. The people generally resort to fields for the purpose of nature.	Fair.
Mayavaram.	3	7,681	A market shed (Rs. 87) and several roads were repaired (Rs. 1,402).	Is obtained from the river, tanks and wells. Sufficient in quantity, but unsatisfactory as regards quality.	No improvement since last report. No regular system. Four streets are provided with masonry drains, but they form no part of a scheme. Cess-pools abound.	Main streets were kept fairly clean, but the smaller ones require attention, as they are greatly used as latrines. The sweepings, refuse, &c., are collected and removed to 3 depôts outside the town, where they are burnt and sold as manure. There are 8 public latrines, but the people mostly resort to fields and topes.	Was fairly good.
Norapattanam.	7	7,682	Rs. 3,360 were spent in improvements to water-supply; markets and slaughter-houses were repaired (Rs. 172); two dust-bins were constructed (Rs. 28) and latrines, dust-bins, &c., were removed.	Unsatisfactory. Is obtained from tanks and wells, and during monsoon from rivers. A water-supply scheme is under consideration.	Unsatisfactory. No improvement since last report. No regular system. A scheme for the drainage of the entire town is under consideration. Cess-pools are numerous and kept in a very unsanitary condition.	The sweepings, rubbish, &c., are carted away to depôts outside the town, where they are burnt. There are 592 dust-bins and 15 latrines. The people prefer to resort to fields and sea beach. Private scavenging is in force.	Cholera prevailed throughout the year in the town.

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ABSTRACT OF SANITARY REPORTS OF MUNICIPALITIES—continued.

Municipalities.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Tanjore.	8	6,843	Ra. 1,106 were spent in repairing certain roads and constructing a new road and 2 tunnels; Ra. 950 were spent in improvements to water-supply consisting in the sinking of a new well and repairing and cleaning wells and tanks, &c.; markets, slaughter-houses, latrines and drains were repaired and otherwise improved (Rs. 3,915). Roads and streets were repaired (Rs. 929); a reservoir was improved (Rs. 250) and markets, pandals, slaughter-house and latrines were repaired (Rs. 145).	Unsatisfactory and defective. Obtained from tanks, wells and channels subject to much pollution. A scheme for supplying the town with a sufficient and good supply of drinking water is under consideration.	Unsatisfactory. The drains in the fort however have been much improved since last report. These empty in three drains which discharge their contents either into the northern portion of the fort ditch or into the river. Cess-pools, kept in an insanitary condition, abound.	Fairly well attended to. On the contract system. The sweepings, refuse, night-soil, &c., are removed by contractors to their fields and used as manure. There are 206 dust-bins and 28 latrines. Simple enclosures. Number insufficient. People resort to corners of roads, waste lands, &c., in consequence. Private scavenging is in force.	Was fairly good except in the beginning of the year when cholera prevailed.
Palamcottah.	3	5,988	Roads and streets were repaired (Rs. 929); a reservoir was improved (Rs. 250) and markets, pandals, slaughter-house and latrines were repaired (Rs. 145).	No improvement since last report. Still unsatisfactory in quality and quantity. Sources subject to much pollution.	Same as last reported. No regular system. Most of the streets have side-cuttings.	Fair. The sweepings, refuse, &c., are collected and burnt, the residue being mixed with night-soil and disposed of as manure. There are only 5 public latrines and 98 dust-bins. Private scavenging is in force.	Fairly good except in the beginning of the year when cholera prevailed.
Tinnevely.	1	23,221	Channels and wells were cleaned (Rs. 108); drains to 2 streets were constructed (Rs. 252); and in 2 others repaired (Rs. 133). A new road was made (Rs. 805); and others repaired (Rs. 2,032); hollows were filled up (Rs. 44); and a channel repaired (Rs. 352); Ra. 1,450 were spent in improvements to water-supply; latrines were repaired (Rs. 55); and a new one constructed (Rs. 150) and dust-bins were repaired and purchased (Rs. 108).	Very unsatisfactory. Sources same as last reported and polluted in every possible way. A water-supply scheme for the town is under consideration.	Same as last reported. Defective. Drains exist in some streets, but they form no part of a regular system.	Fair in the main streets, but the smaller ones and lanes are neglected. Sweepings, rubbish, &c., are removed to a distance from the town and burnt and the ashes mixed with night-soil sold as manure. There are 9 public latrines and 117 dust-bins. Private scavenging is in force.	Cholera prevailed about the beginning of the year.
Tuticorin.	3	5,427	Unsatisfactory and inadequate. Sources the same as last year, viz., a tank and wells, both subject to pollution. Sanction has been given to try if an artesian well will be successful in this town.	Still defective. No regular system.	Fair in the main streets, but the smaller streets and lanes seem to be used as latrines. Sweepings, rubbish, &c., are collected and either burnt or used to fill hollows. Ashes are mixed with the night-soil, then buried and eventually sold as manure. There are 10 latrines and 53 dust-bins. Private scavenging is in force.	Fair in the main streets, but the smaller streets and lanes seem to be used as latrines. Sweepings, rubbish, &c., are collected and either burnt or used to fill hollows. Ashes are mixed with the night-soil, then buried and eventually sold as manure. There are 10 latrines and 53 dust-bins. Private scavenging is in force.	Was unsatisfactory. Cholera prevailed.

Srirangam.	7	2,825	A well was sunk (Rs. 135); 3 straw markets were constructed (Rs. 140), and a butcher's stall repaired (Rs. 60); temporary latrines were constructed (Rs. 14), and old ones repaired (Rs. 6) and Ra. 290 were spent on tunnel works. Ra. 652 were spent in removing silt and constructing steps to a tank, repairing another and supplying shutters to a bridge; and (Rs. 1,285) in repairing markets and slaughter-houses; certain drains were constructed (Rs. 705), and latrines repaired (Rs. 354). A tank, latrines, drains, &c., were repaired (Rs. 200).	Same as last reported. Unsatisfactory.	Unsatisfactory. No improvement since last report. No regular system. There are some large cess-pools, which are only rarely emptied.	Fair on the whole. The street sweepings, rubbish, &c., are sold and the purchasers remove them to their fields. There are 83 dust-bins and 11 public latrines. Night-soil from these and private houses is buried at a distance from the town. Private scavenging is in force.	Was good.
Trichinopoly.	10	8,445	Ra. 652 were spent in removing silt and constructing steps to a tank, repairing another and supplying shutters to a bridge; and (Rs. 1,285) in repairing markets and slaughter-houses; certain drains were constructed (Rs. 705), and latrines repaired (Rs. 354). A tank, latrines, drains, &c., were repaired (Rs. 200).	Very unsatisfactory. No improvement since last report. A scheme has been prepared and will shortly be taken in hand.	No improvement since last report. No regular system. Very unsatisfactory.	The sweepings and rubbish are collected and carted to four depôts, all within the town, where they are burnt and the ashes sold as manure. There are 291 dust-bins and 75 public latrines of various kinds. Night-soil is buried 3 miles away from the town and eventually sold to cultivators.	Was fairly good.
Anakapalle.	12	1,112	Ra. 33 were spent in water-supply improvements; Ra. 693 in repairs to roads and Ra. 185 in repairs to drains.	Sources same as last reported—wells and a tank. Unsatisfactory.	Defective. No system. A few V-shaped drains exist.	Sweepings, rubbish, &c., and night-soil are collected and carted to a depôt outside of the town. There are 19 latrines and 61 dust-bins.	Unsatisfactory. Cholera and small-pox prevailed.
Bimlipatam.	9	964	Ra. 33 were spent in water-supply improvements; Ra. 693 in repairs to roads and Ra. 185 in repairs to drains.	Fairly good. Obtained from tanks and wells.	On the whole good. V, U and L shaped drains exist and they are kept in good order.	Good. The sweepings, rubbish, &c., are burnt in crucurators. Night-soil is burned away from the town. Kimlipatam is on the whole a clean, well kept, municipality.	Was unsatisfactory. Cholera, small-pox and measles prevailed.
Vizagapatam.	3	10,097	Some tanks and wells were repaired (Rs. 23); slaughter-houses and latrines were repaired (Rs. 100); and Ra. 2,387 were spent in other works which consisted in the repair and construction of latrines, dust-bins, drains, &c.	No improvements since last report. Unsatisfactory. Obtained chiefly from wells and a tank.	Unsatisfactory. No improvement since last report. In the main streets V-shaped drains exist which discharge into the swamp.	Unsatisfactory. The sweepings, rubbish, &c., are collected and buried in the swamp. There are 65 public latrines of various kinds and 238 dust-bins. Private scavenging is in force.	Was unsatisfactory. Cholera, small-pox and bowel-complaints prevailed.
Vizianagaram.	4	5,644	A water-course was repaired (Rs. 200); a slaughter-house built (Rs. 344); and another repaired (Rs. 118); a burial ground was repaired (Rs. 343); wooden dust-bins were purchased (Rs. 372); some drains were constructed (Rs. 784) and latrines repaired and improved (Rs. 234).	No improvement since last report. Is obtained from tanks and wells. Unsatisfactory.	No regular system. Some streets have masonry drains. A scheme for the entire drainage of the town is much needed.	Indifferent. The sweepings, rubbish, &c., are either used for filling up hollows in the park or burnt and the ashes used as manure. There are 24 public latrines and 125 dust-bins. Night-soil is either removed to the fields or buried near the latrines which is objectionable.	Unsatisfactory. Cholera and small-pox prevailed.

ABSTRACTS OF SANITARY REPORTS OF LOCAL FUND CIRCLES.

Districts.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Anantapur.	5,094	117	Prickly-pear was removed and pits filled up (Rs. 178); several tanks and wells were repaired and cleaned and other improvements to water-supply carried out (Rs. 1,201); and Rs. 1,468 were spent on sanitary objects, such as construction and repair of latrines, dust-bins, side-drains, &c.	Same as last reported. Obtained from tanks, wells and rivers, of fair quality and sufficient in quantity.	No improvement since last report. Defective. No regular system.	System same as last reported. 14 towns and villages were conserved against 15 in the previous year. The sweepings, refuse, &c., are sold to cultivators for manurial purposes. There are 62 public latrines, 4 of which are in bad repair. Excepting these, the others are freely resorted to.	Was on the whole fairly good. Cholera prevailed to some extent.
Bellary.	5,876	112	Rs. 350 were spent principally in removing prickly-pear and filling up pits, &c., and Rs. 595 in cleaning and repairing tanks and wells and erecting parapet walls to certain wells, &c. A well was sunk (Rs. 310); a latrine was built (Rs. 297); and 3 others repaired (Rs. 36); iron moveable dust-bins were purchased for Rs. 390, and Rs. 1,503 were spent on other minor sanitary objects.	Same as last reported. Is obtained from rivers, tanks and wells, some of which are guarded from pollution.	Same as last reported. No regular system.	25 towns were conserved against 20 in the previous year. The sweepings, refuse, &c., are removed out of village limits and periodically sold as manure. There are 34 latrines freely resorted to.	Was somewhat better than the previous year. Fever and small-pox were less prevalent, but cholera prevailed throughout the year.
Chingleput.	2,838	333	Rs. 1,932 were spent in improvement of village sites which consisted in repairing several streets, removing prickly-pear, butting side-ditches, &c. Several tanks and wells were repaired and cleaned and seven new wells sunk (Rs. 2,029), and Rs. 617 spent on other minor works.	Is obtained from tanks, public and private wells and river channels. Reported to be generally good.	Same as last reported. No regular system. In some parts natural and in others by side-cuttings.	14 towns and villages (the same number as in 1888) were conserved and in only 3 of them are there any public latrines kept in a fair condition. The sweepings, rubbish, &c., are collected and deposited outside of the villages and eventually sold as manure.	Was on the whole fair. Cholera, however, broke out in some parts of the district and lingered on till the end of the year.
Katore.			Prickly-pear was removed (Rs. 4,559); 39 wells were sunk (Rs. 5,591) and some	Was scarce owing to failure of rain. Sources same as last reported.	No change since last report. No regular system. Side-channels exist to carry off storm water. House	Was fairly well attended to in the towns and villages conserved, which numbered 32. The sweepings and refuse in some of them are collected	Was unsatisfactory. Cholera prevailed throughout the year.

Coim.	7,827	204	others repaired (Rs. 82); market-sheds were constructed (Rs. 597); roads repaired (Rs. 4,185); and latrines were constructed and repaired (Rs. 1,152).	drainage flows into pits in the backyards; cess-pools exist in some houses which are never cleaned.	Same as last reported. Unsatisfactory. No regular system.	55 towns and villages were conserved against 86 in the previous year. System same as last reported, i.e., partly by contract and partly amant. The sweepings, rubbish, &c., are removed outside of the village and annually sold. The latrines were kept tolerably clean.	Was unsatisfactory. Cholera and small-pox prevailed.
Cuddapah.	8,726	126	Rs. 382 were spent in improvement of village site consisting chiefly in the removal of prickly-pear and filling in pits. Several new wells were sunk and old ones repaired (Rs. 1,089) and 17 dust-bins and a latrine were built and old latrines repaired (Rs. 212).	Sources same as last reported; was fairly good. Slight scarcity is felt in some taluks during hot weather.	Same as last reported. Unsatisfactory. No regular system.	and deposited outside, where they are burnt and eventually sold, and in others the inhabitants are allowed to take them away to the fields for manure. In all big towns masonry and tatty latrines exist, which are freely used. Garden lands are also largely resorted to for purposes of nature.	Was unsatisfactory. Cholera and small-pox prevailed.
Ganjam.	8,096	467	Roads were repaired, streets improved and side-channels cut (Rs. 777); tanks and wells were cleaned and repaired and a new well sunk (Rs. 600); dust-bins and latrines were constructed (Rs. 57) and sheds repaired (Rs. 8).	Sources same as last reported; tanks, wells and rivers subject to much pollution. Great scarcity was felt owing to failure of monsoons.	Defective. No regular system. Cess-pools are numerous.	32 towns and villages were conserved against 29 in the previous year. The refuse matter, sweepings, &c., of most of these are collected and stored in depots eventually to be sold. In three towns they are periodically sold. In non-conserved villages the sweepings, &c., are thrown in the backyards of the houses or into the nearest available space. In four towns only are there any latrines. These are freely resorted to. The night-soil is carried to a distance and buried.	Was very unsatisfactory. Owing to the failure of monsoons, famine was present with its concomitant ailments.
Godavari.	6,499	262		Is obtained from the Godavari, its canals, tanks and wells of fair quality.	None	107 towns and villages were conserved against 86 last year. The sweepings, rubbish, &c., are thrown into the fields. No public latrines. People resort to surrounding fields.	Was unsatisfactory. Cholera and fevers prevailed largely.
Kistna.	8,450	176	New roads were constructed and old ones repaired, streets were improved and widened, prickly-pear removed and other improvements to village sites executed (Rs. 1,887); several new wells were sunk and old ones and tanks repaired, cleaned and guarded from pollution (Rs. 7,286); and Rs. 660 were spent in other sanitary objects consisting of cutting side-drains, erection of dust-bins, &c.	Is obtained from the Kistna and tanks. Reported to be good.	No regular system. Natural and in some places good. House drainage fair.	50 towns and villages were conserved against 35 in the previous year. The sweepings, rubbish, &c., from these are collected and stored at a distance from them eventually to be sold. The sweepings, &c., from other villages are stored in the backyards of the houses of ryots and periodically removed to their fields. There are 4 pucks and 2 tatty latrines in good condition and freely resorted to.	Was on the whole good, with the exception of cholera and small-pox to some extent.

