

THE FIFTY-SIXTH ANNUAL REPORT OF THE
SANITARY COMMISSIONER,

THE THIRTIETH ANNUAL REPORT OF THE
SANITARY ENGINEER

AND

THE TWENTY-FOURTH ANNUAL REPORT OF THE
SANITARY BOARD,

MADRAS,

1919.

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SECTION V.

GENERAL POPULATION.

RAINFALL.

THE total registered rainfall of the Presidency during 1919 was 1,199.22 inches against 1,020.42 in 1918, giving a district average of 47.97 inches. This was greater than the district average of the previous year by 7.15 inches. The distribution of the year's district average among the several monsoons was as follows:—

	INCHES.
Inter-monsoon period (January to May)	5.66
South-west monsoon (June to September)	24.21
North-east monsoon (October to December)	18.10
Total	47.97

2. The average district rainfall of the year in all the monsoons was greater than the district average for forty-five years ending with 1914 by 3.89 inches. As compared with 1918, all the districts excepting Chingleput, Coimbatore, Guntūr, Madras, Nellore and Tinnevely showed an increased rainfall, Ganjām (+ 35.22) heading the list followed by Gōdāvari (+ 18.81), Vizagapatam (+ 18.67), South Kanara (+ 17.39), Malabar (+ 15.85) and Tanjore (+ 15.37). The decrease was highest in Madras (— 30.64). Compared with the average of forty-five years ending with 1914, 18 districts showed an increased and seven a decreased rainfall. The districts which showed an increase of more than 10 inches were Ganjām (+ 21.10) and Tanjore (+ 15.65). The decrease was marked in South Kanara (— 7.76 inches).

3. Considered with reference to the monsoons of the year, the inter-monsoon was almost a failure throughout the Presidency as a whole. The total registered rainfall during this monsoon, although in excess of the average by 13.51 inches, was lower than that of the previous year by 95.25 inches. Only seven districts showed an increased rainfall during this monsoon, prominent among them being Ganjām and Kistna with an increase of 2.36 and 2.35 inches, respectively, over the figures of 1918 and of 4.42 and 3.99 inches, respectively, over the average.

4. The south-west monsoon of the year gave to the Presidency a total rainfall of 605.32 inches against 372.96 inches in 1918; but compared with the average, this represents a slight decrease of 0.32 inch. Compared with 1918, the monsoon was favourable in all but two districts—Guntūr and Nellore—which

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showed a decrease of 4.95 and 2.08 inches, respectively. In South Kanara and Malabar—the districts which fared worst during the preceding year—were recorded the highest increases of 43.68 and 35.66 inches, respectively. But when compared with the average, these two districts showed the highest decreases of 11.46 and 7.35 inches, respectively.

5. During the north-east monsoon, increased rainfall occurred in 17 districts and the decreased rainfall in eight. The increase was over 10 inches in the districts of Ganjam (+15.17), Gōdāvari (+12.67), Tanjore (+12.53) and Vizagapatam (+12.13). In other districts it ranged between 0.84 in Anantapur and 7.16 inches in North Arcot. The decrease was marked in Madras with a shortfall of 26.74 inches over the previous year's figure and of 6.23 inches over the average.

PRICES OF FOOD-GRAINS.

6. Although rainfall during the year can be considered fair, yet, owing to post-war economic stress the prices of the staple food-grains showed no tendency to fall. On the other hand, they were as high as ever. Rice was sold during 1919 at 4.7 imperial seers of 80 tolas per rupee, ragi 6.9, cholam 6.5 and cumbu 6.6 against the previous year's figures of 6.9, 12.0, 9.9 and 10.5, respectively, and against the average prices of 8.5, 14.9, 14.4 and 13.7, respectively. The prices of 1919 represent a rise of 46.8, 73.9, 52.3 and 59.1 per cent, respectively, over those of the previous year and of 80.9, 115.9, 121.5 and 107.6 per cent, respectively, over those of the average.

GENERAL POPULATION.

7. Exclusive of Europeans and Eurasians who numbered 40,928, the population of the Presidency according to the census of 1911 was 41,829,232. The population for which vital statistics were furnished for the year under report continued to be 40,005,735. The excluded number (1,823,497) consisted of the Hill tribes of the Ganjam district (341,622) and of the Vizagapatam district (1,020,077) and the inhabitants of the Laccadive Islands (10,600) of the Banganapalle State (39,343) and of the Pudukkottai State (411,855). The estimated population of the year 1919 was 44,882,056 and its natural growth, as ascertained by adding to the census figure of 1911, the excess births over deaths during the succeeding period up to the end of December 1919, resulted in a population of 43,566,421. The large difference (1,315,635) between these two figures should be attributed to the abnormal high death rate of the Presidency during 1918 on account of influenza and also to the low birth rate in the year under report.

8. Emigration during 1919 was confined to the Straits Settlements, Burma and Ceylon as in the previous year, the number emigrated being 349,404 against 242,722 in 1918. Immigrants (excluding indentured emigrants) totalled 233,295 against 213,782 in the previous year and were less than the emigrants by 116,109.

9. Registration of births and deaths was compulsory during the year in 334 unions and 2,354 villages. A wider extension of the Madras Registration of Births and Deaths Act will be necessary to ensure more reliable vital statistics in our returns. In municipalities where registration of births and deaths is compulsory, non-medical men who do not possess the knowledge required for the correct classification of death statistics are employed and it has therefore not been possible to obtain reliable figures of deaths under several important diseases, such as typhoid, tuberculosis, malaria, etc. It is only in Madras City that medical men are employed as registering officers and this example might well be followed in other big municipalities where Health Officers are on duty.

10. During the year, there were 1,010 prosecutions for failure to report domestic occurrences in municipal towns and the fines imposed by the Magistracy amounted to Rs. 400.

BIRTHS IN DISTRICTS.

11. The total number of births registered in the Presidency during the year 1919 was 1,021,213 against 1,156,204 in the previous year, showing a decrease of 134,991 births. These figures give a birth-rate of 25.5 per mille for 1919 and of 28.9 per mille for 1918 on the census population of 1911. The recorded birth-rate of the year was also less than that of the decennial average for 10 years ending 1918 by 6.4 per mille. In the districts of Madras, South Kanara and Guntur, the largest birth-rates of 36.6, 31.7 and 30.7 per mille, respectively, were recorded against the previous year's rates of 38.5, 36.6 and 33.6 per mille and against the decennial averages of 33.7, 36.5 and 38.2 per mille, respectively. The lowest rates were returned by Nellore (15.8) and South Arcot (19.2). In the remaining districts, the rates varied from 20.8 in Bellary to 29.7 in Malabar. Compared with the previous year, all the districts (excepting Kurnool which had an increased birth-rate of 1.2 per mille) showed a decreased rate. Births fell off by more than 5 per mille in five districts, the decrease being marked in Chingleput (—8.5). Compared with the decennial average, all the districts without a single exception showed decreased birth-rates, South Arcot showing the largest deficit of 11.1 per mille.

12. Considered with reference to sex, the proportion of male to female births was 105.2 to 100, the previous year's figures being 104.6 and 100. Muhammadans, as usual, returned the highest birth-rate of 28.6 against 32.2 per mille in 1918. The birth-rate among Hindus was 25.3 and among Indian Christians 25.1, corresponding rates for 1918 being 28.7 and 26.9, respectively. The decreased birth-rate of the year was thus shared by all communities and was due to abnormal causes during the year as stated already.

13. The total population of the rural tracts where Act III of 1899 was in force during the year was 5,980,068 and that of those where it was not 31,266,953. These populations yielded birth-rates of 25.7 and 24.9 per mille, respectively. Of the 21 districts where the Act was in force, only ten returned rates in excess of those registered in non-compulsory areas. Increases were noticeable in Rāmnād (+19.9), Chingleput (+16.5) and Salem (+10.8) while Kurnool showed the largest decrease of 15.9 per mille.

BIRTHS IN RURAL TOWNS.

14. In the 195 rural towns of the Presidency containing over 5,000 inhabitants (excluding Villupuram which was constituted into a municipality during the year) there were 43,035 births (22,273 males and 20,762 females) against 46,783 (24,140 males and 22,643 females) in 1918. Calculated on the census population of 1911 of these towns, namely, 2,069,228 (1,007,235 males and 1,061,993 females) the above figures give annual birth-rates of 20.8 and 22.4 per mille, respectively. As compared with the previous year, there was an increase in 72 towns and a decrease in 122, the rate in the remaining town of Namakkal being the same in both years. Increases were marked in Sattur (+18.6), Aruppukkottai (+17.6) and Penukonda (+16.4). Among those which showed a decrease, Sankaranayinarkoil in the Tinnevely district (—30.3) headed the list followed by Kovilpatti (—28.5) and Vasudevanallur (—20.2) in the same district and Poonamalle (—19.9), Tirukali-kundram (—18.7) and Madurantakam (—18.0) in the Chingleput district. The birth-rate was highest in Namakkal (62.9) and lowest in Razampeta (3.6). The rates returned by these towns in the previous year were 62.9 and 11.9 per mille, respectively. Other towns which showed larger birth-rates were Kulittalai (49.2) and Dharmapuri (46.0). The rates varied from 40 to 30 per mille in 30 towns, from 30 to 20 in 70 towns and from 20 to 10 in 72 towns. Twenty towns returned rates less than 10 per mille. The above large variations in birth-rates in several of these towns should be attributed chiefly to defective registration.

BIRTHS IN MUNICIPALITIES.

15. Villupuram was newly constituted a municipality during the year, bringing the total number of towns in the Presidency under municipal administration

where compulsory registration of births and deaths was enforced by the operation of the District Municipalities Act of 1884 to 74. These municipal towns had a total population of 2,785,008 (1,386,950 males and 1,398,058 females), according to the census of 1911. The births registered in these towns during the year under report aggregated 90,553 (46,588 males and 43,965 females) against 95,447 (49,165 males and 46,282 females) including the births returned by Villupuram in 1918. These figures represent annual ratios of 32·5 and 34·3 per mille, respectively, against the quinquennial average of 36·5 per mille. Compared with the birth-rate of the rural areas, viz., 25·3 per mille the rate in municipal towns showed an excess of 7·2 per mille, due probably to better arrangements for the registration of vital statistics existing therein. The highest birth-rate of 48·2 per mille was registered in Kodaikanal against 53·0 in the previous year. The rates were also large in Dindigul (47·0), Palni (44·8), Periyakulam (43·6), Tiruvannāmalai (42·8), Ellore (41·3) and Bezwada (41·0). The birth-rate varied from 40 to 30 per mille in 37 towns and from 30 to 20 per mille in 26 towns. The lowest rates were returned by Poddapuram (16·2), Adōni (17·0), Villupuram (18·9) and Dharapuram (19·2). Comparing the year's figures with those of 1918, there was an increased birth-rate in only 25 towns. The increase was above 5 per mille in five towns, viz., Anantapur (+5·3), Kurnool (+5·8), Proddattur (+5·9), Nandyal (+6·2) and Chittoor (+7·8); the decrease was marked in Tiruppattūr (-17·1), Ongole and Cannanore (-9·3 each) and Bodinayakkanur (-9·0). Judged by the quinquennial average, only 9 towns showed an increase and 65 towns a decrease. Noticeable increases occurred in Chittoor (+11·1), Udamalpet (+7·6) and Virudupatti (+7·2) and decreases in Tiruppattūr (-19·4), Adōni (-13·8) and Ongole (-10·2).