ABSTRACTS OF SANITARY REPORTS OF LOCAL FUND CIRCLES—continued.

Districts.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Kurnool.	7,528	87	Rs. 1,841 were spent in improvements to village sites and Rs. 3,019 in improvements to water supply consisting in the construction and repair of wells and removing silt from tanks. Rs. 4,427 were spent on other sanitary objects consisting chiefly in the construction and repair of latrines and the purchase of dust-bins. Temporary wells were sunk and several wells and tanks were repaired, cleaned and guarded from pollution (Rs. 1,157); roads, streets and lanes were repaired; side-channels were cut and other improvements to village sites effected (Rs. 1,118); a weekly market-shed was constructed and other weekly markets improved (Rs. 2,076); several dust-bins were constructed and other miscellaneous sanitary works executed (Rs. 2,191). Certain channels and wells were cleaned and repaired (Rs. 595); some new wells were sunk (Rs. 460); market stalls were repaired and others constructed (Rs. 725) and dust-bins erected (Rs. 143).	Is reported to be on the whole good; obtained chiefly from wells reserved for drinking only and springs.	No regular system. Drainage water from houses either evaporates on the surface or sinks into cess-pools.	System same as last reported. There were 29 towns and villages conserved against 24 in the previous year. The sweepings, rubbish, &c., are collected and stored to be used as manure. There are 90 latrines, the contents of which are removed to a distance and buried.	Cholera prevailed.
Madura.	8,352	245	Temporary wells were sunk and several wells and tanks were repaired, cleaned and guarded from pollution (Rs. 1,157); roads, streets and lanes were repaired; side-channels were cut and other improvements to village sites effected (Rs. 1,118); a weekly market-shed was constructed and other weekly markets improved (Rs. 2,076); several dust-bins were constructed and other miscellaneous sanitary works executed (Rs. 2,191).	Same as last reported. Sources—tanks, wells and rivers.	No change since last report. Natural and by side-cuttings.	Was fairly satisfactory. 47 towns and villages were conserved against 46 in the previous year. The street sweepings, rubbish, &c., from these are carted to rubbish depôts and periodically sold. In non-conserved villages, they are heaped up in the backyards or village plains and carried to the fields during ploughing season. There are 4 public latrines. They are not much used, the people preferring to resort to waste lands and open spaces to relieve nature.	Was very unsatisfactory. Cholera and small-pox prevailed largely.
Malabar.	5,734	385	Certain channels and wells were cleaned and repaired (Rs. 595); some new wells were sunk (Rs. 460); market stalls were repaired and others constructed (Rs. 725) and dust-bins erected (Rs. 143).	Same as last reported. Obtained chiefly from wells; tanks and rivers are also used; 42 public wells and 1 tank are set apart solely for drinking.	No change since last report. No regular system. Side-channels exist. Drainage from houses flows into backyards.	34 towns and villages were conserved against 17 in the previous year. The sweepings, rubbish, &c., from these are carried outside of them and either burnt or buried and eventually used as manure. The sanitary condition of conserved villages was fairly satisfactory, but not so of the non-conserved. There are only 5 public latrines, which are insufficient. They are freely resorted to and kept fairly clean.	Was on the whole good. Some cholera, however, prevailed.
Nellore.	8,710	136	Prickly-pear was removed (Rs. 554) and ponds filled up (Rs. 83); several tanks and wells were repaired.	Same as last reported; obtained chiefly from wells and also tanks and rivers. None of the sources reserved solely for drinking; pits dug in the backyards.	No improvement since last report. Side-cuttings exist in some places. Drainage from houses flows into pits dug in the backyards.	Very indifferent. Refuse, rubbish, &c., are stored everywhere. A few latrines exist. Fifteen towns and villages were conserved.	Cholera and small-pox prevailed.

and otherwise improved (Rs. 1,923) and latrines and water pandals were erected (Rs. 1,671).	open wells and tanks subject to pollution.	Is obtained chiefly from streams and springs; reported to be generally good.	Natural	The sweepings, rubbish, &c., from the conserved villages, of which there are 6, are either thrown into the surrounding jungle or deposited in open spaces and periodically sold as manure. In non-conserved villages, they are carried by the people to their lands and utilized as manure. There are only 2 public latrines which are freely resorted to.	Was on the whole good.
A well was sunk (Rs. 10); supply-channels were cleaned and platforms and parapet walls to certain wells were constructed and repaired (Rs. 98) and streets were levelled and repaired and noxious vegetation removed (Rs. 301). Prickly-pear was removed (Rs. 970); Rs. 3,978 were spent in various improvements to water-supply and Rs. 2,181 in the repair and construction of markets and slaughter-houses.	No improvement since last report. Quantity varies in the several towns and villages.	The main streets are fairly well drained. No regular system. House drainage runs into the main streets, open spaces, paddy fields or cess-pools.	Indifferent. No improvement since last report.	29 towns and villages were conserved against 28 in 1888. The sweepings, rubbish, &c., are carted outside of them and sold as manure. In non-conserved villages, they are heaped up near prickly-pear bushes and eventually carried to the fields for manure. Public latrines are not freely resorted to. Sanitary condition of many towns was improved.	Was unsatisfactory. Cholera and small-pox prevailed.
Prickly-pear was removed, side-drains constructed and certain village sites improved (Rs. 1,134); several tanks and wells were cleaned and repaired, many new wells were sunk and other improvements to water-supply executed (Rs. 5,830); 3 market-sheds were constructed and other markets improved (Rs. 447) and 2 tatty latrines were built.	Is obtained from the river, tanks and wells of a doubtful character.	Indifferent. No improvement since last report.	No regular system. Side-channels exist. House drainage runs into backyards generally; in some villages it flows into the side-channels.	38 towns and villages were conserved against 37 in 1888. The sweepings, rubbish, &c., are removed to depôts outside of them. There are 22 public latrines—insufficient in number and indifferently looked after.	Reported to have been good, though cholera and small-pox prevailed.
Prickly-pear was removed (Rs. 1,566); 3 wells were constructed, springs were dug, several tanks and wells were repaired and cleaned and other improvements to water-supply executed (Rs. 1,567), and roads were repaired and dust-bins and latrines constructed (Rs. 1,130).	Is obtained chiefly from rivers, tanks and public and private wells, some of which are reserved for drinking only. There was scarcity felt owing to the failure of rain.	No regular system. Side-channels exist. House drainage runs into backyards generally; in some villages it flows into the side-channels.	Surface by side-channels. Constructed drains exist in some of the main streets.	31 towns and villages were conserved against 33 in the previous year. The sweepings, rubbish, &c., from these are collected and sold by public auction and used as manure. There are only 8 public latrines in two taluks, which are freely resorted to. Temporary latrines were put up during festivals.	Is reported to have been generally good. Cholera, however, prevailed in some taluks.
New wells were sunk and old ones repaired (Rs. 406); markets were repaired (Rs. 45) and some temporary and permanent latrines and dust-bins were constructed and other minor works executed (Rs. 437).	Sources same as last reported, chiefly from wells; in some tanks and rivers are also used.	Surface by side-channels. Constructed drains exist in some of the main streets.		20 towns and villages were conserved against 18 in the year previous. Sweepings, rubbish, night-soil, &c., are removed to a distance to the fields and buried. Public latrines of tatty and brick-in-mud exist in several villages.	Was on the whole comparatively good.

ABSTRACTS OF SANITARY REPORTS OF LOCAL FUND CIRCLES—continued.

Districts.	Area in square miles.	Average population per square mile.	Sanitary Works.	Water-supply.	Drainage.	Conservancy.	General Health.
Tanjore.	3,629	631	Rs. 1,335 and Rs. 4,345 were spent in improvement to village sites and water-supply respectively; Rs. 950 were spent on fairs and festivals, and Rs. 2,243 on other sanitary objects, such as construction and repair of latrines, dust-bins, &c. Roads and tunnels were repaired and constructed, side-drains were cut and deepened and several other improvements to village sites executed (Rs. 2,063); wells and bathing ghats were constructed, tanks and wells were cleaned and repaired, &c. (Rs. 3,410); and Rs. 4,162 were spent on other sanitary objects, such as construction and repair of latrines, dust-bins, &c.	Sources same as last reported—rivers, channels, springs, tanks and wells. Was scarce in some parts of the district owing to failure of rain.	No change since last report. No regular system. Artificial drains exist in some places.	15 towns and villages were conserved. The street sweepings, refuse, &c., from these were daily removed and either sold as manure or burnt. In some of the villages they are removed by contractors in lieu of their wages. Public latrines exist in only three towns, but they are not freely used; open fields, vacant spaces and backyards of houses are resorted to.	Was on the whole fairly good. Some cholera, however, prevailed about the beginning of the year.
Tinnevely.	5,974	306	Same as last reported. Obtained from wells, tanks, rivers and channels. The two latter sources are subject to pollution of all kinds.	Same as last reported. Obtained from rain and river-fed tanks and wells. 9 of the former and 19 of the latter are reserved for drinking only and guarded from pollution. Quality reported to be good.	Defective. No regular system. Side-channels exist. Drainage of houses flows into the backyards.	91 towns and villages were conserved against 84 in the year before. The street sweepings, refuse, &c., from these are removed to a distance and are either sold as manure or burnt. In the non-conserved villages, the refuse, &c., are removed by the people themselves and used as manure. There are 11 public latrines and a few tatty ones on the trench system. They are freely used, except in places where the people resort to adjacent fields.	Cholera prevailed almost throughout the year. With this exception, public health was fairly good in other respects.
Trichinopoly.	3,544	313	Same as last reported. Obtained from rain and river-fed tanks and wells. 9 of the former and 19 of the latter are reserved for drinking only and guarded from pollution. Quality reported to be good.	Same as last reported. Obtained from rain and river-fed tanks and wells. 9 of the former and 19 of the latter are reserved for drinking only and guarded from pollution. Quality reported to be good.	No improvement since last report. No regular system. Side-channels exist.	18 towns and villages were conserved against 12 in the previous year. The sweepings, refuse, &c., are daily removed and used by cultivators as manure. There are 32 public latrines; some of them being at too great a distance from houses, are but little used.	Excepting some cholera, which was imported, was on the whole fairly good.
Vizagapatnam.	3,449	497	No improvement since last report; unsatisfactory; obtained from tanks, wells and rivers subject to all kinds of pollution.	No improvement since last report; unsatisfactory; obtained from tanks, wells and rivers subject to all kinds of pollution.	No regular system. Chiefly natural.	15 towns and villages were conserved. Sweepings, refuse, &c., are heaped up near houses and then removed to fields and used as manure. In towns and villages where public latrines exist they are freely used, but where there are none, the people resort to fields and open spaces for purposes of nature.	Was unsatisfactory. Cholera and small-pox prevailed.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED.

Districts.	Taluk or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Anantapur.	Anantapur	From irrigation channels, fresh water wells and tanks. Sufficient. No special provision made to prevent pollution. Some wells have parapet walls.	No change. No regular system. Side-cuttings exist in some places. Rain water flows into fields and waste lands.	No change since last report. House drainage flows into fields or waste lands. Sweepers are to be entertained to keep 4 villages clean from next year.
	Goity and Tadipatri.	No change. Chiefly from irrigation channels and wells dug in the bed of the Pennair and Chitravati rivers. In villages far off from these rivers, wells are the chief sources. Sufficient in quantity and fair in quality. Watchmen are employed to prevent pollution of certain sources.	No change. Natural generally. Artificial drains exist in the main streets of three towns. Drainage water flows into streets, channels, tanks and ponds.	Seven towns were conserved. The sweepings, rubbish, &c., are either removed to a distance and sold or carried away by rhyots to be used as manure. Public latrines exist in seven important towns and private ones in two. Night-soil from both public and private latrines is buried. In other places people resort to fields for purposes of nature. House drainage defective. In large towns sewage from houses flow into cess-pools.
	Penukonda	From spring channels, wells and tanks. Quality fair. Water in Bukkapatnam is said to be unhealthy. Sources at Penukonda and Bukkapatnam only are set apart for drinking purposes.	No system. Even in head-quarter villages the system in vogue is very imperfect. Drainage water flows into fields and waste lands.	Eight towns were conserved. Sweepings are collected in dust-bins in certain places and sold. Private dwellings are cleaned by the owners and the rubbish used as manure. Pigs, dogs, buffaloes and kites act as scavengers. House drainage flows into cess-pools, which are numerous, and into fields and waste lands.
	Dharmavaram	From rivers, tanks and wells. Sufficient and of fair quality.		
	Hindupur	Same as in Penukonda taluk. No provision made to protect sources from pollution.		
Bellary.	Madakasira	From tanks and spring channels; also from private wells. Sufficient and of fair quality. Sources not specially conserved for drinking purposes.		
	Bellary	From the Tungabhadra channel in Siruguppa, which has a watchman, and from wells in other villages. Almost all wells have parapet walls.	None. Sink-pits exist in some villages ...	Same as last reported. In six villages sweepers are employed.
	Adoni	Sources same as in Hadagali taluk. Sufficient ...	Natural ...	Unsatisfactory. Cattle are picketted in houses. Sewage from houses flows in many big villages into cess-pits.
	Rasyadrag	From wells, tanks, river and channel. Insufficient in some places.	None ...	Sweepers are employed in two villages; in the others the people themselves attend to the cleaning. In Rasyadrag latrines are provided and toties to clean them. Private latrines are scarce. House sewage flows into sink-pits and into streets.
	Atur	Same as last reported ...	None ...	House drainage flows into sink-pits. Same as last reported.
Bellary.	Hospet	From wells, tanks, channels and rivers. Ample. Water from wells good. Some are reserved for drinking and are provided with parapet walls, platforms and drains, and the others subject to pollution.	Natural. Drains, where they exist, are unsatisfactory, as no arrangements are made for their discharge. Cess-pools exist in many villages.	Same as last reported. There are 8 public latrines.
	Kadlgi	Same as last reported. Sufficient ...	None ...	Conservancy arrangements are attended to by the people themselves. Surplus water, house sewage, &c., flow into sink-pits, which are emptied by means of pots and thrown at a distance and covered over with earth.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Districts.	Taluka or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Bellary—continued.	Harpanahalli ...	Same as last reported. In some places wells are set apart for drinking purposes.	Natural. In some of the main streets side-drains exist.	One town (Harpanahalli) was conserved. Sweepings from the union are first collected in dust-bins, stored in different places and sold annually. Public latrines exist, which are used by the females; the males resorting to fields. Refuse from houses, &c., are generally stored near houses and removed once a year.
	Hadagally ...	From the Tungabhadra and wells. Sufficient except in one village (Veerapuram), the inhabitants of which have to go to a distance of one mile for their supply of water.	No system. Channels are dug for the escape of rain water.	Sweepers are employed in many villages to keep them clean. Four latrines exist only in Hadagally. Fields are resorted to generally for purposes of nature.
	Sundūr state (zemindary).	Wells and jungle streams and pits dug in them. Draw-wells are set apart for drinking purposes. Wells run dry in the hot weather.	Natural and good. Cess-pits exist ...	Conservancy arrangements extended to only in Sundūr. There are some private latrines in Sundūr. The night-soil collected from them and other places is converted into poudrette. Cess-prives also exist in Sundūr. In the other villages refuse from houses, dung, &c., are stored up and used to fill up hollow places or as manure.
	Saidāpet ...	From wells, tanks, springs, rivers, channels and ponds. Sufficient. Most of the wells have parapet walls, and in important villages also platforms and drains.	Masonry drains exist in some places; in others side-channels exist.	Six villages were conserved; in others Village Munsifs are strictly ordered to keep them clean. Private latrines exist at Saidāpet. The sweepings of streets and private dwellings and contents of latrines are stored outside the town.
Chingleput.	Chingleput ...	From the Pālār, its channels, tanks, ponds and wells. Generally good and sufficient. A few ponds in two villages (Chingleput and Tiruporūr) are protected from pollution and have watchmen; some wells have parapet walls, platforms and drains.	Natural. Some streets in Chingleput and Tiruporūr have masonry drains and side-channels.	Same as last reported. House sewage flows into backyards. Public latrines exist in Chingleput.
	Madurātakam ...	From tanks and wells. The former subject to pollution. Many wells have parapet walls.	Natural. In three casbah villages drains exist and in some streets stone revetments.	Two villages were conserved. Arrangements same as in Saidāpet. No latrines.
	Conjeeveram ...	From tanks, ponds, wells and river channels. Insufficient in the hot season and quality not very good. Tanks and ponds are subject to pollution. Wells are set apart for drinking purposes and most of them have parapet walls.	Natural ...	Two villages were conserved. Arrangements same as in Saidāpet. Cess-pools exist in low-lying villages. Sewage water from houses flow into backyards and streets.
	Tiruvallūr ...	From tanks, wells, rivers and channels. Generally good. No source is specially set apart for drinking purposes. Wells in the bigger villages have parapet walls, platforms and drains. Tanks are subject to pollution.	Natural. During the monsoon side-channels are cut. Cess-pools exist in Tiruvallūr, and they are emptied twice and thrice a week.	One village conserved. Arrangements same as in Saidāpet. One latrine for females exists in Tiruvallūr. House sewage flows into streets and backyards.
	Ponnéri ...	Sources same as last reported. Most of the wells are surface fed.	Natural. Side-cuttings exist in some villages.	One village was conserved. Arrangements same as in Saidāpet taluk. Private privies exist in two villages. House sewage flows into yards and streets. Cess-pools rare.