DEATHS IN DISTRICTS.

16. Deaths registered during the year numbered 1,089,829 against 1,722,003 in 1918, representing annual ratios of 27·2 and 43·0 per mille, respectively, the quinquennial average being 25·3. The death-rate of the year was thus 15·8 per mille below that of the previous year and 1·9 over that of the decennial average. The highest death-rate of 53·1 per mille was recorded in Madras against the previous year's rate of 61·2 and against the decennial average of 41·9 per mille. In six other districts, the rates varied between 42·2 in Malabar and 30·2 in Gōdāvari. The lowest rates were returned by Nellore (16·0) and South Arcot (19·6). Increased death-rates occurred in the districts of Malabar, Ganjām and South Kanara, the rates being as high as 42·2, 36·7 and 36·8 per mille, respectively, against the averages of 25·3, 19·7 and 25·8 per mille and against the previous year's rates of 33·2, 30·1 and 35·1 per mille, respectively. Compared with 1918, all the other districts showed lower rates. Decreases were marked in all the Ceded Districts, Bellary heading the list with a deficiency of 71·7 per mille over the figure of 1918 and of 15·7 per mille over the average. In Anantapur, Kurnool and Cuddapah, the decreases were 55·3, 52·6 and 36·4 per mille, respectively, as compared with 1918 and 10·8, 8·3 and 6·6 per mille, respectively, as compared with the average. Excepting under "Injuries" a general decrease in the average death-rate of the Presidency occurred during the year under every other head of death causation.

17. Deaths among males were larger during the year than among females, the proportion being 102·1 to 100. Racially considered, the death-rate among Muhammadans was the highest being 33·3 per mille. Hindus and Christians returned 27·0 and 22·6 per mille, respectively. Corresponding figures for the previous year for all the three classes were 41·7, 43·4 and 35·2 per mille, respectively.

18. The death-rate recorded in areas where Madras Act III of 1899 was in force was 25·2 per mille and in areas where it was not 26·6 per mille. Twelve districts yielded rates in excess of those returned by the non-compulsory areas, the increase being largest in Rāmnād (+18·3). Among the districts which showed a decrease, Kurnool ranked first with a deficiency of 15·7 per mille.

19. The infantile death-rate for the districts during the year under report was less than that of the previous year and of the quinquennial average, the ratio being 192·9 per mille of registered births against 230·2 of 1918 and 198·0 of the quinquennium, showing a fall of 37·3 and 5·1 per mille, respectively. Distinquished by sex, the rate of mortality among male infants (198·5) was higher than among female infants (186·9); or, in other words for every 100 deaths, there were 52·8 male and 47·2 female deaths, showing an increase of 0·2 in the case of the former and a like decrease in the case of the latter, as compared with the previous year. The incidence of infantile mortality was the heaviest in Madras district (332·1) as in several previous years. It was also heavy in Chingleput (261·9), the Nilgiris (227·2), Tanjore (214·8), Ganjam (211·4), South Kanara (208·5), Guntur (207·2) and Malabar (203·6). Compared with the previous year, all the districts with the exception of Malabar, South Kanara and Ganjam which showed an increase of 27·7, 4·8 and 3·2 per mille respectively, showed a decreased rate of infantile mortality, Nellore (— 161·8) heading the list followed by Anantapur (— 120·0), Kurnool (— 110·5), Bellary (— 79·7) and Coimbatore (— 71·9). Judged with the quinquennial average, 18 districts showed a decrease and 7 an increase. Here also, the increase was prominent in Malabar (+ 32·8) and the decrease in Nellore (— 57·2).

DEATHS IN RURAL TOWNS.

20. A total of 44,595 deaths was registered during the year in the 195 rural towns of the Presidency containing over 5,000 inhabitants against 58,275 in 1918. Calculated upon the census population of 1911, these figures give annual ratios of 21·6 and 32·7 per mille, respectively, against the quinquennial average death-rate of 23·3 per mille. The highest death-rate of 60·6 per mille was recorded in Namakkal in the Salem district against 70·6 per mille in 1918. Death-rates were also high in Dharmapuri (60·2), Kulittalai (55·4), Russellkonda (52·3), Sattur (51·0) and Tiruvallur (50·9). In seven other towns the rates ranged from 40·5 in Ambur to 47·6 in Badagara and in twenty-seven they were between 30 and 40 per mille. Of the 26 towns where the rates were below 10 per mille, the lowest rates were returned by Tiruvattur (2·8), Vempalli (3·1), Bukkapatnam (3·9) and Razampet (4·5), a clear indication that registration arrangements in these towns are not as they should be.

21. Compared with the previous year 32 towns showed an increase and 162 towns a decrease, the rate in the remaining town of Karaikudi being identical. Increases were prominent in Russellkonda (+ 21·7), Kasaragod (+ 19·2) and Sompeta (+ 17·0) and decreases in Kalyandrug (−100·8), Harpanahalli (− 97·7), Rayadrug (− 84·6), Kosgi (− 82·8), Yadiki (− 53·6), Dharmavaram (− 49·8) and Siruguppa (− 4·2).

DEATHS IN MUNICIPALITIES.

DEATHS IN MONROE

22. Deaths registered in the 74 municipal towns of the Presidency during the year numbered 109,464 against 140,265 (including the deaths returned by Villupuram) in 1918, representing annual ratios of 39·3 and 50·6 per mille respectively, against the quinquennial average of 37·8 per mille. The highest death-rate of 81·6 per mille was returned by Tiruppattur as in the previous year; the other towns showing comparatively higher death-rates were Palni (64·3), Bezwada (63·8), Calicut (59·4), Madras (53·1), Tellicherry (52·6) and Dindigul (51·3). The rates varied from 50 to 40 per mille in seven towns, from 40 to 30 in forty-five and from 30 to 20 in twelve. The lowest rates were returned by Adōni (10·3), Bodinayakkanur (13·8) and Villupuram (16·3). As compared with the results of the previous year, increased death-rates occurred in nine towns, viz., Calicut (+ 16·6), Tellicherry (+ 13·5), Palni (+ 11·2), Parlakimedi (+ 9·9), Cannanore (+ 5·4), Berhampur (+ 4·4), Madura (+ 2·1), Villupuram (+ 1·1) and Chicacole (+ 0·7). All other towns showed decreased death-rates. Decreases were prominent in Nandyal (- 76·0), Bodinayakkanur (- 39·7) and Tiruppattur (- 36·8). Considered with reference to the quinquennial average, the death-rate of the year showed an increase in 42 towns and a decrease in 31

towns, the remaining town of Vizagapatam returning the same death-rate in both cases, viz., 35.3 per mille. The increase was marked in Calicut (+ 26.3) and the decrease in Bellary (- 35.0).

23. The total infantile mortality in municipalities during 1919 averaged 246.2 per mille of the registered births against 282.1 in 1918, the quinquennial average being 252.0 per mille. Distinguished by sex, the mortality among male infants was 257.9 and among female 233.9, or in every 100 deaths there were 53.9 males and 46.1 females. Rates of infantile mortality were very high in Bezwada (374.6), Vizagapatam (347.2), Madras (332.1), Guntūr (303.1) and Berhampur (301.3). The rates varied from 300 to 250 per mille in 11 towns, from 250 to 200 in 34 towns, from 200 to 150 in 16 towns and from 150 to 100 in 7 towns. Excluding Villupuram, which returned an infantile death-rate of only 75.2 per mille, evidently due to defective registration obtaining before its constitution as a municipality towards the close of the year, the lowest infantile death-rate was recorded in Adōni (104.3). Comparing the year's returns with those of 1918, there was an increase in 16 towns and a decrease in 57. In contrast with the quinquennial average, increased mortality among infants occurred in 33 towns and a decreased mortality in 40. The towns which showed marked increases were Vizagapatam (+ 83.0), Tiruppattur (+ 60.5), Berhampur (+ 58.5) and Calicut (+ 54.6). Decreases were over 100 per mille in Udamalpet (- 198.5), Adōni (- 136.8), Cuddalore (- 118.3), Anantapur (- 114.6), Hospet (- 103.1) and Masulipatam (- 100.7). The continued heavy mortality rates among infants should be attributed to the same causes as those enumerated in paragraph 25 of the last year's administration report.

SECTION VI.

GENERAL HISTORY OF CHIEF DISEASES.

CHOLERA.

24. The total number of deaths from cholera in districts was 93,262 against 122,263 in 1918 and 58,939 in 1917, representing annual ratios of 2.3, 3.0 and 1.5 per mille, respectively, the quinquennial average being 1.5 per mille. The disease was present in every district of the Presidency and existed throughout the year in all the districts, except the Ceded districts, the Nilgiris and South Arcot. In twenty-two districts it was a continuation of the epidemic that broke out in the previous year. South Kanara and Ganjām, the districts which returned the lowest death-rate of 0.6 per mille each in 1918, fared worst during the year under report, the death-rates in the said districts being 7.1 and 5.6 per mille respectively against the quinquennial averages of 0.2 and 0.6 per mille respectively. Death-rates were also high in Malabar (5.0), Cuddapah (4.0), Chittoor (3.9), Chingleput (3.3) and North Arcot (3.1). In four districts the rates varied between 3 and 2 per mille and in nine between 2 and 1 per mille and in each of the remaining five districts, the rate was below 1 per mille. As compared with the previous year, all the districts excepting South Kanara, Ganjām, Malabar, Vizagapatam, Madras and Chingleput showed decreased death-rates. Bellary showed a noticeable decrease, the death-rate recorded therein being 0.1 per mille in 1919 against 4.7 in 1918 and 2.4, the quinquennial average. The incidence of cholera mortality throughout the Presidency was heaviest in the months of January and July.

25. In the year under report, cholera was present in 139 rural towns and claimed 3,995 victims against 7,670 in 169 towns in 1918, representing annual ratios of 1.9 and 3.7 per mille, respectively. Sriperumbudur in Chingleput district returned the highest death-rate of 17.6 per mille. Other towns where death-rates were comparatively heavy were Vartirayaruppu (17.2), Badagara (15.6), Madurantakam (12.0), Srungavarapukota (10.9), Wandiwash (10.8), Ponnani (10.4), Tekkali (10.3) and Kasaragod (10.1).

26. From 68 municipal towns, 5,461 deaths from this disease were reported against 7,062 in 69 towns in 1918, yielding annual ratios of 2.0 and 2.6 per mille, respectively. The death-rate was highest in Proddattur (13.8 per mille). Other towns which showed comparatively higher death-rates from this cause were Palni (11.4), Calicut (9.2), Tellicherry (8.6) and Cochin (8.4). Udamalpet returned only one sporadic case, Anantapur, Ongole, Masulipatam and Kurnool two cases each and Periyakulam and Villupuram three each. Five towns which were affected in the previous year were free from the disease during the year under report.

27. Out of 42,052 towns and villages in the Presidency, deaths from cholera were reported from 8,289 as against 8,600 in 1918.

28. The rules issued with G.O. No. 1658 M., dated 21st September 1916, for combating epidemics of cholera continued to be in operation in all municipal towns and their working was so far satisfactory. There were few cases in which the local authorities were not prompt in giving effect to these rules immediately after the occurrence of first cases of cholera. This should be guarded against.