Coimbatore.	Erode ...	No change. From wells, tanks, ponds, rivers, channels and jungle streams. Good, but not quite sufficient, there being only a scanty supply of rain. In certain villages wells are set apart for drinking purposes.	Natural. Side-drains exist in some places, which lead into adjacent streams, ponds, backyards and low places.	Sweepings, &c., from houses are stored in backyards and used as manure. In big villages scavenging establishments are maintained. There are no large cess-pools, but pits here and there.
	Satyamangalam ...	Same as last reported ...	Natural ...	No system. In two villages sweepers are employed to keep them clean; in the others the people themselves do the work. Sweepings from houses are stored in backyards and used as manure.
	Pollachi ...	From wells chiefly. Was insufficient owing to the failure of the monsoons.	Side-drains exist in only two villages; in others no system.	Three towns are conserved. The town rubbish is heaped at a distance and occasionally sold. There are 4 temporary latrines in Satyamangalam town, but rarely used. Sewage water soaks into the ground.
	Palladam ...	No change since last report ...	Same as last reported ...	Five villages were conserved. Sweepings, &c., are either heaped up in vacant spaces, periodically burnt and used as manure or used to fill up hollows.
Cuddapah.	Bhavāni ...	Same as last reported ...	Natural ...	Seven villages were conserved. Domestic cleansing same as last reported. There are 5 public latrines and all in Pulladam town; the night-soil from them is buried in pits.
	Kollegal ...	From rivers, tanks, wells, ponds and jungle streams. Two tanks are strictly reserved. Wells yielding drinking water have parapet walls.	Natural. Drainage water flows into rivers, streams, tanks or ponds. Artificial drains exist in Bhavāni town.	Bhavāni town has a conservancy staff. Eight other villages are kept clean by the sweepers employed in the weekly markets and the sweepings burnt, and in the other villages by the villagers themselves. Rubbish, &c., from houses and backyards are used as manure.
	Udamalpet ...	From wells, public and private, the Amarāvati and its branches.	Natural. Of Kollegal town good. Rain water flows into the Cauvery.	One scavenger is employed in one village and a sweeper in another. There is a scavenging establishment in Kollegal town; there are also 7 public latrines, 2 of which were destroyed by the recent excessive rains.
	Kartūr ...	From rivers, jungle streams, tanks and public and private wells. Some wells are provided with parapet walls or fences.	No system. There are side-drains in large villages.	Same as last reported. Two villages were conserved.
	Dhārāpuram ...	From the Amarāvati and its channels, 2 tanks and wells. The wells which are reserved for drinking have parapet walls or are fenced.	Natural ...	Same as last reported.
Cuddapah.	Badvél ...	Same as last reported ...	Same as last reported ...	No system generally. Two towns were conserved besides four villages, which were kept clean by the market establishment of the villages.
	Badvél ...	Same as last reported ...	Natural. Side-channels exist only in Badvél. Rain water flows into streets.	Five villages have conservancy establishments who remove the street sweepings, refuse from houses collected in dust-bins and contents from the public latrines to selected places outside the villages where they are stored and sold as manure. No system elsewhere, the refuse from houses, &c., being heaped up at a distance and used as manure by the owners in their fields. Sewage from houses flows into cess-pools, which are occasionally cleansed, and into streets.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Districts.	Taluk or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Cuddapah—continued.	Proddutur ...	Sources same as last reported. Sufficient on the whole. Quality unknown. Channel water is greatly polluted.	Unsatisfactory. No system ...	Same as last reported. Dust-bins exist in Proddutur town. Six villages are conserved, all of these have latrines which are kept clean. There are also public latrines in some other villages, buffaloes doing the work of scavengers. A few private latrines also exist in Proddutur town.
	Sidhout ...	Same as last reported ...	No system. In Sidhout there are side-channels which empty into the Pennar.	Seven villages were conserved; in the others people themselves keep them clean. Sweepings are stored up near by and used as manure. Dust-bins exist in two villages. Sewage water of houses sinks into the soil. Contents of public and private latrines are heaped up at a distance.
	Pullampet ...	Sources as last reported. Good and sufficient. No special arrangements are made to prevent pollution. Very few wells are provided with parapet walls, platforms and drains. The tanks are never cleaned.	No system. Natural. Side-drains exist in a few villages. Rain water flows through streets into rivers and streams.	Same as last reported. Five villages are conserved.
	Cuddapah ...	Same as last reported ...	Natural. Side channels exist in two villages. Rain water flows into streets.	Same as last reported. Refuse water from houses and backyards is allowed to dry up.
	Jammalamadugu ...	From rivers, pits dug in bed of rivers, wells and tanks. Generally sufficient and good. Some wells containing drinking water are protected from pollution.	Same as last reported ...	Seven villages were conserved. The public latrines are not properly cleaned, buffaloes clean up the night-soil.
	Pulivendla ...	Same as last reported. Sufficient. Wells are specially set apart for drinking purposes.	No system. In Pulivendla side-drains exist.	Same as last reported. There are public and private latrines in a few villages; their contents consumed by buffaloes and pigs. Refuse water from houses and backyards flow into cess-pools occasionally cleaned and into streets.
	Rāyachōti ...	From river, wells and springs dug in the river. Plentiful and good. Watchmen are provided for two wells, which yield good drinking water.	Same as last reported ...	In Rayachōti street sweepings and house refuse are collected in dust-bins which are disposed of by auction once a year. In others they are collected near villages and used as manure. There are three public latrines and few private ones in Rayachōti. Drainage of houses and backyards sinks into the ground.
	Kadiri ...	From draw-wells chiefly, also from a stream and a koneru. The latter has a watchman.	Natural ...	Some villages were conserved. Sweepings, manure, &c., are accumulated in front of houses and lanes. In the Cudbah town they are thrown in dust-bins and then heaped at a distance and sold once or twice a year. The contents of public and private latrines are buried outside the town. Refuse water from houses sinks in backyards.

Gaujam.	Vāyalpād ...	Same as last reported ...	No system. Side-cuttings exist in a town few villages. Two streets in Vāyalpād town have masonry drains. Rain water runs into streams, tanks and fields.	A few villages were conserved and the sweepings stored outside the villages and annually sold as manure. In the others they are heaped up in corners of houses and eventually removed to fields. Refuse water from houses and backyards sinks into the ground. There are a few cess-pools which are cleaned when full; some private and 3 public latrines and 23 dust-bins exist in Vāyalpād town.
	Madanapalle ...	Same as last reported ...	Natural. Only one village (Madanapalle) has side channels.	Villages are generally kept clean by private sweepers. In some villages scavenging establishments are employed and the sweepings with the night-soil from public latrines are sold. There are also some private latrines in Madanapalle, which are never cleaned. House drainage flows into cess-pools and streets.
	Chicacole ...	From rivers, channels, tanks and wells. Quality indifferent, quantity ample. Many wells have parapet walls and platforms. Tanks are subject to pollution. Three tanks are reserved for drinking purposes only.	No system ...	Some of the larger villages are provided with conservancy establishments and the sweepings removed outside of village limits and either sold or burnt. The rubbish and filth from the other villages are removed to fields. There are no public latrines. A few private ones exist in some places, the night-soil from them being thrown on waste grounds.
	Berhampore ...	From rivers, tanks and wells. Scarcity of water is felt in some villages in the hot season. Tanks in some of the big villages and a well in another are reserved for drinking purposes. Wells used for drinking are fenced.	No system. Drains exist in some streets in Ichāpur and Chatrapur.	Thirteen villages were conserved. In other respects same as in Chicacole.
Godāvāri.	Goonsur ...	From tanks, wells and streams. Insufficient and generally not good. Most of the wells are fenced, but waste water again finds its way into them. Some river ghats in three places are reserved for drinking.	No system except in Russelkonda ...	Five villages were conserved. As a rule rubbish is piled up near houses and removed to fields during cultivation season. Latrines are provided in two villages; in the others people resort to fields for purposes of nature.
	Parākīmedi and Tekkali (Zemindaries).	Same as in Chicacole tank ...	Same as in Chicacole taluk ...	Same as in Chicacole taluk.
Kistna.	...	No change since last report. From the Godāvāri canals; rainfed tanks and wells. Sufficient.	No change. Natural ...	No change. Refuse from houses and street sweepings are either burnt or thrown on fields. Domestic cleansing is gradually improving since the introduction of Taluk Boards and Unions.
	Bāpalle ...	Sources same as last reported. Wells are generally used for drinking and tanks for washing and other purposes.	Natural. Drains are being newly formed in two villages.	Six villages were conserved and the sweepings, &c., sold. The people themselves keep the others clean. The sweepings and rubbish collected from houses are used as manure. House sewage stagnates in backyards.
	Bāpatla ...	Same as last reported. Sources protected from pollution in a few villages.	Natural ...	Five villages were conserved. Arrangements same as in Bāpalle. No public latrines.
	Guntūr ...	Sources same as last reported. Good and abundant. Most villages have tanks set apart for drinking purposes. Some wells have parapet walls, platforms and drains.	Natural ...	Same as last reported. No public latrines.
	Palnād ...	From wells, streams, channels and tanks. Wells usually have parapet walls.	Natural ...	Same as last reported. Cess-pools exist which are emptied occasionally.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Districts.	Talaks or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Kistna—continued.	Narsaraopet ...	Sources same as last reported. Generally good and sufficient.	Natural ...	Two villages were conserved. In other respects same as in Répalle. Contents of private privies in two villages (Narsaraopet and Chiala-kurpet) are removed outside village limits.
	Gudivada ...	Same as last reported ...	Same as last reported ...	Same as last reported. There are some public latrines at Gudivada.
	Sattenapalle ...	Sources same as last reported ...	Natural ...	Same as last reported.
	Bandar ...	Same as last reported. Some wells have parapet walls and a few platforms.	Same as last reported ...	Two villages were conserved. In other respects same as in Répalle.
	Nandigama ...	From river, tanks and wells. Supply abundant except in summer; quality good. Some wells have parapet walls.	Natural. Artificial in two villages ...	Two villages were conserved. Street-sweepings are stored or sold. There are no public latrines. There are many private latrines, the contents being consumed by pigs. Cess-pools exist in Jaggayapet.
	Bezváda ...	Sources same as last reported; also from wells, some of which have parapet walls.	Natural ...	Two villages were conserved. Arrangements in other respects same as in Répalle. No public latrines.
	Vinukonda ...	Sources same as last reported. Generally sufficient and good. Some wells have parapet walls.	Natural ...	Same as last reported.
	Núzvid Zemindari.	Same as last reported. Good and sufficient. In some places wells have parapet walls.	Artificial in Núzvid and natural elsewhere.	Same as last reported.
	Vissanapet do. ...	Same as last reported. Some wells have parapet walls ...	Natural. Artificial in one village ...	Two villages were conserved. Arrangements in other respects same as last reported.
	Rámallakót ...	From wells, streams, rivers, spring channels and canal. Sufficient. 145 wells with parapet walls are set apart for drinking purposes.	Natural. Under-ground cess-pools exist in some villages.	Four villages were conserved and the sweepings sold. Public latrines exist in them. In the other villages the people themselves keep them clean.
	Pattikonda ...	From wells, river Hindry and its channels. Sufficient except in the hot weather. Generally good. Wells set apart for drinking purposes are guarded by watchmen.	Natural ...	Four villages were conserved. Public latrines exist in these villages. Arrangements for conservancy in others same as in Sirvél taluk. Sewage water flows in cess-pools. Dust-bins exist in Pattikonda.
	Nandikótkur ...	Rivers, streams, channels, wells and kuntas. Sufficient and good. Wells and kuntas set apart for drinking purposes are guarded by watchmen. Half the number of wells have parapet walls.	Natural. In Nandikótkur drains have been constructed and are in good order.	Three villages were conserved and the sweepings sold. Conservancy arrangements same as in Sirvél taluk. Sewage water flows into cess-pools. Public latrines exist in two villages.