29. Two additional cholera parties were sanctioned during the year (G.O. No. 1033 L., Mis., dated 26th August 1919) bringing the total number of parties at work in the Presidency to eight. Three of these have been made permanent

and five continue to be temporary. The necessity for confirming the temporary parties and for revising the scale of pay and allowances admissible to the Sanitary Inspectors belonging to these parties is great and is deserving of early consideration. The eight parties were employed during the year under report in all the districts excepting Vizagapatam, Cuddapah, Bellary, Anantapur, Chittoor, Coimbatore and the Nilgiris and did some useful work in combating the spread of cholera and in bringing home to the village folk the need for adopting sanitary measures during times of cholera prevalence.

30. The chief measures adopted by the parties for combating the spread of cholera were hankinisation of drinking water-supplies and their subsequent protection as far as possible from contamination; isolation of infected patients and disinfection of their homes, clothing, etc.; administration and distribution of medicines and education of the masses as to the causes of spread of cholera and the advantages of attending to personal hygiene and surroundings. These measures were, on the whole, viewed favourably by the people at large. Sir Leonard Roger's method of treatment of cholera by saline injection was also attempted in a few cases but this treatment was not found popular with the general population. There are several directions in which the working of these parties can be improved in order to justify the large expenditure incurred on their account and this is engaging attention.

31. A statement giving a list of municipal towns which have protected water-supplies is attached (Appendix XIII). A perusal of this makes it plain that mortality from cholera has been on the decrease since the introduction of a piped water-supply system in those towns.

SMALLPOX.

32. Smallpox contributed 41,732 deaths against 58,752 in 1918 with annual ratios of 1.0 and 1.5 per mille respectively against the quinquennial average of 0.8 per mille. No district escaped the disease during the year; and in all of them it was continuously present throughout the year. The Nilgiris returned the highest death-rate of 2.6 per mille against 1.0 in the previous year. Other districts where comparatively high death-rates from this cause prevailed were South Kanara (2.3), Bellary (2.1) and Gōdāvari (1.7). In nine districts the rates varied from 1.5 to 1.0 per mille and in each of the remaining twelve districts the rate was below 1 per mille. Of the deaths registered under this head 12,311 were under one year of age and 13,538 from 1 to 10 years of age or 29.5 and 32.4 per cent respectively of the total mortality from this cause against 32.3 and 34.2 per cent in 1918. The incidence of mortality from this disease was heaviest during January--June 1919.

33. One thousand one hundred and eighty-four deaths from this cause were reported from 132 rural towns against 1,762 in a similar number of towns in 1918, representing annual ratios of 0.6 and 0.8 per mille, respectively. The highest death-rate was recorded in Kasaragod (9.3) followed by Ponnani (7.7), Muthupet (6.1) and Amalapuram (5.4).

34. Nine municipal towns were free from the disease during the year under report. The remaining 65 municipalities had a total of 4,563 deaths against 5,953 in the previous year. These figures yield annual ratios of 1.6 and 2.1 per mille, respectively. In nine towns the total number reported throughout the whole year did not exceed five in each. The death-rate was highest in Rajahmundry (9.4). Next on the list were Mangalore (7.1), Calicut (6.5), Periyakulam (6.1), Gudiyattam (5.7) and Coonoor (5.5).

35. Smallpox cases were reported during the year from 7,000 towns and villages against 6,516 in the previous year. In rural towns, the death-rate from this cause was 0.6 per mille and in rural tracts 1.0 per mille while in municipal areas it was 1.6 per mille. These large variations may be attributed to the indifferent arrangements existing in the several local areas for the registration of vital statistics.

PLAGUE.

36. Deaths from plague fell from 12,859 or 0.3 per mille in 1918 to 5,645 or 0.1 per mille in 1919, the quinquennial average death-rate being 0.3 per mille. Only four districts were completely free from the disease during the year under report. In three districts, there were in all three imported cases and in the remaining 18, the disease was present in an indigenous form. Bellary was on the infected list throughout the year and the death-rate registered in the district was the highest, being 1.6 per mille against 5.1 in 1918 and 4.3, the quinquennial average. Other districts where death-rates were comparatively high were Coimbatore (0.7), Guntūr and Madura (0.3 each) and the Nilgiris, North Arcot and Salem (0.2 each). As compared with the previous year, mortality from this disease showed the largest decline of 3.5 per mille in the Bellary district.

37. From 18 rural towns, 401 deaths from plague were reported against 1,893 in 37 towns in 1918 representing annual ratios of 0.2 and 0.9 per mille, respectively. The towns of Kosgi, Rameswaram and Rasipuram had a single imported case in each. The largest death-rates were returned by Kotturu (6.1), Kadiri (5.3), Vetapalam (4.2), Ambur (3.8), Dharmavaram (3.7) and Palladam (3.6).

38. The number of municipal towns affected with plague during the year was 26 against 36 in 1918. These towns returned 1,460 deaths against 2,000, giving annual ratios of 0.5 and 0.7 per mille respectively. Hospet, Tirupati, Tiruppur, Cocanada, Bezwada, Cochin, Walajapet, Negapatam and Tuticorin reported one imported case each and Vaniyambadi two cases. In the remaining 16 towns from which indigenous cases were reported, the highest death-rates were recorded in Tirupattur and Dharapuram, the figures being 23.4 and 14.5 per mille respectively in 1919 against 7.6 and 0.1 in 1918. Next on the list were Palni 13.2 and Dindigul (9.2) which were free from the disease during the previous year, Udamalpet (7.3) and Guntūr (5.4).

39. Deaths from plague were reported from 363 towns and villages against 764 in 1918.

40. Among persons who have been previously inoculated with anti-plague vaccine, there were 11 deaths against 26 in 1918.

FEVERS.

41. Under "Fevers" 403,499 deaths were registered against 896,088 in 1918, representing annual ratios of 10.1 and 22.4 per mille, respectively, the quinquennial average being 10.5. The large falling off in the number of deaths from this cause as compared with 1918 was due to the absence during the year under report of influenza that was so widely prevalent during the previous year and the consequent low death-rate. Largest death-rates under this head were recorded in Ganjām (25.7), Vizagapatam (22.0), Gōdāvari (16.7) and Malabar (15.1). As compared with 1918, all the districts except Ganjām and Malabar which showed an increased mortality rate of 0.8 per mille each, showed decreased rates under "Fevers." Decreases were prominent in the Ceded districts—Bellary (—55.4), Kurnool (—43.6), Anantapur (—42.2) and Cuddapah (—28.7). Compared with the quinquennial average there was an increase in 11 districts, Ganjām (+ 9.8) and Malabar (+ 6.0) showing the highest increases. The largest number (44,636) of deaths from fevers was recorded in the month of January.

42. A total of 13,243 deaths from fevers was reported in 194 rural towns against 27,525 in 1918 yielding annual ratios of 6.4 and 13.2 per mille, respectively. The mortality rates were largest in Russellkonda (34.3), Bobbili (24.9) and Dharmapuri and Yellamanchuli (22.0 each). In 29 towns the rates varied from 10.2 in Tekkali and Tanuku to 19.5 in Tirumangalam.

43. Nineteen thousand two hundred and twenty-eight deaths from this cause were registered in the 74 municipal towns against 37,899 in 1918, representing annual ratios of 6.9 and 13.7 per mille, respectively. The highest mortality rate was recorded in Nandyal and Parlakinedi (17.0 each) against 77.5 and 12.7, respectively, in 1918. In 13 other towns the rates varied from 10.1 per mille in Berhampur to 15.6 per mille in Narasaraopet.

MALARIA.

44. The Malaria Board of the Presidency existed only in name, there being no executive officer to work under them. No malaria investigations were therefore undertaken during the year under their direct control nor anti-malarial measures carried out on a large scale. It is only in Madras City and Ennore and its surroundings in the Chingleput district that anti-malarial operations on a somewhat large scale were undertaken during the year. The results obtained in these tracts are satisfactory.

45. Itinerating dispensaries were at work during the year in the district of Nellore and Dhona taluk in the Kurnool district. The work turned out by these dispensaries was only spasmodic due to the paucity of properly trained medical men for their charge. To be of value these itinerating dispensaries need remodelling.

DYSENTERY AND DIARRHOEA.

46. Under this head, there was a total of 74,074 deaths in 1919 against 79,841 in 1918 with annual ratios of 1.9 and 2.0 per mille, respectively, against the quinquennial average of 1.7 per mille. The largest number of deaths under the head was registered as usual in Madras which had a mortality rate of 11.4 per mille. The rates were also larger in Malabar (5.6), the Nilgiris (5.0), South Kanara (4.7), Chingleput (3.2), Coimbatore (2.5) and North Arcot (2.4). As compared with the previous year, there was an increase in four districts and a decrease in 19, the death-rates in the remaining two districts being identical. Malabar showed the largest increase of 2.7 per mille when compared with 1918 and 2.3 per mille when compared with the quinquennial average.

47. Two thousand eight hundred and eighty-three deaths from these causes were registered in 170 rural towns against 3,267 in 1918 with annual ratios of 1.4 and 1.6 per mille, respectively. The death-rates were largest in Tiravallur (7.4), Tiruvottiyur (7.0), Srungavarappukota (6.1), Tekkali (5.9), Sattur (5.8) and Namakkal (5.0).

48. The mortality registered under this head in the 74 municipal towns amounted to 15,023 against 15,629 in 73 towns in 1918, the annual ratios being 5.4 and 5.1 per mille, respectively. The largest death-rates were returned by Madras (11.4), Vizianagram (10.5), Vizagapatam (10.0), Cochin (9.8), Chingleput (9.5) and Dindigul (9.3). In 18 towns the rates varied from 5.0 per mille in Gudiyattam to 8.9 per mille in Palamcottah. Compared with the previous year, there was an increase in 21 towns and a decrease in 50, the rates in the remaining three towns being the same in both years. The municipal death-rate from these two causes exceeded the rural death-rate by 3.8 per mille.

49. Deaths from dysentery and diarrhoea were reported from 14,047 towns and villages against 14,271 in 1918.

RESPIRATORY DISEASES.

50. Deaths registered from this cause aggregated 48,984 in 1919 against 63,199 in 1918, representing annual ratios of 1.2 and 1.6 per mille, respectively, against the quinquennial average of 1.2 per mille. As in the previous nine years, Madras headed the list with a mortality rate of 10.2 per mille. The rates were also large in the Nilgiris (4.3) and Kistna (3.0) as in the previous two years. Compared with the quinquennial average, there was an increase in 11 districts and a decrease in 9, the rates in the remaining districts being the same.

51. Two thousand and seventy-six deaths from respiratory diseases were registered in 145 rural towns against 2,456 in 1918, with annual ratios of 1.0 and 1.2 per mille, respectively. The death-rate was largest in Sholinghur (8.2). It was also large in Jaggayapet and Saidapet (5.6 each), Nuzvid (5.4), Tiruvallur (5.2) and Tanuku (5.1).

52. A total of 10,331 deaths from respiratory diseases was reported during the year against 12,983 in 1918 yielding annual ratios of 3.7 and 4.7 per mille,

respectively. The largest death-rate was returned by Madras (10.2) as in the previous year followed by Cochin (7.8), Ootacamund and Tirupati (7.7 each), Coonoor (6.9), Conjeeveram (6.8) and Tellicherry (6.3). Twelve towns reported no deaths from this cause. Out of 42,052 towns and villages, 10,926 returned deaths from this cause against 13,211 in 1918.

INJURIES.

53. The deaths returned under this head numbered 8,445 against 8,405 in 1918, the annual ratio being 0.2 per mille in both the years. The mortality rate for rural towns was 0.2 per mille and that for municipal towns 0.4 per mille. Suicides among males numbered 565 and among females 583.