Kurnool.	Nandyal ...	Wells, tanks, rivers and channels. Good and sufficient. Wells are guarded from being polluted.	Natural. In Nandyal a scheme has been carried out partially.	Six villages were conserved. The sweepings are sold. In others conservancy arrangements same as in Sirvél taluk.
	Koilkuntla ...	From wells, kuntas and rivers. Generally good. Sufficient except in places dependent on tanks, which get dry in the hot season. Watchmen employed over wells. They have no parapet walls.	Natural. In two villages artificial drains exist.	Two villages were conserved. The sweepings are sold and the night-soil buried. In other villages, conservancy arrangements same as in Sirvél taluk.
	Sirvél ...	Obtained from draw-wells, rivers, tanks and canal. Good and sufficient.	Natural ...	Four villages were conserved and the sweepings and rubbish burnt in cinerators. The conservancy of the other villages are attended to by the people themselves and the sweepings stored used as manure. Public latrines exist in two villages and the night-soil removed to a distance. House sewage flows into cess-pools.
	Cumbum ...	Chiefly from wells, rivers, streams, a channel and tank. Sufficient.	Natural. Artificial drains exist in two villages.	Four villages have conservancy staffs to keep the streets and public latrines clean. Sweepings and night-soil are stored at a distance from the villages and periodically sold. In other villages conservancy arrangements same as in Sirvél.
Madura.	Márápur ...	From wells and streams. Good on the whole. Deficient in the hot weather. A few wells have parapet walls.	Natural. Cess-pools exist in two villages.	Two villages were conserved. The sweepings are collected stored at a distance and sold with the night-soil as manure. In other villages conservancy arrangements same as in Sirvél Taluk.
	Madura and Tiru-mangalam.	Same as last reported for Madura ...	No regular system. In some unions side-cuttings exist. Surface drainage flows into fields, rivers or channels.	Same as last reported for Madura. Two mud-wall latrines exist at Usilamputti but are not used. Streets and lanes are used for purposes of nature. Public latrines are much required. Domestic cleansing very defective.
	Melur ...	From tanks, wells and streams; 3 uranias, 2 tanks and 2 wells are set apart for drinking.	No system. In Melur side-channels exist.	In two unions conservancy establishments are employed and the refuse deposited far away from the towns and sold as manure. In the other villages the ryots use it for manure in their fields.
	Dindigul ...	From rivers and wells. Watchers are employed to protect the rivers from pollution.	In the streets of large towns and a few important streets of all unions side-cuttings exist.	No information.
Nellore.	Palni ...	No change. From rivers, channels and wells. Watchmen are employed to see that the rivers are not polluted.	Same as in Dindigul ...	No information.
	Head Assistant Collector's Division.	Tanks and wells. Quality generally good. Some sources are reserved. Almost all wells have parapet walls and some platforms and drains.	Side-drains are dug only in the main streets of important towns. Drainage water flows into adjacent waste lands.	Refuse from conserved villages is used in filling up pits. House drainage flows into backyards or collected in pits in front of houses.
	Kodakámal Division.	Same as last reported ...	Natural ...	No information.
	Nellore ...	From tanks, wells, and river. Sufficient ...		In Nellore and Allur conservancy is conducted by the Local Fund Union. In other places no system. Domestic cleansing is attended to by house-owners.
Nellore.	Atmakur ...	From tanks, wells, river and irrigation channel ...	No system; but, drainage water flows freely.	No system in the taluk generally. Dung and rubbish heaps are stored in backyards of houses. Scavengers were employed in Atmakur.
	Kávali ...	Very poor on the whole. Wells should be dug and existing ones repaired.	None. Drains in good condition exist in Kávali.	No system. Houses are generally not clean. In Kávali the houses are in good state.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Districts.	Taluka or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Mellore—cont.	Udayagiri ...	On the whole good ...	None ...	No system. Manure heaps about and cattle are housed with human beings in many villages.
	Kandukūr ...	No change since last report ...	Same as last reported ...	
	Kanigiri ...	From rivers, tanks and wells. Scarcity is felt in some villages.	No system. Side-channels exist in Kanigiri.	No change since last report. Scavengers are employed in a few villages.
	Ongole ...	From tanks, wells, rivers, ponds and vadas. Good and sufficient. Wells are set apart for drinking and protected against pollution. Tanks and ponds are subject to pollution.	No proper system. Drainage of streets flows through vadas.	No change since last report. House drainage flows through sluices into streets.
N.-U. girls.	Podili Division ...	Sources same as last reported. Wells, rivers, tanks and ponds.	Generally none. Side-cuttings exist in Podili.	No system. Manure heaps are stored in backyards and near houses and taken to the fields as manure. Drainage of houses flows into backyards.
	Darsi do.	From wells, tanks, rivers, springs and streams ...	No information ...	No information.
	Chittoor ...	Same as last reported ...	Natural and fairly good ...	Same as last reported.
North Arcot.	Chandragiri ...	Same as last reported. From wells, rivers, springs and tanks. Good and sufficient. Wells generally have parapet walls. Watchmen are employed in Chittoor town and big villages to see that drinking water sources are not polluted; in other villages the Taluaries see to this.	Natural. In Chittoor artificial drains exist in important streets which discharge into irrigation channels.	One town (Chittoor) was conserved. The sweepings, rubbish and refuse from houses are used as manure. There are 5 public latrines in Chittoor town, the night-soil from which and private latrines are carted to a distance. Sewage-water from houses flows into pits dug in backyard or streets and are never emptied.
	Palmanér ...	Same as in Chittoor taluk with the exception that the wells generally have in addition to parapet walls also platforms and drains.	Natural, except in the main streets of Chandragiri. Side-channels exist in some villages.	Four villages were conserved; in others arrangements same as in Chittoor taluk. There are no public or private latrines.
	Gudiátam ...	From wells, tanks, rivers and streams. Sufficient and of good quality. The principal guntas are watched over. Wells have parapet walls only.	Natural except in two places where there are side-channels. In some villages masonry drains exist.	One town (Palmanér) was conserved. In other respects same as in Chittoor taluk.

North Arcot.

Vellore ...	...	Sources same as last reported. Sufficient and good. A few tanks are set apart for drinking only and in two villages watchmen are employed. In some villages wells have parapet walls.	Natural. In large villages side-channels exist.	Three towns were conserved. In other respects same as in Chittoor taluk. There are no public latrines. In Ambār pits are used for purposes of nature. House sewage flows into fields, streets or pits in backyards.
Pólar ...	...	From tanks, river, river channels and wells. In others same as in Chittoor taluk.	Natural ...	One village was conserved. In others same as in Chittoor taluk.
Wandiwash ...	...	From tanks, rivers, channels and wells. Sufficient and generally good. Three ponds are reserved for drinking in Wandiwash town. Wells have platforms and drains in Wandiwash.	Natural. Side-channels are cut in Wandiwash town.	One town was conserved. In others same as in Chittoor taluk.
Arcot ...	...	Same as in Chittoor taluk ...	Natural except in Arcot ...	Two towns were conserved. In other villages no proper arrangements exist. Drainage of houses discharge into streets and backyards.
Wálapét ...	...	Same as in Chittoor ...	Except at Raniput there are no regular street drains.	Four towns were conserved. In other villages same as in Chittoor taluk.
Salem ...	...	From tanks, wells and a few streams. Watchmen are employed for the wells in Reipur and the tank in Taramangalam. Sufficient.	Natural. Side-channels exist in the chief villages and they are kept in good order by the sanitary establishments employed; they discharge into adjacent lands, channels and streamlets.	Five villages were conserved; the other villages are kept clean by the people themselves. The sweepings, rubbish and night-soil from latrines are used as manure. People generally ease themselves in fields. Pigs act as scavengers. Refuse water from houses sinks into the soil.
Atár ...	...	Same as last reported ...	Natural. In important villages side-channels exist.	No system. Two villages were conserved and the sweepings reserved outside the villages for future use.
Nánakal ...	...	From the Cauvery, its channels, wells and tanks. Insufficient. Most of the wells and tanks except those reserved are subject to pollution.	Natural and good ...	Generally satisfactory. Nine villages were conserved and the sweepings and rubbish are heaped up at a distance to be used as manure.
Hosúr ...	...	Mainly from tanks and wells. River water is also used by those living on their banks. Insufficient and on the whole good. In some villages tanks and wells with parapet walls are reserved for drinking purposes.	Natural. In large villages there are side-drains which are kept in good order; they discharge into adjacent lands and tanks.	Eight villages were conserved. Street sweepings and rubbish are stored in convenient places and used as manure. In others the people attend to them. Open grounds are resorted to for purposes of nature. Sewage water from houses, except in large towns, stagnates in backyards and in front of houses.
Tirupatúr ...	...	From wells, tanks, streams and rivers. Sufficient and generally good.	Natural ...	Three villages were conserved; in others no system. Rubbish is either burnt or taken to fields for manure.
Úttankarai ...	...	Wells, tanks and rivers insufficient in the hot season. One tank in Uttankarai is watched over.	Natural. In two villages side-ditches exist. Drainage water runs into fields. There are some cess-pools which are emptied when full.	Four villages were conserved and the sweepings deposited out of the villages; in the others no system.
South Arcot.		Same as last reported. Generally good everywhere with the exception of the hilly portion of Kullakurchi.	Natural. In important villages side-channels are dug during the wet season to carry off rain water which finds its way into ponds, river channels, &c.	In important villages house and street sweepings are collected in dust-bins and sold as manure. In other villages house sweepings are stored in backyards and periodically removed to fields. House drainage flows into backyards, where it stagnates, and in some places into cess-pools rarely emptied.

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ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Taluka or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
South Canara			
Tanjore	From wells usually. Good and ample for the greater part of the year. In the hot season rivers and streams are also resorted to. From rivers, channels, tanks and wells provided generally with parapet walls, platforms and drains. Some tanks in three villages have watchmen.	Natural and good Good. Natural. Drains have been constructed in Vallam and Tiruvadi which empty into ditches. No cess-pools.	No change since 1887. Fairly good. Conservancy establishments are maintained in some of the larger towns and domestic cleansing is fairly well attended to. Seven villages have conservancy establishments, and the sweepings, &c., from them are removed, stored at a distance, and used as manure; in the other villages they are made use of as manure by house owners in their fields. There are four public latrines at Tiruvadi which are cleaned daily. Sewage water from houses and backyards get absorbed in the ground. Three villages were conserved. The sweepings are used as manure. The streets are kept neat and clean. There are two public latrines at Mahajanakudi which are daily cleaned. House sewage flows into backyards. Five villages were conserved and the sweepings stored at a distance. In other villages they are heaped up near each house. All the sweepings, &c., are used as manure. There are no public latrines. Refuse water from houses soaks into the soil.
Kumbakonam	Same as last reported	Natural. Side-cuttings exist in some villages.	Scavenging establishments exist in three villages; in the other villages the villagers themselves clean them. The sweepings, &c., are used as manure. Sewage water from houses flows into backyards where it soaks into the soil.
Máyavaram	From rivers and rainfed tanks. Most of the latter subject to pollution. One tank in Tranquebar has a watchman supplied for it. A few wells are also resorted to for cleansing purposes.	Natural	Four villages were conserved; in others the people clean the streets and the sweepings are heaped in vacant grounds and used as manure. There are no public latrines; a few private ones exist which are cleaned by private toties. A few houses have drains which flow into backyards. Sewage water from houses generally flows into streets, which finds its way into channels or fields.
Shiyáli	River channels and tanks are the chief sources. Wells provided with parapet walls in houses and tanks are also resorted to. Two tanks in Shiyáli town are resorted to for drinking purposes.	Natural. In a few villages the streets have side-ditches. Drainage water flows into fields. No cess-pools.	The villages are generally kept clean by the people themselves. Five villages were conserved. There are no public or private latrines. People resort to fields for purposes of nature. Sewage water from houses flows into backyards, where it soaks into the soil.
Nannilam	River channels and tanks supply good drinking water. In the hot weather wells with parapet walls and temporary springs dug in river beds are resorted to.	Natural. Cess-pools exist which are never emptied, but which get dry during the hot season.	Five villages have conservancy establishments and the sweepings used as manure. The people themselves clean the other villages.
Tiruvuraiyáñdi	From rivers and tanks	Natural. No cess-pools	
Negapatam	Same as last reported	Natural. A few villages have side-ditches.	

Patukóts	Tanks, ponds and wells are the chief sources; there are a few jungle streams also. Deficient in the hot season. Four tanks are conserved. A few wells have parapet walls.	Natural. Some of the streets in two villages have side-channels. Rain water runs into ponds, pools and fields. There are about 1,000 cess-pools, which are never emptied.	Four villages were conserved and the sweepings and refuse of houses carted outside the town. In others the people store up their refuse in backyards, which are eventually used as manure.
Mannárgudi	Same as last reported	Natural. Side-drains exist in a few places. Rain water flows into channels and streams.	Two villages and Nidamangalam union were conserved. In others refuse is stored in backyards and used as manure. No public latrines. People generally resort to open fields.
Otapidáram	Same as last reported	Same as last reported	Eight villages were conserved. Domestic cleansing attended to by owners. Refuse is thrown in manure pits or cess-pools and emptied once a year. No latrines. People resort to fields for purposes of nature. Refuse water from houses flows into cess-pools or manure pits.
Tenkarai	Obtained from wells, tanks, river and channels. Sufficient and fair. Some wells are reserved. Almost all the wells are provided with walls, platforms and drains.	Natural	Streets are daily cleaned by scavengers in some villages. Sweepings are stored away from houses and are burnt and sold. Refuse water from houses flows into backyards, sides of streets or cess-pools. There are no public latrines, but a few private ones, which are occasionally cleaned.
Tinnevelly	Same as last reported	Natural	Sweepers are employed in a few villages. The sweepings are stored in pits outside village sites and sold. The cleaning of the other villages is attended to by the people themselves. The sweepings and refuse from houses are stored in manure pits in backyards and subsequently taken to the fields. Sewage water from houses runs into backyards where it soaks into the soil.
Srívilliputur	Obtained from rivers, tanks and wells. Sufficient and fair except in the dry season. Wells are provided with parapet walls, platforms and drains.	Natural. Side-drains exist in a few villages.	A few villages were conserved. Street sweepings are collected and sold. A few latrines exist.
Sankaranainárkóil.	From wells, tanks, river and channel. Generally good and sufficient. All fresh-water wells are protected by parapet walls.	Natural. Artificial drains exist in two villages.	Sweepers were employed in a few villages; the sweepings from which are removed outside limits. The others are visited by itinerating party employed to seeing that all the villages in the taluk are clean. Refuse from houses are accumulated in corners of houses and periodically removed to fields. The night-soil from public latrines is removed daily.
Nágunéri	Chiefly from wells, about half of them being provided with parapet walls. Very few have platforms and drains. Streams, channels and tanks are also resorted to. Sufficient and good on the whole.	Natural. In a few big villages side-drains are cut.	Sweepers were employed in a few villages. Sweepings from conserved villages are stored outside village limits and sold as manure or burnt. Refuse from houses and contents of private privies are stored in backyards and vacant places and used as manure. There are no public latrines.
Ambásamudram	From rivers, channels, tanks and wells. Sufficient and generally good. Some tanks in the larger villages are set apart for drinking purposes. Almost all the wells have parapet walls.	Same as last reported	Fifteen villages were conserved and the sweepings stored in pits dug at a distance and sold as manure. Domestic cleansing attended to by the people themselves. Refuse, dung, &c., are stored in pits in the backyards of houses and are used as manure. There are no public latrines, but a few private ones.