54. A total of 62 deaths from rabies was registered during the year under report against 74 in the previous year.

ALL OTHER CAUSES.

55. Deaths registered from this head aggregated 414,188 against 480,596 in 1918 and they represent annual ratios of 10.4 and 12.0 per mille, respectively. About 38 per cent of the total mortality in the Presidency during the year was classified under this all-absorbing head. The death-rate from these causes exceeded 10 per mille in 14 districts. Of the 11 districts which showed a death-rate of below 10 per mille, comparatively fewer deaths were registered in Vizagapatam (1.8), Ganjam (2.3), Nellore (4.3), Cuddapah (4.5) and Kurnool (5.1) while the death-rates in these districts from "fevers" were proportionately higher.

56. In rural towns a total of 20,517 deaths was registered in 1919 against 23,442 in 1918, representing annual ratios of 9.9 and 11.2 per mille, respectively. In municipal towns, the death-rate under this head was 18.8 per mille against 20.8 per mille in 1918. It exceeded 20 per mille in 20 towns, was between 10 and 20 per mille in 43 towns and was below 10 per mille in 11. The highest rate was recorded in Bezwada (39.8) and the lowest in Adoni (4.9).

SECTION IX.

SANITARY WORKS—CIVIL.

MUNICIPALITIES.

57. The municipalities continued to be administered under the District Municipalities Act IV of 1884 and its provisions were extended to the major union of Villupuram during the year, thus raising the number of municipalities from 73 to 74 with an aggregate population of 2,799,530.

58. The attached statement shows the progress made in water-supply and drainage schemes :—

Statement showing the position of Municipal Water-supply and Drainage Schemes in 1919.

Water-supply.				Drainage.			
Opened.	Under execution.	Sanctioned.	Under investigation; investigation ordered or plans and estimates submitted or being revised under orders or held over for want of funds or other causes.	Opened.	Under execution.	Sanctioned.	Under investigation; investigation ordered or plans and estimates submitted or being revised under orders or held over for want of funds or other causes.
Adōni. Berhampur. Bezwada. Chidambaram. Cocanada. Conjeeveram. Coonoor. Cuddapah. Dindigul. Ellore. Erode. Gudiyāttam. Guntūr. Kodaikānal. Kumbakōnam (partial). Kurnool. Madura. Masulipatam. Negapatam. Nellore. Ootacamund. Periyakulam. Salem. Tanjore. Tirupati. Trichinopoly. Vellore. Vizagapatam (including Waltair). Vizianagram.	Adōni (improvements). Anantapur. Bellary (full power test). Chingleput. Cuddapah (improvements). Guntūr (Water works improvement). Madura (improvements). Narasaraopet. Tirupati. Tuticorin (Tambara-parani scheme). Vizagapatam (water works improvements).	Conjeeveram (water works improvements). Coonoor. Coimbatore (Police Recruits' school). Ootacamund (water-supply, southern portion). Salem (widening supply channel to Panamaratupatti tank). Tanjore (improvements). Vellore (water works improvements).	Bellary. Calicut. Chicacole. Cochin. Chittoor. Coimbatore (Siruvani scheme). Coimbatore (Forest College). Cuddalore. Dharapuram. Dindigul (water works improvements). Kodaikānal (extension). Mangalore. Mannārgudi. Nandyal. Ongole. Palghat. Palni. Parlakimedi. Rajahmundry. Salem (improvements). Srirangam (separate scheme). Srivilliputtūr. Tirupattūr. Tiruvālūr. Tiruvannāmalai. Trichinopoly (improvements). Vāniyambādi. Walajapet.	Ootacamund. Madura. Vellore.	Kumbakōnam (Part I Conservancy lanes).	Adōni. Anakāpalle. Bellary. Berhampur. Bezwada. Bimlipatam. Calicut. Chepank buildings. Chidambaram. Chingleput. Chittoor. Cocanada. Cochin. Cuddapah. Ellore. Erode. Guntūr. Kumbakōnam (Part II). Kurnool. Mangalore. Mannārgudi. Nandyal. Negapatam. Ootacamund (improvements to main sewer). Ootacamund (improvements to septic tank). Poddapuram. Periyakulam. Rajahmundry. Salem. Srirangam. Tanjore. Tellicherry (Chali). Tenali. Tinnevely. Tirupati. Trichinopoly. Vāniyambadi. Vizianagram.	

It will be seen that two towns—Ellore and Erode—were provided with a piped water-supply. As regards drainage, the only municipality which possesses a completed drainage scheme is Ootacamund. The result of its working is, however, unsatisfactory and the question of the improvement of its working is under consideration. The drainage schemes in Madura and Vellore were still under execution, when the year closed. Conditions as to water-supply and drainage in the other towns were very much the same as recorded in the previous year. Thus it will be seen that the majority of our municipalities are deficient in the two most important factors of sanitation, viz., protected water-supplies and efficient drainage systems, and until these deficiencies are made good the application of measures to safeguard public health is beset with difficulties and can only be palliative.

59. The details of the major works carried out during the year are given in the report of the Sanitary Engineer to Government.

60. From particulars furnished by municipalities it is observed that there was a larger supervising sanitary staff employed during 1919 than in the previous year, the increase occurring chiefly among sanitary inspectors and peons. There was a fall in the number of sanitary overseers and sanitary maistris. As regards the menial conservancy staff there was a slight fall in the number of sweepers and a rise in the number of scavengers. Among individual municipalities the inadequacy of both the supervising and menial staff is still apparent and the deficiencies have been brought to notice when reviewing the budget estimates and in the inspection notes. Year after year attention has been drawn to the importance of employing an adequate staff for sanitary purposes, but to little purpose in most cases, the plea urged for not rectifying the defect being 'want of funds.' The plant employed for the removal of night-soil and rubbish in most municipalities is very unsatisfactory—being not only inadequate but of the most primitive description and much the worse for wear. Although Government have in G.O. No. 623 M., dated 21st April 1915, issued instructions for the formation of a depreciation reserve fund for the renewal and repair of conservancy plant, most municipalities have not paid much attention to the matter trusting to the generosity of Government to provide the necessary funds for the purpose by grants from Provincial revenues when the plant has become hopelessly unserviceable. The result is that with an inadequate staff and unsatisfactory plant the conservancy of the towns suffers and is a reproach to the municipal administration.

61. The scheme of employing health officers for supervising sanitation made no progress during the year, several towns for which second-class health officers were sanctioned not having employed them owing to the unwillingness on the part of medical graduates to accept service under municipalities. It was hoped that after the war there would be a number of candidates for employment as health officers, but this hope has not been realized; obviously the service is not attractive. Unless the question of the appointment, pay, terms of service, etc., of municipal health officers is placed on a satisfactory footing, the popularity of the service will not improve. For the present it is hoped that the decision arrived at the recent Municipal Conference to provincialize the service will to some extent solve the difficulty now experienced in recruiting them. Similarly considerable difficulty is experienced in recruiting sanitary inspectors. Although a large number of men (1,174) have qualified up to date local bodies find it difficult to fill up sanctioned appointments—these men preferring other employment to service under municipalities or local boards. The result is that unqualified men have to be employed as provided for by G.O. No. 2013 L., dated 21st November 1913. That this is undoubtedly due to the inadequacy of the pay offered by municipalities is shown by the fact that no difficulty is met in recruiting for the cholera parties or the vaccination department.

62. It is satisfactory that some activity is noticeable in providing increased public latrine accommodation of an improved type. The total number of all description of latrines amounted to 1,793 against 1,775 in the previous year. Of these 1,223 against 1,176 were type design and pucca built non-type design latrines with seats,

drains, etc. The number of insanitary latrines was still large, but these are being gradually replaced by type design latrines.

63. The public latrine accommodation in most municipalities was adequate for the requirements of the population, but in 22 it was deficient, the deficiency being mostly in Calicut, Palghat, Masulipatam, Madura, Bodinayakkanur, Ellore and Tiruvālūr; in the remaining 16 towns the deficiency varied from 1 in Cannanore and Bezwada to 7 each in Rajahmundry, Vellore and Hospet.

64. There was also an increase in the number of private latrines from 158,836 in 1918 to 161,498 in 1919. Of the total number of private latrines no less than 143,641 or 89.6 per cent were conserved by municipal agency under the private scavenging system which shows an advance over the previous year. It is observed, however, that whilst municipal councils have shown considerable enterprise in extending the private scavenging service, they were not equally energetic in enforcing section 207 of the Municipal Act in the matter of private latrines as shown by the fact that only 39.8 per cent of the houses assessed to the tax on buildings were provided with the convenience of private latrines, the most backward in this respect being Narasaraopet, Bodinayakkanur, Hospet, Proddatur, Villupuram, Tiruvālūr and Nandyal, where the percentage varied from 5 to 10. All of these with the exception of Hospet and Nandyal are, however, comparatively new municipalities, but in 15 of the older towns the percentage was below 25. The private scavenging system is in need of increased attention in the Municipalities of Erode, Tiruppur, Udumalpet, Chittoor, Virudupatti and Poddapuram. By a more rigorous enforcement of the law efforts should be made to insist upon the house owners providing latrine accommodation in their houses and to bring as many of them as possible under the municipal private scavenging service.

65. There was little change in the conservancy arrangement in vogue. Conservancy was worked on the contract system in most municipalities and the rubbish and night-soil were stacked and trenched in depots and sold by auction and where there was a demand for this form of manure for agricultural purposes the sale-proceeds brought in a fair return, but in others, much of this valuable product went to waste, although with a little enterprise, it should be possible to turn it to good account and make it a valuable asset which might be a set off against the expenditure on conservancy and provide funds for the acquisition of sites for the extension and improvement of rubbish and night-soil depots. The conversion of night-soil into poudrette has not found favour in this Presidency although attention was drawn to the matter years ago.

66. Little attempt was made to raise crops on the night-soil trenching ground except in Bellary, Trichinopoly and Tuticorin. In the two former the trenching ground was leased out and grass crops were raised whilst in Tuticorin, the crops raised consisted of vegetables, etc. The chief obstacle to the system is the difficulty of water for irrigating the crops.

67. There was little progress made in sewage farming and the remarks made in the reports of previous years are repeated. This method of disposing of sullage was in force in the municipalities, where extensive disposal works exist, viz., Ootacamund, Mannārgudi, Tuticorin, Chingleput, Anakāpalle, Chicacole, Nandyal, Conjeeveram, Kumbakōnam, Guntūr, Negapatam, Rajahmundry and Vizianagram. In Tuticorin the sewage is collected in a cistern and thence passed over a bacterial filter the effluent being used for irrigation. The crops raised on the sewage farms consist of various kinds of vegetables, plantains, grasses, etc. In Ootacamund rye grass is grown. The expenditure on the Ootacamund farm far exceeded the income.

68. The aggregate allotment and expenditure on sanitation for the nine months ending December 1919 amounted to Rs. 32,63,874 and Rs. 22,08,500 against Rs. 29,88,311 and Rs. 29,85,113, respectively. The provision for sanitation was 44 per cent of the available income of all municipalities, whilst the expenditure amounted to 68.4 per cent of the allotment, leaving about 32 per cent of the allotment to be expended in the remaining three months of the year. Of the total allotment, Rs. 4,92,160 was set apart for the improvement of water-supply,

the remainder being allocated to conservancy, construction and repair of drains, markets, slaughter-houses, latrines, sanitary arrangements during fairs and festivals, etc. The allotment and expenditure for the full year 1918-19 amounted to Rs. 29,75,122 and Rs. 28,05,870 respectively.