Tinnevelly.

ABSTRACT OF THE SANITARY ESTIMATE OF VILLAGES IN EACH OF THE REGISTRATION CIRCLES FROM WHICH REPORTS WERE RECEIVED—continued.

Districts.	Taluk or Registration Circles.	Water-supply.	Drainage.	Conservancy and Domestic Cleansing.
Tinnevely—cont.	Sátūr	No change. From wells, tanks and rivers. Fair. Most of the wells have parapet walls, platforms and drains.	Same as last reported	There are conservancy establishments provided in a few villages. The itinerating staff employed in this taluk made some progress in keeping the streets clean. Sweepings of streets are heaped at a distance and sold. Domestic cleansing attended to by the owners. Refuse water from houses soaks in backyards.
	Tenkási	Same as last reported. No special arrangements are made to prevent pollution.	Natural. Side-channels are cut in some places. Masonry drains exist in three villages.	Sweepers are employed in twelve villages to keep them clean; in others the people themselves keep the streets clean. Sweepings from conserved villages are used to fill up hollows and are allowed to rot in out-of-the-way places. Refuse from houses are stored and used as manure. Drainage of houses generally finds its way into backyards and fields.
	Trichinopoly	From rivers, channels, tanks and wells. Two tanks are watched over and reserved only for drinking purposes. Wells containing drinking water have parapet walls and platforms. Good and ample.	Natural. Tunnels exist in three villages.	Nine villages were conserved. The street sweepings from three of them are carted to a distance and used as manure. Refuse and cow-dung, &c., from houses are heaped in backyards and used as manure. The night-soil for the public latrines in Lalgudi is buried. House drainage flows into streets, backyards and low-lying places.
	Musiri	From rivers, channels, tanks and wells. Generally good and sufficient. In two villages tanks are set apart for drinking purposes and watched over. Some of the wells have parapet walls and platforms.	Natural. Side-cuttings exist in a few villages.	Only two villages were conserved and the sweepings heaped up at a distance and periodically sold. In others they are heaped up near dwellings and open places and used as manure. House sewage flows into backyards or adjoining pits or channels.
	Kulitalai	From the Cauvery, its branches, wells and uranis. Sufficient and good. Tanks and wells are set apart for drinking purposes, which are watched in the hot season. One tank has a watchman all the year round. Local fund wells alone have parapet walls, platforms and drains.	Natural	Nine villages were conserved. The street sweepings are removed to a distance and sold or burnt. The night-soil from latrines is buried. There is some improvement in house conservancy. Manure and rubbish from houses are generally stored in backyards. House sewage generally flows into backyards where it sinks into the soil.
	Perambalur	From the Vellar, its branches, jungle streams, wells and tanks. Generally good and ample. In two villages tanks are reserved for drinking purposes only and watched over. A few wells have parapet walls.	Natural	Two villages are conserved and the street sweepings carted to a distance and sold; in the other villages the people themselves clean them. House refuse, &c., are heaped in backyards or in vacant places and used for manuring purposes. Public latrines exist in two important villages, the night-soil from them being buried. There are also some private latrines in the cusbah town which are cleaned daily. Refuse water from houses flows into backyards and streets where it gets absorbed.

Vizagapatnam.	Udayarpálaiyam	Chiefly from tanks and wells. The Coleroon and its branches are also resorted to. Sufficient and generally good. Five tanks were guarded and used for drinking purposes only. A few wells have parapet walls.	Natural. Side-drains were cut in towns.	Four villages were conserved and the sweepings sold. No system elsewhere, the people themselves keeping them clean. House refuse, &c., are stored up and used as manure. Three villages have public latrines and in the others fields are resorted to for purposes of nature. There are very few private latrines. House sewage flows into backyards.
	Vizagapatnam Taluk Board Circle.	From tanks and wells chiefly. Hill streams are also resorted to. Scanty in the beginning of the year owing to the long drought. Generally good. Wells and tanks are set apart for drinking and guarded by village servants. Many wells have parapet walls.	No system except in four villages, where cut-drains exist.	One village was conserved and in the others the people themselves attend to their cleaning. Street sweepings and refuse from houses are burnt or heaped up near houses and used as manure. House sewage flows into backyards and streets.
	Vizianagaram Taluk Board Circle.	From tanks, wells, rivers, streams and channels. Generally good. In four unions tanks are set apart for drinking purposes and watched over by peons. Most of the wells have parapet walls, platforms and drains.	Natural except in unions, where side-channels exist. They flow into fields and irrigation tanks.	In the unions conservancy establishments are employed to keep the streets and public latrines clean. The sweepings are burnt in cinerators or otherwise disposed of. In other villages sweepings and rubbish are stored in backyards and removed to fields.
	Narsapatnam Taluk Board Circle.	Sources same as last reported. Sufficient except during the early part of the year owing to the long drought. In a few big villages tanks are set apart for drinking only and watched by village servants. Most of the public wells in the large villages are provided with parapet walls and platforms.	No system generally. Side-drains exist in three unions.	Same as last reported.
	Párvatipur Taluk Board Circle.	Rivers, tanks and wells. Sufficient except in years of drought and generally good. In the unions and zemindary stations several sources are set apart for drinking purposes and most of the wells have parapet walls.	Only streets in the unions and a few other villages have drains.	Conservancy establishments were employed in the unions and the sweepings deposited outside the villages and sold or burnt. For the other villages an itinerating conservancy establishment was employed. The sweepings are stored in streets and backyards and used as manure. Public latrines exist only in Párvatipur.

SECTION X.

GENERAL REMARKS AND PERSONAL PROCEEDINGS.

69. During the year I visited 24 municipal towns, and the Deputy Sanitary

Visited by Sanitary Commissioner.

Karúr.
Coimbatore.
Erode.
Tirupatúr.
Ootacamund.
Coonoor.
Tinnevely.
Palamcottah.
Tuticorin.
Madura.
Periyakulam.
Pulni.

Visited by Deputy Sanitary Commissioner.

Dindignl.
Trichinopoly.
Srirangan.
Calicut.
Cannanore.
Tellicherry.
Kumbakonam.
Mayavaram.
Mannargudi.
Negapatam.
Tanjore.
Tirupati.

Conjeeveram.
Cuddalore.
Chidambaram.
Vellore.
Gudiyátam.
Wálájápet.
Berhampore.
Chicacole.
Parlákimedi.
Vizagapatam.
Vizianugram.
Bimlipatam.

Anakápallo.
Cocanada.
Rajahmundry.
Ellora.
Guntár.
Bezváda.
Masulipatam.
Bellary.
Adóni.
Kurnool.
Cuddapah.
Nellore.

Commissioner also 24. In addition many smaller towns and villages were inspected. The time I spent on inspection duty was over five months and by the Deputy Sanitary Commissioner over six months.

Surgeon Dymott, the Deputy Sanitary Commissioner, was obliged to go

Home on medical certificate and gave over charge to me on 17th May 1889. Surgeon-Major McNally, who returned from furlough in May, was appointed to act as Deputy Sanitary Commissioner and took over charge from me on the 28th May 1889.

70. As usual I was accompanied in my inspections of municipalities by Members of the Municipal Council, and I then took occasion to point out to them those sanitary defects which attracted my attention. The defects I observed were pretty much the same in all towns I visited, and it is very desirable that definite schemes should be formulated for each municipal area and kept carefully in view in carrying out immediate minor requirements.

71. In most municipal towns the drainage is defective and faulty; but some towns have now had drainage schemes prepared for them and will be taken in hand this year. The question of the best methods of disposal of the sewage will arise as drainage schemes for towns progress, and the plan of applying it to land and utilizing it for irrigating and manuring is undoubtedly the best one. The only municipality at present in the presidency which has sewage farms is Madras itself, and they are a success. In some municipalities the numerous cess-pools which exist in them are daily emptied by municipal agency, and I have recommended these municipalities to remove the sewage to a distance from the towns and utilize it for irrigating and manuring purposes.

72. Street sweepings and night-soil are, as a rule, not thoroughly utilized by municipalities. Some municipalities derive a good income from their sale; but in others the arrangements for their disposal are indifferent. Many Municipal Councils are now, however, paying more attention to the disposal of their street sweepings and night-soil, and hope to derive larger incomes in future from them.

73. The water-supply of most of the large towns is still very indifferent, but schemes for obtaining a wholesome water for some of the larger towns are under consideration and will be commenced this year.

74. In some districts there has been progress made in sanitation, and a good deal has been done in the way of cleansing wells and protecting the mouths with masonry platforms. The utility of cleaning wells periodically and protecting them from direct pollution is unquestionable, but in places there appears to be some idea that if a well has been cleansed out and its mouth protected and if the water is clear and sweet to the taste that it may be regarded as pure and safe. The fact

of water from a well being clear and sweet is not a guarantee of its being pure, and wells sunk within a town are, as a rule, a most unsafe source of supply. In the work of forwarding sanitary improvements, the District Board of Kurnool has evinced an active interest and has effected a number of changes which, when completed, will, it is anticipated, render the district more healthy than it has been. Dr. King, the District Medical and Sanitary officer, in his annual report writes with regard to sanitary advance during the year in the Kurnool District:—

"The District Board, recognizing a want I had frequently impressed upon them as to supervision of sanitary works, requested the sanction of Government for the appointment of an overseer to work in my office. During the year a full scheme for the sewage, conservancy and water-supply for the town of Nandyál was prepared. It was duly submitted to Government and obtained its approval. But it considered the expenditure too much for a single town. Thus, works partially undertaken have been abandoned. Considerable good, however, has been accomplished by the complete reformation and sewerage of one street.

"A scheme for protection of the wells of the important cusbah town of Koilkuntla and a small drainage system was sanctioned by the Board, and has been carried out during the year. It is anticipated that much good will be derived by showing ryots practically how advantageous the use of sewage water is in cultivation.

"Six new wells after standard designs were sanctioned during the year, of which four will probably be finished.

"Plans and estimates were also made for the water-supply of Yeldurty and will be in part finished before the end of the official year.

"A scheme for the laying out of the new village site of Dhone has been nearly completed and land has been purchased by the Board.

"A new village site has also been procured for the "Malas" at Nandyál.

"The estimates framed by Tahsildars were all sent through this office to the President, District Board. Where they were found unsuitable sanitarily, the Board was advised not to adopt them.

"Thus much bad work has been saved and such as has been carried out by the Board this year will bear scrutiny from a sanitary point of view. Much time was taken up in discussing a scheme which I placed before the Board for conserving the whole of the villages of importance at once; but, instead of a balance of nearly a lakh which the Board has had unexpended from year to year, it was found this year that there was a deficit. The suggestion to borrow from Government for this important object was lost by the uneducated ryots, who form the bulk of the Board, voting in a body against the proposal."

75. The question of village sanitation is a far more difficult question to deal with than that of towns, and a sanitary scheme for each village is, under the present circumstances, too much to hope for. To overcome the sanitary evils which are present every where in villages, patience and consideration are required, as nothing much can be done very quickly, and certainly nothing should be done hastily if we mean to avoid causing widespread discontent. We have to reckon upon not only with the custom of centuries, but with blank disbelief in our theories and entire absence of disgust or even of a sense of inconvenience under conditions of life and amid surroundings of a kind which people in some highly-civilized European countries have come to look upon with distaste or abhorrence, and, in these circumstances, there is, when attempting the introduction of new sanitary measures in villages, obvious need for much circumspection. It does not follow, however, that nothing can be done in the way of village sanitation, but we must look rather to what the villagers may, without undue pressure, be induced to do than to what professional opinion would regard as the best thing to do if only it were practicable.

76. In August 1889 a Sanitary Board was sanctioned for the presidency, the Board for the present consisting only of the Sanitary Commissioner and the Sanitary Engineer. The Board will work in concert with the Collector of any district for the purpose of planning or carrying out any particular sanitary work or works in his collectorate.

77. In July 1889 Dr. McNally visited the village of Sriharikóta, Nellore district, to inquire into the cause of the prevalence of elephantiasis in this village, and his report was submitted to Government. No new light was, however, thrown on this disease.

78. The following statement shows the number of places visited by District Medical and Sanitary officers during the year 1889:—

Districts.	Number of towns and villages inspected and reports received.	Number of towns and villages inspected but no reports received.	Total number of towns and villages inspected.	Remarks.
Anantapur	13	...	13	7 places twice inspected.
Bellary	17	...	17	6 do. do.
Chingleput	46	...	46	7 do. do.
Coimbatore	20	...	20	4 do. do.
Cuddapah	12	...	12	
Ganjam	26	...	26	7 places twice inspected.
Godavari	10	...	10	1 place do.
Kistna	9	9	18	
Kurnool	...	29	29	4 places inspected more than once.
Madura	8	...	8	
Malabar	16	...	16	13 places twice inspected.
Nellore	15	...	15	1 place do.
Nilgiris	10	...	10	3 places do.
North Arcot	18	...	18	7 do. do.
Salem	27	...	27	20 do. do.
South Arcot	5	...	5	2 do. do.
South Canara	22	...	22	
Tanjore	14	...	14	
Tinnevely	21	...	21	13 places twice inspected.
Trichinopoly	27	8	35	8 do. do.
Vizagapatam	27	...	27	2 do. do.

There were 403 places inspected during the past year against 412 in 1888. One hundred and five places were inspected more than once during the year. In all districts inspection work was done. The vaccination work was inspected also at the same time, and from the reports received there is evidence that in respect of both sanitation and vaccination good is resulting from these inspections.

79. The service registers have been maintained and brought up to date.

J. A. LAING, Surgeon-Major,
Sanitary Commissioner for Madras.

APPENDIX.

VITAL STATISTICS OF THE GENERAL POPULATION.