DISTRICT BOARDS.

69. The following statement shows the efforts made for providing a protected water-supply and efficient drainage in the rural areas:—

Statement showing the position of Water-supply and Drainage Schemes in Rural Areas in 1919.

Opened.	Under execution.	Sanctioned.	Under investigation; investigation ordered or plans and estimates submitted or being revised under orders or held over for want of funds or other causes.
<i>Water-supply.</i>			
Nil.	Gudur Rameswaram	Nil.	Arcot. Aruppukottai. Alagarkovil (Madura district). Bodinayakanur. Gobichettipalayam. Guntakal. Hindupur. Kalahasti. New Engineering College, Guindy. Madakasira. Mettupalaiyam. Palacole. Panruti. Penukonda. Poddapuram. Pollachi. Ranipet. Salur. Tiruppur. Tiruchanur. Udamalpet. Uravakonda.
Nil.	Nil.	<i>Drainage.</i> Nil.	New Engineering College, Guindy. Lunatic Asylum, Madras.

70. No material progress is noticeable in respect of water-supply and drainage, the chief difficulty being the lack of funds. The condition of water-supply and drainage in rural areas has been frequently reported upon and needs no recapitulation—conservancy is no better. It is hoped that the amended Local Boards Act and the efforts that are being made by the Health and Welfare Associations to spread a knowledge of sanitation will improve matters. The District Boards of Gōdāvari and Kistna dispensed with the services of their sanitary assistants during the year and these subordinates were employed only in the District Boards of Tanjore and North Arcot.

71. The number of unions and other villages where conservancy arrangements existed rose from 1,219 in 1918 to 1,306 in the year under report. Of these 1,148 were unions and 158 were non-union villages. Calculated on the total number of villages, only 2.5 per cent of them were conserved.

72. The total assignment for sanitation during 1919 amounted to Rs. 17,74,860 which was 26.4 per cent of the income and the expenditure during the nine months of the official year for which information is available was Rs. 8,12,495. In other words the expenditure was 45.7 per cent of the allotment. The largest assignment was made for the improvement of water-supply, viz., Rs. 6,62,957. The District Boards of Trichinopoly and Salem made the best use of the sanitary allotment having spent 78 and 71 per cent of it during the nine months. The allotment and expenditure for the full year 1918-19 were Rs. 16,10,363 and Rs. 10,53,609 respectively.

73. *Maintenance of village sanitary inspection book.*—This record is maintained in all the districts except Malabar, South Kanara, the Nilgiris and Koraput where there are no unions. The District Medical and Sanitary Officers of Vizagapatam, Gōdāvari, Kistna and Coimbatore report that the book is not properly maintained in these districts. No information has been furnished by the District Medical and Sanitary Officer of North Arcot. The revision of this book is now under consideration.

74. *Mecca pilgrimage.*—Nil.

SECTION X.

GENERAL REMARKS AND PERSONAL PROCEEDINGS.

75. The post of Sanitary Commissioner was held by Major Justice up to the 12th February 1919 when he proceeded on combined privilege leave and furlough handing over charge to Dr. Matthew, Deputy Sanitary Commissioner, Central Range. In the month of January, Major Justice proceeded with the permission of Government to attend the Science Congress at Bombay. Dr. Matthew was relieved on 15th February 1919 by Lieut.-Col. Ross, I.M.S. During the period he held office, he proceeded on the 18th February to Guntūr to examine and report on the drainage arrangements of the Municipal Hospital there and opportunity was taken also of inspecting a few of the sanitary schemes and the head water-works. In March he made a routine sanitary inspection of the municipalities of Ellore, Vizianagram and Berhampur where he inspected also the sanitary schemes and the head water-works returning to headquarters on the 24th March. En route to Vizianagram and Berhampur he halted at Vizagapatam and inspected the head water-works. He then made a brief inspection of the anti-malarial work at Ennore and its surroundings and at the request of the Collector of Chingleput, the extension site at Ambattur. In April he proceeded on privilege leave and was relieved on the 16th April by Major M. J. Quirke, I.M.S., on return from Military duty. On the 27th April, Major Quirke visited Dindigul to report on the question of the exclusion of certain sites from the municipal limits and on certain sanitary works the Municipal Council had in view. In May he made a routine sanitary inspection of Kodaikānal Municipality and submitted a written report thereon. Returning thence he proceeded to Ootacamund to confer with Government on certain matters which were to be discussed at the informal Conference of Sanitary Commissioners at Simla. On the 18th May, he journeyed to Simla to attend the Medical and Sanitary Conference which was to assemble there. On his return journey from Simla, he took the opportunity of examining the working of the mechanical filters at Poona returning to Madras on the 6th June. Meanwhile Lieut.-Col. Ross had rejoined from privilege leave on the 23rd May and Major Quirke was considered as on deputation from that date until the 6th June when he again assumed charge of the Office of Sanitary Commissioner. On the 17th June, he at the request of the Surgeon, inspected and reported upon the drainage arrangements of the Guntūr Municipality in company with the Sanitary Engineer. Thereafter he inspected the localities for which certain drainage proposals were under the consideration of the Sanitary Engineer. In July Major Quirke made an inspection of certain famine areas in the Ganjām district when he inspected the kitchen at Kallikotta and the villages of Bijapet, Langaleswar, Theladia, Mathura and Tirida returning to headquarters on the 25th July. He then proceeded on leave on the 4th August and was relieved by Dr. Matthew who held charge up to the 22nd. During the period he inspected Salem for the inspection of the sites proposed for the sewage farm and septic tank in the Salem drainage scheme in respect of which a report was due to the Sanitary Board. Opportunity was at the same time taken of inspecting certain proposals of the municipality for improving the drainage of a locality where there was much stagnation of sullage and storm water. The attention of the Chairman, Municipal Council, Salem, was also drawn to the unsatisfactory condition of the rubbish depot on the Attampatti Road. On the 22nd August, Dr. Matthew was under the orders of Government relieved by the Hon'ble Surgeon-General G. G. Giffard who continued in charge until the end of the year.

During the period he visited Hospet, Kamalapuram, Bellary, Nandyal, Guntūr, Bapatla (Stuartpuram), Tenali, Ongole, Coimbatore, Ootacamund, Salem, Cocanada, Ellore, Kavali (Criminal Settlement), Nellore, Tanjore and Trichinopoly.

These visits synchronized with his inspection as Surgeon-General and although no detailed sanitary inspection of these localities were made, he met the Chairmen of the Municipal Councils concerned, went round the towns and examined and discussed with them the salient sanitary defects and advised remedial measure. He examined also the sanitary works sanctioned or under contemplation by the Municipal Councils.

In addition to the above and inspections carried out at headquarters and attending to routine office work, meetings and Conference convened for discussion of sanitary matters, the King Institute received constant attention.

No candidates qualified during the year as first or second class Health officers. Forty-one went through successfully the course prescribed for qualified Sanitary Inspectors and Assistant Sanitary Inspectors.

Thirteen Sanitary Inspectors in the employ of local bodies underwent the quinquennial training prescribed in G.O. No. 660 L., dated 21st May 1910, and G.O. No. 1108 L., dated 16th June 1914, and 28 Inspectors qualified as vaccinators.

The checking of stores and the maintenance of service registers of the office establishment have been duly attended to.

OFFICE OF THE SANITARY COMMISSIONER,
MADRAS, 1st October 1920.

E. L. PERRY, Lieut.-Col., I.M.S.,
Sanitary Commissioner, Madras.

APPENDIX.

VITAL STATISTICS OF THE GENERAL POPULATION.

No. I.—Statement showing the Births registered in the districts of the Madras Presidency during the year 1919.

No. 1. — Statement showing the Data Registered in the various Districts.														
Number.	2			3	4		5		6		7	8	9	10
	Population (exclusive of Europeans and Eurasians as per census of 1911).				Population (exclusive of Europeans and Eurasians for which returns were received).		Number of births registered (exclusive of Europeans and Eurasians and still-births).		Ratio of births per 1,000 of population.					
	Males.	Females.	Total.		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
1	483,945	468,738	952,683	Anantapur	483,945	468,738	952,683	12,589	12,058	24,647	104.4	5.3	...	16.3
2	496,637	485,007	981,644	Bellary	496,637	485,007	981,644	10,466	9,983	20,449	104.7	...	...	15.2
3	704,127	689,083	1,393,210	Chingleput	704,127	689,083	1,393,210	20,615	19,810	40,425	104.1	...	...	15.7
4	629,232	609,222	1,238,454	Chittoor	629,232	609,222	1,238,454	14,741	14,366	29,107	102.6	5.0	...	16.0
5	1,043,813	1,071,505	2,115,318	Coinatore	1,043,813	1,071,505	2,115,318	28,901	27,173	56,074	106.6	...	...	15.6
6	454,027	439,915	893,942	Cuddapah	454,027	439,915	893,942	10,220	9,708	19,928	105.3	1.1	...	14.3
7	868,822	1,001,819	1,870,641	Ganjam Plains ...	868,822	1,001,819	1,870,641	21,072	19,997	41,069	105.4	...	...	14.5
	175,779	174,681	350,460	Do. Agency	4,373	4,465	8,838	97	78	175	132.9	...	...	51.5
8	1,044,601	1,176,500	2,221,101	Total	873,195	1,006,284	1,879,479	21,169	20,070	41,239	105.5	...	...	14.8
	707,297	737,836	1,445,133	Godavari Plains ...	707,297	737,836	1,445,133	18,611	17,856	36,467	104.2	...	...	4.2
	104,489	102,399	206,888	Do. Agency	104,489	102,399	206,888	1,902	1,733	3,635	109.8	...	...	17.8
	811,786	840,235	1,652,021	Total	811,786	840,235	1,652,021	20,513	19,589	40,102	104.7	...	...	5.9
9	856,548	840,782	1,697,330	Guntur	856,548	840,782	1,697,330	20,623	25,445	46,068	104.6	3.2	...	19.4
10	994,802	1,002,452	1,997,254	Kistna	994,802	1,002,452	1,997,254	28,270	26,856	55,126	104.9	2.5	...	16.7
11	491,154	483,305	974,459	Kurnool	491,154	483,305	974,459	10,856	10,239	21,095	106.0	0.1	...	14.8
12	259,002	245,136	504,138	Madras	259,002	245,136	504,138	9,407	8,967	18,374	105.9	...	...	20.0
13	945,872	986,134	1,932,006	Madras	945,872	986,134	1,932,006	25,117	23,974	49,091	104.8	3.3	...	14.9
14	1,482,568	1,532,931	3,015,499	Malabar	1,477,128	1,527,771	3,004,899	45,666	43,545	89,211	104.9	...	...	12.5
15	665,011	682,581	1,347,592	Nellore	665,011	682,581	1,347,592	10,744	10,204	20,948	105.3	...	...	12.7
16	60,956	53,035	113,991	Nilgiris, The	60,956	53,035	113,991	1,482	1,423	2,905	104.1	0.2	...	15.6
17	968,545	990,387	1,958,932	North Arcot	968,545	990,387	1,958,932	27,423	26,087	53,510	105.1	...	...	17.7
18	786,127	872,225	1,658,352	Ramanad	786,127	872,225	1,658,352	18,965	17,910	36,865	105.8	1.6	...	12.1
19	1,019,806	1,023,794	2,043,600	Salem	1,019,806	1,023,794	2,043,600	28,141	26,745	54,886	108.5	...	...	17.3
20	1,172,341	1,189,400	2,361,741	South Arcot	1,172,341	1,189,400	2,361,741	33,117	32,341	65,458	108.5	...	...	14.0
21	577,832	618,898	1,196,730	South Kanara	577,832	618,898	1,196,730	19,449	18,475	37,924	106.6	...	...	18.1
22	1,122,393	1,231,189	2,353,582	Tanjore	1,122,393	1,231,189	2,353,582	29,566	27,728	57,294	107.0	...	...	14.5
23	865,403	924,819	1,790,222	Tinnevely	865,403	924,819	1,790,222	25,983	24,241	50,224	105.8	...	...	17.0
24	1,075,678	1,164,512	2,240,190	Trichinopoly	1,075,678	1,164,512	2,240,190	32,820	31,569	64,389	105.8	0.4	...	15.0
25	1,048,824	1,118,342	2,167,166	Vizagapatam	1,048,824	1,118,342	2,167,166	30,611	29,063	59,674	105.3	...	...	17.3
	511,176	508,901	1,020,077	Do. Agency	...	...	...	...	...	...	...	...	...	...
25	20,584,206	21,245,026	41,829,232	Grand Total for the Presidency.	19,679,869	20,325,876	40,005,735	523,544	497,688	1,021,233	105.2	...	...	16.2
269	2,394,185	2,460,051	4,854,236	Total of Town circles in the Presidency.	2,394,185	2,460,051	4,854,236	66,861	64,727	131,588	106.4	...	...	16.3
226	18,190,021	18,784,975	36,974,996	Total of Rural circles in the Presidency.	17,285,974	17,865,825	35,151,499	454,688	432,942	887,625	105.0	...	...	16.2