Districts.	Number of towns and villages inspected and reports received.	Number of towns and villages inspected but no reports received.	Total number of towns and villages inspected.	Remarks.
Anantapur	13	...	13	7 places twice inspected.
Bellary	17	...	17	6 do. do.
Chingleput	46	...	46	7 do. do.
Coimbatore	20	...	20	4 do. do.
Cuddapah	12	...	12	
Ganjam	26	...	26	7 places twice inspected.
Godavari	10	...	10	1 place do.
Kistna	9	9	18	
Kurnool	...	29	29	4 places inspected more than once.
Madura	8	...	8	
Malabar	16	...	16	13 places twice inspected.
Nellore	15	...	15	1 place do.
Nilgiris	10	...	10	3 places do.
North Arcot	18	...	18	7 do. do.
Salem	27	...	27	20 do. do.
South Arcot	5	...	5	2 do. do.
South Canara	22	...	22	
Tanjore	14	...	14	
Tinnevely	21	...	21	13 places twice inspected.
Trichinopoly	27	8	35	8 do. do.
Vizagapatam	27	...	27	2 do. do.

There were 409 places inspected during the past year against 412 in 1888. One hundred and five places were inspected more than once during the year. In all districts inspection work was done. The vaccination work was inspected also at the same time, and from the reports received there is evidence that in respect of both sanitation and vaccination good is resulting from these inspections.

79. The service registers have been maintained and brought up to date.

J. A. LAING, Surgeon-Major,
Sanitary Commissioner for Madras.

APPENDIX.

VITAL STATISTICS OF THE GENERAL POPULATION.

PERSONAL PROCEEDINGS.

Districts.	Number of towns and villages inspected and reports received.	Number of towns and villages inspected but no reports received.	Total number of towns and villages inspected.	Remarks.
Anantapur ...	13	...	13	7 places twice inspected.
Bellary ...	17	...	17	6 do. do.
Chingleput ...	46	...	46	7 do. do.
Coimbatore ...	20	...	20	4 do. do.
Cuddapah ...	12	...	12	
Ganjam ...	26	...	26	7 places twice inspected.
Godavari ...	10	...	10	1 place do.
Kistna ...	9	9	18	
Kurnool ...	...	29	29	4 places inspected more than once.
Madura ...	8	...	8	
Malabar ...	16	...	16	13 places twice inspected.
Nellore ...	15	...	15	1 place do.
Nilgiris ...	10	...	10	3 places do.
North Arcot ...	18	...	18	7 do. do.
Salem ...	27	...	27	20 do. do.
South Arcot ...	5	...	5	2 do. do.
South Canara ...	22	...	22	
Tanjore ...	14	...	14	
Tinnevely ...	21	...	21	13 places twice inspected.
Trichinopoly ...	27	8	35	8 do. do.
Vizagapatam ...	27	...	27	2 do. do.

There were 409 places inspected during the past year against 412 in 1888. One hundred and five places were inspected more than once during the year. In all districts inspection work was done. The vaccination work was inspected also at the same time, and from the reports received there is evidence that in respect of both sanitation and vaccination good is resulting from these inspections.

79. The service registers have been maintained and brought up to date.

J. A. LAING, Surgeon-Major,
Sanitary Commissioner for Madras.

APPENDIX.

VITAL STATISTICS OF THE GENERAL
POPULATION.

VII.—Deaths registered from Cholera in the districts of the Madras Presidency during each month of the year 1889.

1	2	3	4		5												6			7			8	
Number.	Districts.	Circles of registration.	Villages.*														Total.	Ratio of deaths per 1,000 of population.						
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.	Mean ratio per 1,000 for previous 5 years.
1	Anantapur	8	6	906	68	103			37	201	165	45	50	101	42	5	449	410	859					
2	Bellary	11	11	1,597	142	11		18	162	423	477	210	141	166	114	2	909	818	1,757	20	19	19	10	
3	Chingleput	7	7	2,000	231	311	134	42	5	242	422	207	65	6	34	22	790	754	1,544	15	15	15	12	
4	Coimbatore	13	13	1,452	373	66	109	60	154	155	351	214	744	238	155	640	1,686	1,290	2,976	20	15	17	13	
5	Cuddapah	12	10	1,238	78	70	88	137	7	14	49	17	15	7	27	48	262	234	496	04	04	04	11	
6	Ganjam	8	8	7,174	1,151	28	58	115	3,567	4,269	3,218	2,040	701	54	35	8	7,665	6,267	13,932	160	125	142	09	
7	Godavari	14	14	2,392	454	44	11	154	308	856	2,697	3,381	1,980	230	61	8	5,155	4,533	9,686	57	50	54	22	
8	Kistna	15	15	1,837	400	16	226	288	167	245	886	1,354	413	77	36	49	1,922	1,835	3,757	24	25	24	19	
9	Kurnool	9	8	758	54	49	21	17	22	11	5	8	27	43	25	28	183	156	339	05	04	04	02	
10	Madras	1	1	1	1	28	37	6	5	30	9	3	4	37	6	5	87	84	171	04	04	04	12	
11	Madura	12	12	1,063	320	251	100	191	225	248	435	332	206	148	529	889	2,405	2,147	4,552	41	32	36	14	
12	Malabar	17	10	440	35	19	79	50	43	22	15	30	10	4	11	14	249	480	02	02	02	02	08	
13	Nelore	12	9	1,874	96	19	8	10	73	24	25	368	576	520			896	747	1,623	14	12	13	07	
14	Nulgiris	5	3	48	5	1	1	2	1	1	1	1	1	520			11	11	12	02	02	01	01	
15	North Arcot	14	14	3,628	280	1,879	577	216	41	117	195	109	71	53	100	122	1,994	1,805	3,799	21	19	20	14	
16	Salcm	12	12	4,470	396	658	304	149	93	39	106	168	248	71	114	442	527	1,530	2,919	19	16	18	06	
17	South Arcot	10	10	3,116	913	1,804	415	925	323	247	449	792	185	22	27	17	581	3,139	2,938	6,377	37	32	35	21
18	South Canara.	6	6	1,276	78	262	78	13									18	166	353	03	03	03	01	
19	Tanjore	14	14	3,545	953	2,275	1,672	668	263	287	250	345	139	136	95	83	3,340	3,205	6,545	32	29	30	39	
20	Tinnevely	12	12	1,616	502	2,308	617	452	148	331	134	162	91	80	31	39	2,517	2,078	4,575	30	23	26	35	
21	Trichinopoly.	8	8	1,485	326	316	260	273	91	84	138	481	63	10	25	295	1,066	928	1,994	18	14	16	28	
22	Vizagapatam.	18	18	2,667	850	...	43	258	750	2,175	2,999	734	84	15	4	3	3,896	3,169	7,065	56	45	50	05	
Total, Madras Presidency		238	221	44,452	7,684	10,547	5,064	3,727	5,724	8,036	11,632	13,184	7,548	2,394	1,656	2,218	4,290	40,863	35,157	76,020	29	24	27	16

* As per returns furnished by Collectors

VIII.—Deaths registered from Small-pox in the districts of the Madras Presidency during each month of the year 1889.

1	2	3	4	5												6			7		8			9					
Number.	Districts.	Number in each district.	Circles of registration.	Villages.*	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.			Number of deaths among children.	Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.					
			Number from which deaths from small-pox were reported.	Number in each district.													Number from which deaths from small-pox were reported.	Males.	Females.		Total.	Males.	Females.		Total.				
1	Anantapur	8	8	966	198	91	121	108	86	108	142	75	47	54	68	122	582	528	1,120	265	414	28	30	29	10				
2	Bellary	11	11	1,597	370	295	391	697	466	315	245	150	124	59	25	51	1,338	1,444	2,782	812	1,905	28	30	29	10				
3	Chingleput	7	7	2,060	187	15	23	31	51	46	44	64	54	43	33	32	40	242	243	485	117	235	04	05	04	03			
4	Coinbatore	13	13	1,452	191	58	70	69	70	75	66	87	64	39	67	62	92	419	381	800	159	368	05	04	04	05			
5	Cuddapah	12	12	1,238	236	196	196	196	270	235	258	176	195	185	142	118	168	1,167	1,118	2,285	549	1,236	20	20	20	06			
6	Ganjam	8	8	7,174	1,061	546	696	688	881	458	412	232	170	76	73	61	107	2,202	1,988	4,290	453	1,284	47	40	43	10			
7	Godavari	12	12	2,202	30	3	23	21	17	27	20	24	6	5	51	162	95	1,167	1,118	2,285	549	1,236	20	20	20	06			
8	Kistna	15	15	1,837	102	15	12	28	52	38	25	29	37	13	18	15	41	183	190	373	35	51	02	02	02	17			
9	Kurnool	9	9	758	209	410	510	707	534	257	186	106	70	40	44	15	25	1,474	1,439	2,913	464	1,505	42	43	42	16			
10	Madras	1	1	1	1	2	9	9	9	9	3	2	2	2	2	2	3	95	22	42	5	27	01	01	01	21			
11	Madura	12	12	1,063	226	198	106	153	54	47	32	47	61	51	35	39	54	438	419	877	110	377	02	06	06	10			
12	Malabar	17	12	440	185	196	248	294	189	86	54	60	54	41	19	16	10	710	557	1,267	24	104	06	04	05	15			
13	Nellore	12	12	1,874	100	28	13	19	20	21	32	22	31	27	39	27	43	164	163	327	172	99	02	02	02	09			
14	Nizirisi	5	3	48	18	1	1	8	5	1	1	3	10	8	2	19	19	19	38	2	2	64	04	04	04	07			
15	North Arcot	14	13	3,638	424	173	169	193	140	100	86	98	145	119	124	151	227	851	874	1,725	520	917	09	09	09	14			
16	Salem	12	12	4,479	223	235	201	162	151	141	128	104	112	101	88	116	822	785	1,607	226	416	10	09	10	10	08			
17	South Arcot	10	10	3,146	572	254	269	361	286	240	165	293	293	264	309	431	1,997	2,013	4,010	1,101	1,861	21	22	22	13	13			
18	South Canara.	6	6	1,276	115	62	62	70	51	39	33	20	14	3	135	159	354	8	181	354	8	41	04	03	03	07			
19	Tanjore	14	14	3,545	457	154	143	152	193	137	137	141	156	115	128	142	159	906	881	1,787	312	766	08	07	08	07			
20	Tinnevely	12	12	1,616	84	14	8	14	10	12	10	14	12	18	26	30	60	112	118	228	38	65	01	01	01	08			
21	Trichinopoly.	8	8	1,915	179	78	99	58	61	51	40	65	50	34	43	42	51	319	313	652	142	263	05	05	05	04			
22	Vizagapatam.	18	18	2,667	166	111	109	174	162	109	85	60	36	50	42	30	61	554	475	1,029	102	270	08	06	07	08			
Total, Madras Presidency					238	226	44,452	5,343	3,130	3,335	4,175	3,754	2,561	2,085	1,958	1,746	1,327	1,289	1,435	2,343	14,896	14,242	29,138	5,641	12,260	10	10	10	11

* As per returns furnished by Collectors.

IX.—Deaths registered from fevers in the districts of the Madras Presidency during each month of the year 1889.

Number.	2	3	4		5												6			7			8		
			Circles of registration.	Villages.*	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Ratio of deaths per 1,000 of population.							
																			Districts.	Number in each district.	Number from which deaths from fevers were reported.	Number in each district.		Number from which deaths from fevers were reported.	
1	Anantapur	8	8	996	459	167	121	248	217	199	140	175	218	163	179	194	173	1,041	1,144	2,185	5.7	6.2	5.9	5.7	
2	Bellary	11	11	1,597	685	410	342	475	560	516	412	529	577	522	529	520	457	2,872	2,957	5,829					
3	Chingleput	7	7	2,000	1,280	548	485	461	439	454	498	516	544	523	459	498	520	2,881	3,057	5,938					
4	Combatore	13	13	1,452	883	1,122	976	1,087	852	993	1,109	1,085	1,026	1,013	1,143	1,053	1,185	6,619	6,516	12,935	8.2	7.4	7.8	7.0	
5	Cuddapah	12	12	1,258	1,125	1,600	1,295	1,295	1,389	1,344	1,065	1,242	1,284	1,381	1,630	1,634	1,675	8,486	8,156	16,642	11.8	14.8	14.8	14.3	
6	Ganjam	8	8	7,174	2,447	1,637	745	1,948	1,080	1,199	1,339	1,369	2,037	1,743	1,284	1,317	1,656	8,573	7,279	15,852	17.9	14.5	16.2	12.9	
7	Godavari	14	14	2,202	1,161	768	856	851	965	1,121	1,529	1,596	1,843	1,250	1,795	3,929	8,970	8,316	17,286	10.0	9.2	9.5	8.7		
8	Kistna	15	15	1,837	1,192	1,031	733	856	852	933	944	1,423	1,834	1,556	1,299	1,319	2,000	7,490	7,290	14,780	9.5	9.4	9.5	8.8	
9	Kurnool	9	9	768	743	1,034	945	1,075	1,090	1,047	930	1,140	1,310	1,199	1,262	1,218	1,236	6,954	6,582	13,536	20.2	19.6	19.9	18.7	
10	Madras	1	1	1	380	313	343	328	355	355	336	733	337	556	324	324	1,910	2,154	4,064	9.9	10.8	10.4	9.9		
11	Madura	12	12	1,063	924	890	618	589	583	625	602	630	520	572	624	658	708	3,930	3,689	7,619	6.2	5.5	5.9	6.1	
12	Malabar	17	17	449	439	1,587	1,395	1,463	1,430	1,554	1,738	1,969	1,657	1,375	1,315	1,236	1,298	9,992	8,001	17,993	8.7	6.7	7.6	8.7	
13	Nellore	12	12	1,874	1,082	893	556	616	714	674	680	556	618	505	632	754	852	4,095	3,845	7,940	6.6	6.3	6.5	7.0	
14	Nalgiris	5	5	48	48	60	58	84	90	106	112	104	82	87	57	74	66	525	455	980	10.6	11.6	11.1	11.1	
15	North Arcot	14	14	3,638	2,475	1,593	1,160	1,266	958	1,048	999	1,059	1,271	1,257	1,334	1,767	1,463	7,342	7,344	14,686	8.0	8.0	8.0	8.7	
16	Salem	12	12	1,479	2,012	1,351	1,048	1,009	992	1,150	1,634	1,062	1,187	1,250	1,405	1,324	1,675	7,186	7,331	14,517	9.2	8.9	9.1	8.7	
17	South Arcot	10	10	3,146	1,850	1,325	1,032	1,030	924	961	1,311	1,029	1,095	1,052	1,027	1,071	1,167	6,514	6,100	12,614	7.2	6.7	6.9	6.6	
18	South Canara.	6	6	1,278	927	675	497	459	536	362	569	643	544	464	476	399	581	3,200	2,805	6,005	6.8	5.7	6.2	8.1	
19	Tanjore	14	14	3,545	1,060	328	281	215	223	233	226	257	254	307	392	288	227	1,586	1,585	3,171	1.4	1.4	1.4	1.4	
20	Tinnevely	12	12	1,616	907	599	430	380	348	359	456	369	452	346	360	469	421	557	2,063	2,384	5,047	3.2	2.7	2.9	3.3
21	Trichinopoly.	8	8	1,195	940	624	496	461	473	615	466	483	468	506	469	512	533	3,062	3,004	6,066	5.2	4.7	4.9	4.7	
22	Vizagapatam.	18	18	2,667	1,517	1,543	1,104	1,195	1,263	1,490	2,012	2,587	2,895	3,175	2,217	2,396	2,700	12,605	11,852	24,457	18.0	17.0	17.6	13.7	
Total, Madras Presidency.		238	238	44,452	23,744	19,958	15,306	16,392	15,838	17,209	17,531	20,188	21,726	20,780	19,699	20,342	25,203	118,526	111,646	230,172	8.5	7.8	8.2	7.7	

* As per returns furnished by Collectors.

X.—Deaths registered from bowel-complaints in the districts of the Madras Presidency during each month of the year 1889.

1 Number.	2 Districts.	3 Circles of registration.		4 Villages.*		5												6 Total.			7 Ratio of deaths per 1,000 of population.			8 Mean ratio per 1,000 for previous
		Number in each district.	Number from which deaths from bowels were reported.	Number in each district.	Number from which deaths from bowels were reported.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.	
1	Anantapur ...	8	906	149	34	11	21	17	34	20	29	28	39	24	20	16	170	123	293	0.8	0.8	0.8		
2	Bellary ...	11	1,597	252	57	43	44	37	39	54	122	111	92	94	78	47	395	358	753	0.8	0.8	0.8		
3	Chingleput ...	7	2,000	1,065	509	345	293	233	323	270	325	353	356	341	328	288	2,096	1,868	3,964	4.2	3.8	4.0		
4	Coimbatore ...	13	1,452	329	132	88	87	87	116	146	166	162	125	143	169	120	830	711	1,541	1.0	0.8	0.9		
5	Cuddapah ...	12	1,258	299	84	49	57	34	52	34	61	56	85	70	58	53	364	329	693	0.6	0.5	0.6		
6	Ganjam ...	8	7,174	205	34	26	46	65	41	32	53	70	63	57	44	32	339	324	663	0.7	0.4	0.5		
7	Godavari ...	14	2,262	118	57	42	65	52	80	172	238	189	90	53	54	29	607	514	1,121	0.6	0.5	0.6		
8	Kistna ...	16	1,837	184	30	25	32	32	29	35	78	104	75	80	31	25	274	252	526	0.3	0.3	0.3		
9	Kurnool ...	9	758	103	15	17	22	19	18	24	44	71	44	24	27	15	194	146	340	0.5	0.4	0.5		
10	Madras ...	1	1	1	329	270	210	190	255	253	265	310	293	233	167	165	1,390	1,540	2,930	7.2	7.8	7.5		
11	Madura ...	12	1,063	197	125	64	86	88	115	116	136	73	95	113	153	117	666	615	1,281	1.0	0.9	0.9		
12	Malabar ...	17	1,440	333	309	335	264	338	494	501	486	443	314	293	267	309	2,355	2,048	4,403	2.0	1.7	1.8		
13	Mellore ...	12	1,874	263	85	24	78	60	45	60	57	66	79	80	64	50	496	342	748	0.6	0.6	0.6		
14	Nilgiris ...	5	48	24	8	6	9	4	9	16	17	11	7	8	7	67	44	111	1.3	1.1	1.2			
15	North Arcot ...	14	3,648	663	204	85	97	60	99	73	111	138	136	134	155	160	808	644	1,452	0.8	0.7	0.8		
16	Salem ...	12	4,479	555	106	93	73	62	76	75	77	84	73	76	84	97	522	454	976	0.6	0.5	0.6		
17	South Arcot ...	10	3,146	436	134	96	88	48	57	103	139	81	95	119	84	140	667	513	1,180	0.7	0.5	0.6		
18	South Canara ...	6	1,276	511	327	211	108	89	69	97	147	130	129	162	143	167	992	787	1,779	2.1	1.6	1.8		
19	Tanjore ...	14	3,545	219	282	163	182	125	97	149	141	100	114	99	111	878	785	1,563	0.8	0.7	0.7			
20	Tinnevely ...	12	1,616	310	197	102	156	85	110	98	145	114	93	125	129	152	821	685	1,506	0.9	0.7	0.8		
21	Trichinopoly ...	8	1,495	204	83	58	57	44	51	47	56	41	44	50	44	67	322	320	642	0.5	0.5	0.5		
22	Vizagapatam.	18	2,637	99	20	27	19	40	33	55	92	110	73	37	33	33	300	272	572	0.4	0.3	0.4		
Total, Madras Presidency.		238	235	44,452	5,549	3,221	2,180	2,094	1,795	2,242	2,430	2,985	2,845	2,502	2,379	2,229	2,220	15,463	13,659	29,122	1.1	0.9	1.0	

* As per returns furnished by Collectors.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—again the following:—

From Surgeon-Major J. A. LAING, Sanitary Commissioner for Madras, to the Chief Secretary to Government, dated Fort St. George, 16th June 1890, No. ²⁰⁹⁸/_{S.}

I have the honor to acknowledge receipt of post card No. 373, dated 10th June 1890, Local and Municipal, calling upon me to submit the Sanitary report for 1889 and the Vaccination report for 1889-90, both of which being due on the 1st June 1890.

2. In regard to the Sanitary report the whole of it has been printed and I hope to forward it to Government within a week or ten days more. I regret the delay that has occurred in its submission but it was owing to the dilatoriness on the part of certain Municipalities and District Boards in furnishing me with information required for the report, although when forwarding to them, in December 1889, blank forms of Sanitary reports to be filled in and submitted to me I specially called their attention to para. 1 of G. O. No. 670, dated 9th August 1889, Public. I append a list of the Municipalities and District Boards that were late in submitting their Sanitary reports.

Districts.	Date of receipt.	Municipalities.	Date of receipt.
Madura	3rd March 1890	Cocanada	4th March 1890
Malabar	5th " "	Mannargudi	7th " "
Ganjam	17th " "	Mangalore	17th " "
Trichinopoly	24th " "	Palghat	22nd " "
Bellary	26th " "	Calicut	22nd " "
Godaveri	31st " "	Madura	22nd " "
Anantapur... ..	29th April 1890	Dindigul	31st " "
Nellore	12th May 1890	Gudiyatam	16th May 1890
Kurnool	12th " "	Kurnool	17th " "
		Anakapalle	29th " "

3. In regard to the Vaccination report the Acting Inspector of Vaccination and Deputy Sanitary Commissioner will be requested to explain cause of delay and his explanation when received will be submitted to Government. Dr. King is at present absent from Madras on inspection.

Order—dated 23rd June 1890, No. 1574 L. Mis.
Recorded with the remark that the reports should be submitted at once.

(True Extract.)

To the Sanitary Commissioner.

J. F. PRICE,
Chief Secretary.

[READ—

Read—also the following paper :—

From Surgeon-Major J. A. LAING, Sanitary Commissioner Madras, to the Chief Secretary to Government, dated 27th June 1890, No. 2292 S.

I have the honor to forward two stitched copies of my Sanitary Report for 1889.

2. The cause of delay in its submission has been explained in my letter No. 2098 S., dated 16th June 1890.

3. Two copies have as usual been forwarded to the Government of India, Home Department, and two to the Sanitary Commissioner with the Government of India.

4. The title page and table of contents and diagrams of birth and death rates will be inserted in the bound copies.

5. I have omitted Section VIII, "Sanitary Works, Military," as appertaining to the Section "Army" which has been by order of Government omitted from the Sanitary Report. Besides, the information furnished by the Military authorities in this respect is very meagre and of little use.

ORDER—dated 26th August 1890, No. 2135 L., Local and Municipal.

With the letter read above the Sanitary Commissioner forwards his report for 1889 which was due on the 1st June last. In spite of the remarks contained in para. 1 of G. O. dated 9th August 1889, No. 670, Public, there has been even greater delay than occurred in the preceding year in the submission of the Sanitary Report for 1889. This is the result of dilatoriness on the part of certain of the reporting officers and the Government observes with displeasure that the Presidents of the District Boards of Anantapur, Kurnool, Nellore and Madura, and the Chairmen of the Municipal Councils of Cocanada, Kurnool, Dindigul, Calicut, Gudiyatam and Anakapalli have again failed in this respect. The officers above-mentioned will submit such explanation as they may have to offer of the very reprehensible delay that has arisen.

2. *Rainfall and prices of food grains.*—The average rainfall (48.38 inches) of the year under review exceeded that of the eighteen preceding years exclusive of 1876. Contrasted with 1886, the increase is chiefly noticeable in the districts of South Canara, Ganjam, Godavari, Kurnool, Nilgiris and Vizagapatam, while, compared with the mean of the ten years ending 1886 (excluding 1876), the increment is most marked in these districts and in Malabar. In Nellore and the districts on the southern coast, however, the rainfall was less than that of the preceding year and the average of the ten years ending 1886.

The following table shows the prices of food grains as compared with the two preceding years and the average for the last five years :—

		No. of seers sold for a rupee.			Average for the last 5 years.
		1889.	1888.	1887.	
Rice	...	13.6	15.3	15.5	14.8
Ragi	...	27.8	29.4	29.9	28.5
Cholam	...	24.6	27.5	28.0	26.7

• Ganjam.

	1887.	1888.	1889.
Rice	18.5	16.4	11.5
Ragi	32.1	26.3	21.0
Cholam	27.9	26.6	18.0

† Vizagapatam.

	1887.	1888.	1889.
Rice	15.5	14.8	12.1
Ragi	26.9	25.5	23.3
Cholam	25.9	25.2	22.0

In Ganjam, as a consequence of the bad season of 1888, prices continued very high,* and the scarcity prevailing in that district affected the adjoining district of Vizagapatam† and caused a considerable rise in the prices there also.

3. *Vital Statistics.*—The population with reference to which returns of births and deaths were received, rose from 27,852,474 in 1888 to 28,050,087, the increase of 197,613 occurring in the districts shown in the margin. During the year under review returns were received from Nellore for the total population of the district according to the census of 1881,

Ganjam	...	4,239
Nellore	...	35,118
Vizagapatam	...	158,256
		197,613

and the only districts in which the full census-population was not brought to account were Kurnool, Madura, Malabar, South Canara, Ganjam and Vizagapatam. In the case of the first four districts, the reductions are permanent and are due to the omission from the returns of the Banganapalli State in Kurnool, of all the Zemindaries in Madura and of the Laccadive Islands in Malabar and South Canara. The difference between the census-population and that for which returns were actually received was very considerable in Ganjam and Vizagapatam. The Collector of the latter district has already reported the introduction of measures to secure more complete returns in future and the Collector of Ganjam will now state what steps he proposes to take with this object.

4. *Births.*—Although from the large variations in the birth-rates reported from the various districts, it is obvious that the registration of births cannot be regarded as making any very near approach to accuracy, the birth-rate reported during the year under review rose to 30.9 per mille against 29.9 per mille in 1888 and was the highest reached during the past nineteen years. It was largest in Kurnool (42.2 per mille), Anantapur-Bellary (40.7 per mille) and Madras (40.2 per mille), and was probably in these districts approximately correct. His Excellency the Governor in Council, however, regrets to observe that the remarks made in the review on the last report appear to have had but small effect. In several districts, particularly Tanjore, Tinnevely and Nellore the registration of vital statistics is clearly but little attended to, while in those marginally noted, it appears to be looked after in a very perfunctory manner. The Collectors of the four districts named will report what steps they have taken to carry out the instructions of Government embodied in para. 4 of G. O., No. 670, Public, dated 9th August 1889.

Nilgiris	...	20.1 per mille.
Vizagapatam	...	22.0 "
Godavari	...	22.9 "
Malabar	...	24.4 "

The extremely low birth-rate in Ganjam (18.1 per mille) may be partly ascribed to defective registration, but was also, doubtless, to a great extent due to the effects of the famine.

The average birth-rate for all District Municipalities, (30.2 per mille), though slightly higher than in the preceding year, cannot be looked upon as accurate and it is regrettable to find an utter want of energy on the part of so many Municipal Councils in enforcing the penal clauses of Act IV of 1884 under which registration is obligatory. The results obtained in Dindigul, Bezwada, Adoni, Anantapur, Erode, Karur, Coimbatore and a few other Municipalities may be regarded as good, but the fact of the death-rate exceeding the birth-rate in twenty-three towns is, in the absence of any evidence of abnormal mortality, a sufficient proof of the

general inaccuracy of the returns. The differences between the rural and urban birth-rates are in many cases remarkable, the rural exceeding the urban rate in the Chingleput District by 16·2 per mille while the urban exceeds the rural in the Coimbatore District by 8·7 per mille.

Tirupati ...	10·8 per mille.
Cuddalore ...	16·5 "
Trichinopoly ...	17·4 "
Negapatam ...	19·1 "
Chidambaram ...	19·8 "
Cannanore ...	20·1 "

Variations so striking and contradictory can only be ascribed to omissions which with ordinary attention might be avoided. The worst results were obtained by the Municipalities noted in the margin.

The figure for Tirupati in particular is most discreditable to the Council.

5. *Deaths*.—The following statement shows the total number of deaths per mille under the principal diseases as compared with the four preceding years:—

	1885.	1886.	1887.	1888.	1889.
Cholera ...	2·0	·4	1·0	2·1	2·7
Small pox ...	1·2	·6	·7	·8	1·0
Fevers ...	7·7	7·9	8·6	7·3	8·2
Bowel complaints ...	1·1	·9	·9	1·0	1·0
Injuries ...	·4	·4	·6	·4	·4
Other causes ...	9·4	9·5	9·8	9·8	10·2
	21·8	19·7	21·6	21·4	23·5

Cholera appears to have been steadily increasing in intensity since 1886 and was largely responsible for the enhanced mortality during 1889. Under all heads, however, the deaths exceeded in number those which occurred in the previous year. How far the increase in the mortality returned may be the effect of improvement in registration it is impossible to say, but it would appear from the statistics furnished, that 1889 was more unhealthy than any preceding year since 1879. There can, moreover, be little doubt that even the death-rate recorded during the year under review is much short of the truth. The mortality among infants under one year of age was considerably higher than that recorded during 1888 and amounted to no less than 154·3 per mille of the infantile population according to the last census; this figure, which certainly does not err on the side of excess, shows the general prevalence of insanitary conditions. Omitting Ganjam, where the high death-rate (40·8 per mille) is no doubt ascribable to the effects of the famine, the highest mortality was recorded in Kurnool (30·8), Anantapur-Bellary (27·8), Chingleput (26·4) and Madras (42·6); these districts also returned the highest birth-rates, and it may fairly be assumed that the statistics which they afford represent the facts with tolerable accuracy. If they do it is plain that the returns received from Malabar, Nellore and Nilgiris (where the recorded death-rates were only 15·6, 15·3 and 14·8 per mille respectively) are utterly untrustworthy. The high mortality of the Madras District (42·6 per mille), where the deaths exceeded the births, is a fact which calls for earnest consideration. A special report on this subject has been received, from the Sanitary Commissioner, but the Government has deferred passing orders upon it pending receipt of the Municipal Commissioners' remarks thereon. The matter was brought prominently to notice before when reviewing the Madras Municipal Report for 1888-89; the President is requested to submit, without any further delay, the views of the Commissioners on the subject.