No. II.—Statement of Births and Deaths registered in the districts of the Madras Presidency during the year 1919.

Number.	Districts.	Area in square miles.	Average population per square mile.	Population (exclusive of Europeans and Eurasians) for which returns were received.		Births.	Number of deaths registered (exclusive of Europeans and Eurasians and born-dead).		8	Ratio of deaths per 1,000 of population from										Mean ratio of deaths per 1,000 during previous five years.						
				Males.	Females.		Total.	Total number.		Birth-rate per 1,000 of population.	Males.	Females.	Total.	Number of deaths of males to every 100 females.	Cholera.	Small-pox.	Plague.	Revers.	Dysentery and diarrhoea.	Injuries.	All other causes.	Males.	Females.	Total.		
1	Anantapur	6,718	143.3	493,945	468,738	962,683	24,647	25.6	10,001	9,457	19,548	106.7	1.0	1.1	0.1	3.1	0.7	1.3	0.2	12.8	20.4	20.2	20.3	34.9	36.9	35.9
2	Bellary	5,875	167.1	496,637	485,067	981,644	20,459	20.8	10,970	10,208	21,178	107.5	0.1	2.1	1.6	4.6	1.3	1.1	0.2	10.6	22.1	21.0	21.6	45.1	45.8	45.5
3	Chingleput	3,072	456.8	704,127	699,063	1,403,210	40,425	28.8	22,578	21,939	44,517	102.9	3.3	0.8	0.01	5.5	3.2	1.4	0.2	17.3	32.1	31.4	31.7	30.8	31.1	30.9
4	Chittoor	3,072	218.2	629,232	609,222	1,238,454	29,107	23.5	16,203	15,057	31,260	107.6	3.9	0.7	0.02	6.4	1.5	1.4	0.2	11.1	25.7	24.7	25.2	25.4	26.5	25.9
5	Coimbatore	7,196	294.0	1,043,813	1,071,305	2,115,318	56,134	26.5	23,544	21,968	45,512	107.2	1.2	0.9	0.7	4.1	2.5	1.5	0.2	10.4	22.6	20.5	21.5	26.6	25.5	26.1
6	Cuddapah	5,802	151.7	451,027	439,915	893,942	19,928	22.3	9,976	8,969	18,945	111.2	4.0	0.5	0.03	10.5	0.6	0.8	0.3	4.5	22.0	20.4	21.2	29.9	30.2	30.0
7	{ Ganjam Plains. Do. Agency.	4,896	382.1	868,822	1,001,819	1,870,641	41,069	22.0	33,831	34,442	68,273	98.2	5.6	0.9	...	25.5	1.5	0.4	0.3	2.3	38.9	34.4	36.5	22.7	19.3	20.9
		199	44.4	4,373	4,465	8,838	170	19.2	304	321	625	94.7	0.2	5.1	...	61.1	2.0	0.4	0.2	1.7	69.5	71.9	70.7	82.1	29.9	31.0
8	{ Godavari Plains. Do. Agency.	2,545	567.8	707,297	737,836	1,445,133	36,467	25.2	21,095	21,407	42,502	98.5	1.2	1.7	0.001	15.4	0.9	1.9	0.2	8.1	29.8	29.0	29.4	28.9	27.6	28.2
		3,676	56.3	1,04,489	1,02,399	2,06,888	3,635	17.6	3,876	3,442	7,318	112.6	0.9	1.1	...	25.1	1.3	1.2	0.3	5.5	37.1	33.6	35.4	31.3	29.7	30.5
9	Total	6,221	265.6	811,786	840,235	1,652,021	40,102	24.3	24,971	24,849	49,820	100.5	1.1	1.7	0.001	16.7	0.9	1.8	0.2	7.8	30.8	29.6	30.2	29.2	27.8	28.5
		5,735	296.0	856,548	849,782	1,697,330	52,098	30.7	24,185	22,551	46,736	107.2	0.7	1.1	0.3	13.1	0.7	1.8	0.2	9.6	28.2	26.8	27.5	30.6	29.4	30.0
10	Kistna	5,907	338.1	924,802	1,002,452	1,927,254	55,226	27.7	25,530	24,757	50,307	103.2	0.5	1.0	0.01	11.5	0.7	3.0	0.2	8.3	25.7	24.7	25.2	30.0	28.5	29.2
11	Kurnool	7,580	123.4	471,379	463,737	935,116	21,095	22.6	10,901	10,101	21,002	167.9	0.3	0.7	0.1	14.1	0.5	0.9	0.2	5.1	23.1	21.8	22.5	38.8	38.7	38.8
12	Madras	27	18,071.8	259,002	243,136	502,138	18,464	38.6	13,269	13,480	26,749	98.4	1.3	1.2	0.03	6.5	1.4	10.2	0.4	22.1	51.2	55.0	53.1	42.0	45.4	43.7
13	Madura	4,916	303.6	945,872	986,134	1,932,006	49,031	25.4	21,764	20,269	42,033	103.9	1.4	0.6	0.3	5.5	1.4	0.9	0.2	11.6	23.0	21.3	22.1	24.7	22.7	23.7
14	Malabar	5,705	518.5	1,477,125	1,527,771	3,004,896	89,211	29.7	62,639	64,289	126,928	97.4	5.0	1.4	0.03	15.1	5.6	1.6	0.3	13.2	42.4	42.1	42.2	26.5	24.6	25.5
15	Nellore	7,973	166.5	665,011	662,581	1,327,592	20,948	15.8	11,067	10,133	21,200	103.2	2.2	0.5	...	8.0	0.4	0.4	0.2	4.3	16.6	15.3	16.0	21.6	20.4	21.0
16	Nilgiris, The	1,009	119.0	60,966	53,035	113,991	2,905	25.5	2,074	1,914	3,988	108.4	0.2	2.6	0.2	13.0	5.0	4.3	0.4	9.3	34.0	30.1	35.0	31.4	34.8	33.0
17	North Arcot	4,920	338.4	969,545	990,387	1,959,932	53,510	27.3	27,126	26,636	53,762	104.2	3.1	1.3	0.2	5.0	2.4	1.2	0.2	13.7	28.0	26.3	27.1	29.6	29.5	29.5
18	Ramanad	4,894	343.1	786,127	809,545	1,595,672	36,865	22.2	16,918	17,253	34,171	98.1	1.0	0.6	0.001	8.8	0.8	0.9	0.2	8.3	21.5	19.8	20.6	20.9	18.7	19.8
19	Salem	6,918	295.4	1,019,806	1,023,794	2,043,600	54,888	26.9	28,301	27,397	55,698	103.3	2.6	1.4	0.2	10.1	1.2	0.6	0.2	11.0	27.5	26.8	27.3	31.4	30.9	31.1
20	South Arcot	4,028	561.3	1,172,341	1,189,400	2,361,741	45,438	19.2	23,390	22,844	46,234	102.4	1.3	0.6	...	6.6	1.4	0.7	0.1	8.9	20.0	19.2	19.6	24.8	23.7	24.2
21	South Kanara	4,201	297.1	577,832	616,806	1,194,638	37,924	24.3	21,616	22,338	43,953	96.8	1.1	2.3	0.01	9.9	4.7	1.2	0.3	11.3	27.4	26.2	26.8	35.9	34.6	35.2
22	Tanjore	3,727	633.6	1,122,393	1,239,189	2,361,582	57,294	24.3	30,939	31,406	62,405	98.7	1.5	1.5	0.004	5.1	1.0	0.6	0.2	16.5	27.6	25.3	26.4	28.3	27.2	27.7
23	Tinnevely	4,353	411.3	865,403	924,819	1,790,222	50,174	28.0	24,019	24,191	48,210	99.3	2.1	0.5	0.001	6.9	1.4	0.5	0.1	15.4	27.7	26.2	26.9	26.3	24.2	25.2
24	Trichinopoly	4,317	428.5	879,128	949,207	1,828,335	44,379	24.3	21,971	21,801	43,772	100.8	1.3	0.8	0.02	6.3	1.2	0.8	0.2	13.3	25.0	23.0	23.9	25.9	24.8	25.1
25	Vizagapatam Plains.	4,600	471.3	1,049,824	1,118,342	2,168,166	59,074	27.5	32,329	30,554	62,883	105.8	2.8	1.0	...	22.0	0.8	0.4	0.2	1.8	30.8	27.3	29.0	29.9	27.9	28.9
Grand Total for the Presidency		126,585	316.0	19,679,859	20,325,876	40,005,735	1,021,213	25.5	550,605	539,224	1,089,829	102.1	2.3	1.0	0.1	10.1	1.9	1.2	0.2	10.4	28.0	26.5	27.2	28.2	27.0	27.6
Total of Town circles in the Presidency		...	...	2,394,185	2,460,051	4,854,236	138,588	27.5	76,850	77,300	154,059	99.5	1.9	1.2	0.4	6.7	3.7	2.6	0.3	15.0	82.1	81.4	81.7	31.9	30.9	31.4
Total of Rural circles in the Presidency		...	...	17,285,674	17,865,825	35,151,499	882,625	25.5	471,755	462,015	933,770	102.5	2.4	1.0	0.1	10.6	1.6	1.0	0.2	9.7	27.4	25.9	26.6	27.8	26.5	27.1

No. III.—Deaths registered in the districts of the Madras Presidency during each month of the year 1919.

1		2		3												4									
Number.		Districts.																							
January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Total deaths registered during the year.	
1	Anantapur	2,400	1,490	1,804	1,308	1,412	1,552	1,802	1,753	1,356	1,371	1,481	1,719	18,548											
2	Bellary	2,236	1,687	2,035	1,910	1,970	1,721	1,811	1,682	1,421	1,668	1,455	1,632	21,178											
3	Chingleput	6,639	5,369	4,008	2,709	3,661	3,434	3,173	3,055	2,458	2,688	3,315	3,978	44,517											
4	Chittoor	6,940	3,242	2,724	1,930	2,160	1,901	2,189	2,268	1,707	1,750	2,346	3,153	31,260											
5	Coimbatore	6,251	3,857	3,410	3,091	2,857	2,901	2,989	3,289	2,985	3,331	4,354	5,595	45,512											
6	Cuddapah	2,411	2,558	1,288	877	1,537	1,206	1,671	1,648	1,450	1,485	1,289	1,520	18,945											
7	Ganjam Plains	3,999	3,625	4,751	5,288	6,882	7,108	9,282	7,049	5,755	4,929	4,239	5,871	68,273											
8	Do. Agency	74	91	102	94	62	52	39	30	14	25	26	16	625											
9	Godavari Plains	4,073	3,716	4,853	5,382	6,944	7,155	9,321	7,079	5,769	4,854	4,265	5,387	68,898											
10	Do. Agency	3,643	2,766	3,422	2,635	2,943	4,346	5,020	4,904	3,287	3,579	2,755	3,222	42,502											
11	Total	1,622	594	616	379	270	388	613	735	609	527	368	597	7,318											
12	Guntur	5,265	3,360	4,038	3,014	3,213	4,734	5,633	5,539	3,876	4,106	3,123	3,819	49,820											
13	Kistna	5,114	3,400	3,428	2,799	3,213	3,375	4,245	4,278	3,811	4,377	4,114	4,582	46,736											
14	Kurnool	5,430	3,391	3,011	2,825	3,205	4,139	5,323	5,647	4,307	4,324	3,738	4,907	50,307											
15	Madras	2,834	1,587	1,467	1,593	1,505	1,534	1,761	1,831	1,891	1,873	1,480	1,787	21,002											
16	Madura	3,735	2,267	1,963	1,741	1,988	1,814	2,349	2,580	1,731	1,852	2,268	2,516	26,749											
17	Makhar	6,567	3,732	3,090	2,571	2,700	2,450	2,930	3,157	3,028	3,156	3,998	5,378	42,753											
18	Nellore	10,270	8,330	8,022	8,723	11,922	15,170	17,688	15,698	10,149	7,126	6,177	7,653	126,928											
19	Nilgiris, The	4,021	2,743	1,353	946	1,310	1,457	1,407	1,785	1,272	1,595	1,669	1,612	21,200											
20	North Arcot	204	160	296	296	385	339	380	371	323	460	513	268	3,988											
21	Ramanad	7,875	5,602	4,778	3,271	4,162	3,854	3,748	3,718	3,058	3,302	4,151	5,643	58,162											
22	Salem	4,335	2,840	2,558	2,114	2,103	2,217	2,614	2,906	2,901	2,563	3,255	3,471	34,171											
23	South Arcot	6,292	4,382	4,092	3,509	3,412	3,640	3,606	3,723	3,234	4,198	6,380	7,691	55,698											
24	South Kanara	4,795	4,571	3,547	3,509	3,412	3,640	3,606	3,723	3,234	4,198	6,380	7,691	55,698											
25	Tanjore	6,561	3,408	2,554	1,978	2,044	3,417	3,175	2,688	4,232	4,239	3,803	3,312	43,958											
26	Trinnevelly	7,105	4,584	4,354	4,142	4,324	3,807	4,934	4,794	4,460	4,505	5,852	9,044	62,406											
27	Trichinopoly	7,955	4,053	2,829	2,695	2,522	2,381	2,565	3,039	3,263	4,717	5,351	6,860	48,210											
28	Vizagapatam Plains	4,859	3,511	3,321	2,780	2,602	2,921	2,708	2,508	2,170	2,895	3,577	6,920	48,772											
29	Total, Madras Presidency	130,804	89,193	80,157	69,123	79,278	86,005	108,123	96,417	78,915	79,990	85,809	111,015	1,089,529											
30	Ratio of deaths per 1,000 in each m-nth.	3.3	2.2	2.0	1.7	2.0	2.1	2.6	2.4	2.0	2.0	2.1	2.3	27.2											

APPENDIX

No. IV.—Deaths registered according to Age in the districts of the Madras Presidency during the year 1919.

Number.	Districts.	Under 1 year.		1 to 4.		5 to 9.		10 to 14.		15 to 19.		20 to 29.		30 to 39.		40 to 49.		50 to 59.		60 and upwards.	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1	Anantapur	2,173	2,001	1,343	1,236	553	530	345	301	319	403	737	1,017	733	723	562	679	1,002	751	2,024	1,813
2	Bellary	2,101	1,972	2,023	1,985	975	859	478	454	423	492	802	691	716	625	738	661	1,045	814	1,659	1,855
3	Chingleput	3,352	3,066	3,264	3,251	1,283	1,252	716	657	705	905	1,831	2,339	1,715	1,645	1,392	1,392	1,377	1,082	4,063	4,026
4	Chittoor	2,753	2,514	1,928	1,896	816	823	522	504	572	686	1,190	1,339	1,309	1,340	1,340	1,149	1,373	1,324	3,080	3,322
5	Coimbatore	5,015	4,217	3,156	3,130	1,488	1,387	980	819	1,030	1,121	2,214	2,431	2,008	1,913	1,900	1,446	1,772	1,443	4,002	4,061
6	Cuddapah	1,383	1,140	1,019	882	570	506	370	307	369	444	823	1,071	1,047	592	1,062	843	1,300	1,026	1,973	1,798
7	Ganjam Plains	4,320	4,185	4,043	3,972	2,763	2,671	2,065	1,929	1,778	1,826	3,070	3,643	3,189	3,234	3,319	2,841	3,400	3,450	5,053	6,072
	Do. Agency	37	26	1	31	21	24	10	21	44	34	34	34	48	52	40	34	27	21	19	41
	Total	4,357	4,161	4,044	3,972	2,784	2,695	2,111	1,953	1,822	1,860	3,104	3,677	3,237	3,286	3,359	2,875	3,427	3,477	5,073	6,113
8	Godavari Plains	3,340	2,962	3,252	3,183	1,479	1,301	935	784	800	1,133	2,063	2,813	1,981	1,946	1,787	1,459	1,721	1,455	3,088	4,281
	Do. Agency	332	320	484	477	298	276	180	100	325	293	545	501	513	410	428	250	331	238	470	517
	Total	3,722	3,282	3,736	3,660	1,777	1,577	1,115	884	1,125	1,426	2,608	3,314	2,494	2,356	2,215	1,707	2,052	1,693	4,158	4,798
9	Guntur	5,726	5,063	3,393	3,129	1,286	1,226	724	738	923	1,113	1,906	2,320	1,680	1,630	1,630	1,236	1,800	1,289	5,141	4,807
10	Kistna	5,720	5,129	3,157	2,914	1,446	1,475	1,014	902	1,041	1,379	2,243	2,782	2,184	1,966	1,966	1,476	1,929	1,733	4,976	4,939
11	Kurnool	1,890	1,611	1,734	1,617	778	746	372	334	339	399	840	1,107	887	792	912	713	1,144	945	2,045	1,813
12	Madras	3,261	2,870	2,252	2,206	750	792	474	473	429	366	1,090	1,492	1,101	1,069	964	844	888	735	2,062	2,134
13	Madura	4,377	3,901	2,953	3,024	1,165	1,225	754	688	829	898	1,560	1,722	1,796	1,732	2,001	1,819	1,886	1,471	3,890	4,130
14	Malabar	9,762	8,308	10,315	10,332	4,453	4,583	1,311	2,748	2,148	3,385	5,756	7,745	7,092	8,117	6,310	5,382	5,845	4,346	8,447	10,243
15	Nellore	1,679	1,392	1,290	1,162	680	609	432	374	438	487	902	1,021	995	903	938	957	1,170	928	2,465	2,300
16	Nilgiris, The	335	325	356	341	93	93	73	71	93	105	273	308	239	199	201	180	159	125	250	208
17	North Arcot	2,563	2,035	4,248	4,382	1,683	1,586	988	983	964	1,216	2,043	2,605	1,958	1,856	2,066	1,573	2,023	1,689	5,578	5,368
18	Ramanthapur	3,017	2,610	2,454	2,475	872	892	533	476	604	765	1,646	2,056	1,531	1,647	1,566	1,346	1,547	1,310	3,148	3,673
19	Salem	5,111	5,254	3,643	3,586	1,691	1,716	1,213	1,118	1,298	1,851	2,943	3,157	2,728	2,408	2,517	2,076	2,589	2,136	4,568	4,631
20	South Arcot	4,173	3,902	3,113	3,032	1,571	1,703	1,350	1,246	1,359	1,537	2,710	3,283	2,480	2,460	2,791	1,819	2,146	1,994	4,159	3,757
21	South Kanara	4,110	3,757	2,504	2,404	1,488	1,397	783	847	1,294	1,537	2,448	3,570	2,724	2,816	2,904	2,462	1,708	1,576	2,777	3,255
22	Tanjore	6,631	5,676	3,189	3,371	1,467	1,461	936	965	986	1,372	2,448	3,570	2,724	2,816	2,904	2,462	2,862	2,250	6,562	7,290
23	Tinnevely	5,854	4,641	3,989	4,104	1,377	1,259	890	897	736	1,060	1,762	2,874	1,730	1,876	1,803	1,399	1,738	1,468	4,680	5,063
24	Trichinopoly	4,453	4,124	2,776	2,880	1,093	1,008	679	682	746	839	1,054	2,076	1,853	1,782	1,938	1,550	2,023	1,755	4,819	5,015
25	Vizagapatnam Plains.	5,550	4,914	5,040	4,843	2,296	2,068	1,391	1,169	1,270	1,329	2,776	2,908	2,990	2,721	3,160	2,291	2,910	2,599	4,906	5,652
	Total, Madras Presidency	109,937	99,025	77,378	76,433	34,269	33,532	21,853	20,610	21,962	25,780	48,140	69,267	49,234	48,480	48,324	39,160	47,883	40,511	97,635	102,446
	Total population according to the census of 1911	567,721	583,072	2,084,198	2,168,205	2,689,865	2,682,309	2,429,211	2,213,765	1,747,399	1,737,429	3,186,763	3,648,672	2,696,246	2,754,611	2,687,905	2,076,681	1,843,514	1,853,679	1,141,123	1,264,451
	* Ratio, per mille of population	1831	1595	371	352	139	123	90	92	126	148	151	162	187	176	231	189	356	299	32	910

* Calculated on the total population for the Presidency as per census of 1911 including Europeans and Eurasians though the statistics are exclusive of Europeans and Eurasians and born-dead cases.

VITAL STATISTICS OF THE GENERAL POPULATION

No. V.—Deaths registered according to Classes in the districts of the Madras Presidency during the year 1919.