In the report now under consideration, the Sanitary Commissioner does not touch upon the Sanitary improvements carried out by the Municipal Commissioners in the town of Madras. He should arrange hereafter to give, in Section IX of his report, a brief account of their operations as is now done in the case of the District Municipalities and Boards.

The average death rate in the fifty-five Municipalities was 29·3 per mille against 29·7 per mille in 1888. The highest death rate (57·8 per mille) occurred in Bezwada, where fever carried off no less than 13·1 per mille of the population. The mortality in Berhampore was, owing to the famine, even higher than in the preceding year having risen, from 43·6 per mille to 52·7. In the latter year fever was the prevailing and most fatal disease, but in that under review cholera swept off no less than 23·1 per mille of the population. It is to be hoped that the energetic steps which are being taken by the Municipal Council of Bezwada, and the drainage of Berhampore, which is under contemplation, will have the effect of considerably improving the sanitary condition of these towns. The low death-rates returned in the towns of Trichinopoly, Tirupati, Cuddalore and Cannanore are, no doubt, the result of defective registration, and it is to be observed that these Municipalities were also extremely backward in the registration of births. In Tirupati the registration of vital statistics is disgracefully bad.

The death-rates among the urban and rural populations were respectively 28·0 and 22·9 per mille, the urban death-rate exceeding the rural in all districts except Trichinopoly and South Arcot. Some excess in the mortality among the urban population is naturally to be expected, but it is impossible to judge how far the difference of 5·1 per mille is to be ascribed to the insanitary condition of towns and how far to the superiority of urban registration.

6. *Principal diseases. Cholera*.—The mortality from cholera in 1889 (76,020) is the highest recorded since 1877, and shows an increase of 17,343 over the figures of the preceding year. The difference is mainly accounted for by the severe outbreak which accompanied the famine in Ganjam, in which district no fewer than 13,932 deaths were ascribed to this cause during the year; the Sanitary Commissioner, however, and no doubt, correctly, remarks that the statistics were probably confused by the occurrence of famine-diarrhoea. The epidemic then spread to the adjoining districts of Vizagapatam and Godavari where the deaths from this cause were also very numerous: over the rest of the Presidency cholera was less prevalent than in 1888. Contrary to what is usually observable the epidemic reached its maximum intensity in June and July, and it is instructive to observe that the same months formed the period when the highest prices were ruling in Ganjam and when, consequently, it may be assumed that the stress of famine was most felt.

Among Municipalities the towns most affected were Berhampore and Parlakimedi which are both situated in Ganjam, and in each of these the mortality from this cause was no less than 23 per mille of the population. In Vizianagram, Tirupatūr, and Vaniyambādi, also, it exceeded 10 per mille of the population. The only towns in which no deaths were recorded under this head are Cannanore and Tellicherry.

7. *Small-pox*.—The mortality from this cause (29,138) again advanced and is

	Death rate per mille.
1889 ...	1·0
1888 ...	0·8
1887 ...	0·7
1886 ...	0·6
Average for the 5 years ending with 1885	1·1

in excess of that recorded during the three preceding years, but falls slightly below the average of the 5 years ending 1885. Among Municipalities, Vizagapatam suffered most heavily (6·7 per mille) and Berhampore and Vizianagram come next, with 5·1 and 4·9 deaths per mille respectively. In eight Municipalities, no deaths were registered from this cause. No inverse ratio between the number of deaths from this disease and the number of persons protected by vaccination in each Municipality is generally to be observed; this, it must be presumed, is to be ascribed to the fact that a large proportion of the population of every town is still unvaccinated. Among the districts, the highest death-rates occurred, as in

1888, in Ganjam and Kurnool, the ratios of deaths per mille of the population being 4.3 and 4.2 respectively. The high rate in the former was no doubt due to the famine, and that in the latter to the opposition of the people which has for some time past been a hindrance to the progress of vaccination in this district but which owing to the energetic measures recently adopted by the District Board, seems likely to be overcome. The least affected districts were Godāvari, Madras and Tinnevely. As usual, by far the larger number of deaths from this cause occurred among children under 12 years of age. The extreme importance of infantile vaccination is constantly being urged upon local authorities and the matter will be again dwelt upon when the vaccination report for 1889 is reviewed.

8. *Fevers*.—The mortality from this cause amounted to 230,172 against 204,561 in 1888. The increase, though regrettable, can hardly be regarded as a clear indication of the greater prevalence during the year of fevers in the medical acceptance of the term, as the classification under this head in many rural parts of all diseases accompanied by febrile symptoms is, as may naturally be expected, still of a very indiscriminate character. The Districts of Kurnool, Vizagapatam, Ganjam, Cuddapah, Nilgiris and Madras head the list with death-rates ranging from 19.9 per mille to 19.4 per mille. The least affected district was Tanjore where the ratio of deaths was only 1.1 per 1,000 of the population. The high death-rate from this cause in Madras is remarkable. Among Municipalities, Kurnool stands first with a death rate of 21.4 per mille and Bezwāda (*vide* para 5 above), Parlakimedi and Rajahmundry follow with death-rates of 13.1, 10.9 and 10.6 per mille. The least affected towns were Cannanore, Tinnevely, Cocanada and Palamcottah, in which the ratio was less than 3 per mille. In the year preceding that under review, the death-rate from fevers in Kurnool was exceedingly high; and the Government desires that the Sanitary Commissioner will take an early opportunity of visiting this town and suggesting such measures as may seem possible in view to reducing the mortality under this head.

9. *Bowel Complaints*.—The deaths from bowel complaints—which should hereafter be recorded under the head “Dysentery and Diarrhoea” as directed by the Government of India in its Resolution communicated with G. O., dated 8th July 1890, No. 1679 L.,—were slightly higher than in 1888, being 29,122 against 27,721 in that year. The district mortality was only 9 per 1,000, and would have been considerably lower, but for the inclusion of Madras Town in which the death-rate from this cause was no less than 7.5 per mille. On the other hand in the 55 Municipal towns the mortality was very high, being 3.5 against 3.2 per mille in 1888. A higher death-rate from bowel-complaints may naturally be looked for in towns, but no particular reliance can be placed upon the statistics furnished, as it is undoubtedly the case that in rural areas a large number of deaths which should be classified under this head are ascribed to fevers. The District Municipalities which showed the highest number of deaths were Tuticorin (9.5 per 1,000), Bezwāda (8.5), Cocanada (6.6) and Negapatam (6.2).

10. *Injuries, &c.*—Excluding 1886, the deaths from injuries have remained at a remarkably constant figure since 1880, and during the year under review they numbered 11,506 against 11,401 in 1888. The death-rate from unspecified causes showed, however, a considerable advance, being 10.2 per mille against 9.8 in the preceding year, and the actual number of deaths under this head was the highest recorded during the last 20 years. The cause of the sudden increase over 1888 has not been explained.

11. *Sanitary improvements carried out by District Municipal Councils and District Boards*.—The subjects dealt with by the Sanitary Commissioner under these heads will be fully noticed when reviewing the individual administration reports of the local bodies concerned and in the general Municipal and Local Fund

reviews for 1889-90, when the operations for the whole official year will be before Government. In the meantime, the following points call for remarks:—

- (a). The only towns into which a more or less sufficient supply of good drinking water has been brought by Municipal bodies are Cuddalore, Masulipatam and Ootacamund, but projects for the water supply of Adóni, Cuddapah, Dindigul, Madura, Negapatam, Salem, Tanjore, Tinnevely and Trichinopoly have either been sanctioned or are being matured by the Councils concerned and in the case of Cuddapah considerable progress was made during the year towards bringing the scheme for that town to completion. Drainage schemes have also been prepared for Kumbakonam, Ootacamund, Negapatam, Salem and Vellore but those for the last three have not as yet been finally approved by Government. The want of professional assistance has hitherto operated as a hindrance to the execution of projects of this nature, but the Government feels assured that the recent appointment of a Sanitary Engineer will be followed by a great improvement in the water-supply and drainage of Municipal towns.
- (b). The proportion of expenditure to allotments by Municipal Councils during the first nine months of the year was, on the whole, satisfactory though the charges on account of “other Sanitary outlay” should have been larger than they were. The expenditure under the several heads is shown below:—

	Expenditure.	Allotment.	Percentage.
	Rs.	Rs.	
Conservancy	4,14,632	2,95,367	71
Improvement of town sites	46,900	24,629	53
Do. of water supply	68,626	39,082	57
Sanitary arrangements at fairs and festivals.	6,041	4,470	74
Markets and slaughter houses	34,172	15,702	46
Other sanitary outlay	86,957	46,370	53
Total	6,57,328	4,25,620	65

- (c). The number of latrines cleaned by Municipal Agency rose from 16,071 to 17,500 during the year under review, but, although this increase is satisfactory so far as it goes, the progress made in private scavenging has fallen short of expectations and the number of houses dealt with in this manner forms a very small fraction of the whole.

It is to be regretted that the system of private scavenging is in force in only thirty-nine Municipal towns and that there was a falling off in this respect in the towns of Palamcottah, Chicacole, Srirangam, Cocanada, Masulipatam and Tanjore. This point will have due notice in the reviews of the Administration Reports of these Municipalities.

- (d). Of the 55 Municipal towns, 48 were visited by the Sanitary Commissioner and his Deputy during the year under review, those which were not visited being Anantapur, Cochin, Pálghát, Ongole, Salem, Vániyambádi and Mangalore. The inspection reports of only 29 towns have reached Government, while those of the remaining 19 have not, as yet, been submitted. This should be explained, and the Sanitary Commissioner should bear in mind that the Government expects him personally, or by means of his Deputy,

to inspect every Municipal town and report on it during the course of the year. The reports received by Government showed that the sanitary condition of Madura, Ootacamund, Gudiyatam, Cuddalore, Negapatam and Tinnevely was far from satisfactory, while in Coonoor, Tirupati, Srirangam and Trichinopoly some improvement had taken place since the last inspection.

- (e). The proportion of expenditure to allotments was by no means satisfactory in Local Fund areas and exhibited but little improvement upon the preceding year. Only 55 per cent. of the sanctioned grant was utilized during the first nine months of the year and the outlay in the six districts noted in the margin was very low and should be explained. The monthly reports received from the Presidents of District Boards under G. O., dated 6th June 1889, No. 1274 L., should in future be carefully scrutinized by the Sanitary Commissioner and the attention of Government should be drawn by him to the failure of any particular Board to make satisfactory progress.

	Percentage.
Godavari	39.7
Tinnevely	43.5
North Arcot	44.6
Madura	45.3
Trichinopoly	45.5
South Canara	46.9

- (f). Excepting the drainage and conservancy schemes for the town of Nandyal in Kurnool, no sanitary works of any marked importance were undertaken in rural tracts, but many minor works, such as improvements to water-supply and village sites and the construction and repair of dustbins, latrines and drains were, as usual, carried out by the various Local Boards and Union Panchayats. The project for the improvement of Nandyal was estimated to cost more than Rs. 56,000 and the Board incurred an expenditure of almost a quarter of this amount without sanction; the matter having then come to the notice of Government further outlay was forbidden, as, in view of other claims upon Local Funds, the expenditure of such a large sum upon a town containing some 6,000 inhabitants only, was considered undesirable.

Out of 42,862 minor towns and villages in the Presidency only 746 were provided with regular conservancy establishments, being an advance of but 75 but upon the number conserved in the preceding year; of these 249 were unions. This small increase is by no means satisfactory; and Local Boards should constantly bear in mind that it is an important portion of their duties to extend conservancy operations as far as the funds at their disposal will admit. In three districts there was a decrease in the number of villages conserved, and in the case of Cuddapah and Madura this was large and should be explained by the Presidents of the District Boards concerned.

- (g) With reference to para. 67 of his report in which one-third of the receipts from land cess has been taken as the available income in which sanitation may claim a share, the Sanitary Commissioner's attention will be drawn to G. O., dated 22nd February 1887 No. 366 L.

12. *General Remarks.*—In addition to 48 Municipal towns, the Sanitary Commissioner and his Deputy apparently visited many smaller towns and villages but their number has not been given. This should be done in future. In August 1889 a Sanitary Board was sanctioned for the Presidency, the Board for the present consisting of the Sanitary Commissioner and the Sanitary Engineer, and rules for its guidance were prescribed in November 1889. The Board however commenced its operations only on the 1st April 1890 when Mr. Jones, lately the Engineer-Vice-President of the

Madras Municipality assumed charge of his office as Sanitary Engineer to Government. A succinct report of the Proceedings of this Board will in future be appended to the Sanitary Commissioner's report as required in para. 2 of the Government of India Resolution, dated 5th December 1889, No. 365. The sanitary inspection work of District Medical Officers cannot be regarded as satisfactory. Compared with 1888, there was a slight falling off and in South

	No. of villages visited.
1888	412
1889	409

Arcot and Madura only five and eight villages respectively were visited. The reason for this should be fully explained. The Government hopes that more attention will in future be paid by District Medical Officers to this portion of their duties in the performance of which they have had ample assistance by the appointment of Assistant Surgeons to take their work at head quarters when absent on tour. District Medical Officers must distinctly understand that the Government expects them to move about their charges and to inspect as much as is practicable and that it will take serious notice of laxity in this respect on their part. In future the question of sewage farming should be dealt with in the report in the manner suggested in para. 5 of the letter from the Government of India, Home Department, read in G. O., dated 17th February 1890, No. 125. Public.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To

The Sanitary Commissioner, Madras.
 „ Sanitary Board.
 „ Sanitary Engineer.
 „ Surgeon General.
 „ Public Department.
 „ Military Department.
 „ Revenue Department.
 „ Inspector-General of Police.
 „ Do. Jails.
 „ Accountant General.
 „ All Collectors.
 „ Presidents of

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LOCAL AND MUNICIPAL.

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Encl.

G.O., 26th August 1890, Nos. 2135-6.

AUGUST.