1		2		3										4			
		Population for which returns were received.										Number of deaths registered.					
Number.	Districts.	Indian Christians.		Muhammadans.		Hindus.		Other classes.		Total.		Indian Christians.		Muhammadans.			
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.		
1	Anantapur	1,648	1,448	41,137	38,911	449,555	426,916	1,805	1,463	493,945	468,738	20	34	701	802		
2	Bellary	1,615	1,619	49,390	48,851	444,695	435,945	987	592	496,637	485,007	43	25	988	886		
3	Chingleput	13,660	13,919	16,314	16,290	673,290	669,088	863	786	704,127	699,083	283	230	428	422		
4	Chittoor	2,133	2,137	30,889	28,344	591,896	574,551	4,364	4,180	629,232	609,232	29	29	727	618		
5	Coimbatore	8,992	9,312	21,790	21,310	1,011,929	978,835	1,754	1,659	1,043,813	1,071,505	158	174	505	524		
6	Cuddapah	11,316	11,036	50,731	48,385	390,226	378,835	1,754	1,659	451,027	439,915	190	188	1,144	948		
7	Ganjam Plains	1,078	1,104	2,768	2,657	888,692	871,440	26,284	26,618	868,822	1,001,819	30	30	116	104		
	Do. Agency	...	...	...	...	4,378	4,465	...	...	4,378	4,465	...	...	...	...		
8	Godavari Plains	3,752	3,664	12,058	12,389	691,267	721,594	220	189	707,297	737,836	69	80	253	251		
	Do. Agency	793	809	1,314	1,266	92,255	90,196	10,127	10,128	104,489	102,389	25	18	30	28		
9	Guntur	63,133	60,353	59,523	57,749	729,222	718,188	4,670	4,492	856,548	840,782	1,534	1,428	1,710	1,558		
	Kistna	24,911	24,671	35,707	35,026	933,429	942,029	755	726	994,802	1,007,452	558	562	1,040	950		
10	Kurnool	21,190	20,795	61,602	59,168	387,477	382,695	1,110	1,079	471,379	463,737	403	383	1,304	1,282		
11	Madura	13,121	14,171	30,984	28,185	213,731	202,179	1,166	601	259,002	245,136	546	527	1,643	1,610		
12	Malabar	29,382	30,302	37,164	39,384	879,315	816,488	11	...	945,872	986,184	654	642	958	974		
13	Malabar	25,874	25,706	47,077	40,207	568,060	568,203	343	298	1,477,138	1,527,771	1,056	1,102	22,166	22,704		
14	Nellore	21,832	21,906	41,592	40,287	502,084	498,384	33,327	32,265	665,011	662,581	253	237	723	602		
15	Nilgiris, The	6,351	6,362	3,729	2,148	50,084	49,800	789	635	605,011	603,035	204	219	183	132		
16	North Arcot	15,628	16,166	56,534	61,375	892,971	908,384	4,412	4,462	989,545	990,387	238	259	1,375	1,438		
17	Ramanad	22,145	40,431	50,035	70,185	693,937	761,694	10	15	786,127	872,794	477	486	1,061	1,188		
18	Salem	7,259	7,721	23,818	23,227	988,688	992,874	6	22	1,019,506	1,023,794	138	169	505	520		
19	South Arcot	33,112	33,499	33,588	33,398	1,103,167	1,120,004	2,474	2,439	1,172,341	1,189,400	863	386	562	455		
20	South Arcot	46,790	48,740	70,080	70,620	456,262	493,165	4,700	4,371	577,832	616,806	1,866	1,442	3,388	3,608		
21	South Kanara	42,380	46,327	57,051	73,991	1,032,630	1,118,866	332	305	1,122,393	1,239,189	2,162	1,087	1,719	1,874		
22	Tanjore	84,076	91,416	46,853	58,621	734,447	774,777	27	5	865,403	924,819	2,170	2,321	1,383	1,810		
23	Tinnevely	41,388	44,211	29,948	32,186	897,794	872,807	...	...	879,128	949,207	922	867	775	789		
24	Tritchinopoly	1,668	1,811	10,607	11,174	1,036,742	1,104,507	807	850	1,049,824	1,118,342	23	17	216	195		
25	Vizagapatam Plains	559,230	579,639	1,345,891	1,384,344	17,672,268	18,262,649	102,450	99,344	19,679,859	20,325,876	12,811	13,942	45,493	45,452		
Total, Madras Presidency																45,493	45,452

APPENDIX

No. V.—Deaths registered according to Classes in the districts of the Madras Presidency during the year 1919—cont.

Number.	Districts.	Number of deaths registered—cont.				Ratio of deaths per 1,000 of population.			
		Hindus.		Other classes.		Total.		Total.	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1	Anantapur	9,371	8,735	99	86	10,091	9,457	19,548	121
2	Bellary	9,836	9,216	103	81	10,970	10,208	21,178	266
3	Chingleput	21,331	21,151	136	133	22,578	21,934	44,517	207
4	Chittoor	16,321	14,290	126	120	16,208	15,057	31,260	136
5	Coimbatore	22,800	21,186	81	84	23,544	21,968	45,512	176
6	Cuddapah	8,419	7,631	233	202	9,976	8,969	18,945	168
7	Ganjam Plains	33,628	34,234	57	74	33,581	34,442	68,273	278
	Do. Agency	304	321	...	...	304	321	625	...
	Total	33,932	34,555	57	74	34,135	34,763	68,898	278
8	Godavari Plains	20,767	21,073	6	3	21,095	21,407	42,502	184
	Do. Agency	3,801	3,422	20	11	3,876	3,442	7,318	315
	Total	24,568	24,495	26	17	24,971	24,849	49,820	207
9	Guntur	20,818	19,447	123	118	24,135	22,551	46,736	243
10	Kistna	23,738	22,978	214	237	25,550	24,757	50,307	224
11	Kurnoor	9,106	8,398	88	88	10,901	10,101	21,002	190
12	Madras	11,077	11,337	3	6	13,269	13,480	26,749	476
13	Madras	20,772	19,353	...	...	21,784	20,969	42,753	223
14	Malabar	33,342	40,409	75	74	62,039	64,289	126,928	408
15	Nellore	9,814	9,093	277	256	11,067	10,133	21,200	118
16	Nizhina, The	1,586	1,435	151	128	2,074	1,914	3,988	321
17	North Arcot	25,300	24,180	213	179	27,326	26,036	53,162	152
18	Ramanad	15,380	15,579	...	...	16,818	17,258	34,171	132
19	Salem	27,680	26,708	...	...	28,301	27,597	55,698	187
20	South Arcot	22,352	21,886	83	87	23,380	22,844	46,234	110
21	South Kanara	16,732	17,292	120	151	21,615	22,358	43,953	292
22	Tanjore	28,136	28,350	82	95	30,999	31,406	62,405	251
23	Tinnevely	20,516	20,560	...	...	24,019	24,191	48,210	258
24	Trichinopoly	20,274	20,185	...	...	21,971	21,801	43,772	223
25	Vizagapatnam Plains	32,005	30,282	85	60	32,329	30,554	62,883	138
	Total, Madras Presidency	489,936	478,574	2,365	2,276	550,605	539,224	1,089,829	229

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919.

Number.	Districts and towns.	Births.				Deaths.				Ratio of deaths per 1,000 of population.																				
		Males.		Females.		Total.		Birth-rate per 1,000 of population.		Dysentery and diarrhoea.	Typhoid.	Small-pox.	Plague.	Erysipelas.	Respiratory diseases.	Injuries.	All other causes.	From all causes.												
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.																					
1	Anantapur	84,398	11,454	10,960	22,384	264	774	56	2,741	611	1,211	7	13	97	49	166	11,217	17,750	0.9	1.1	0.1	3.2	0.7	1.4	0.2	13.3	20.9	36.9		
2	Bellary	837,001	8,601	8,415	17,105	204	31	1,791	1,534	1,006	822	11	11	76	41	130	6,757	18,023	0.94	2.1	1.8	3.7	1.2	1.0	0.2	10.5	21.5	44.7		
3	Chingleput	1,204,540	17,880	17,371	35,260	293	3,935	975	6,742	2,076	1,594	23	8	90	40	181	21,738	38,590	3.3	3.8	0.01	5.6	3.1	1.0	0.2	18.0	32.0	31.1		
4	Chittoor	1,170,890	13,965	13,604	27,570	295	4,025	815	7,036	1,672	1,857	9	2	163	53	227	12,006	29,344	4.0	0.7	0.02	6.5	1.4	1.2	0.2	11.1	25.1	25.9		
5	Coimbatore	1,689,903	26,728	25,163	51,891	207	2,151	1,900	7,898	4,618	2,876	22	20	250	103	305	10,755	40,524	1.1	0.9	0.6	4.0	2.4	1.5	0.2	10.2	20.8	25.6		
6	Cuddapah	765,544	9,382	8,937	18,319	250	3,296	421	9,025	500	617	9	10	129	57	214	3,409	17,469	4.1	0.5	...	11.4	0.6	0.8	0.3	4.3	22.0	31.1		
7	Ganjam Plains	1,772,064	19,931	18,226	38,857	219	9,912	1,466	46,301	2,430	523	26	28	320	154	527	3,275	64,843	5.6	0.8	...	26.1	1.4	0.3	0.3	1.9	30.4	20.6		
8	Do. Agency	8,838	97	73	170	172	2	45	540	18	3	1	...	...	...	...	15	625	0.2	5.1	...	43.1	2.0	0.4	0.2	1.7	70.7	31.0		
9	Total	1,781,802	20,028	18,990	39,027	219	9,914	1,611	46,901	2,448	826	26	28	321	154	529	3,290	65,110	5.6	0.8	...	26.3	1.4	0.3	0.3	1.8	30.5	20.7		
10	Godavari Plains	1,251,505	16,544	15,866	32,410	258	1,590	1,711	20,560	837	2,420	25	52	112	65	254	9,713	37,125	1.2	1.4	...	16.4	0.7	1.0	0.2	7.8	29.6	28.3		
11	Do. Agency	206,888	1,902	1,733	3,635	176	196	234	5,182	267	243	1	3	25	27	56	1,140	7,318	0.9	1.1	...	35.1	1.3	1.2	0.3	5.5	35.4	30.5		
12	Total	1,461,483	18,446	17,599	36,045	434	1,726	1,945	55,742	1,204	2,663	26	55	137	92	310	10,853	44,443	1.2	1.3	...	17.6	0.8	1.8	0.2	7.5	30.4	28.6		
13	Guntur	1,532,108	21,332	20,301	41,633	317	1,014	1,882	20,811	994	2,601	17	24	180	67	289	13,806	41,642	0.7	1.2	0.04	13.6	0.6	1.8	0.2	9.1	27.2	29.7		
14	Kistna	1,792,972	24,744	23,603	48,347	274	940	1,786	21,185	946	5,486	19	34	165	136	354	12,806	43,531	0.6	1.0	0.01	14.0	0.5	3.1	0.2	7.3	24.7	29.1		
15	Kurnool	886,502	10,235	9,641	19,876	224	708	680	112	12,533	392	756	12	18	106	47	1	4,256	19,630	0.8	0.8	0.1	12.2	0.4	0.8	0.2	4.8	20.1	28.6	
16	Madras	1,660,765	20,433	19,340	39,773	238	2,272	963	8,733	1,654	1,450	9	26	239	62	2	355	17,630	33,330	1.4	0.6	0.2	5.2	1.0	0.9	0.2	10.5	20.0	22.3	
17	Madurai	2,770,383	41,673	39,701	81,374	294	13,223	3,366	23	43,758	16,534	4,221	63	29	146	230	1	703	34,818	4.8	1.2	0.01	15.8	5.6	1.5	0.3	12.6	41.8	28.9	
18	Nellore	1,255,853	9,905	9,477	19,382	137	2,728	700	10,080	462	461	14	18	151	31	214	4,579	19,258	2.2	0.6	...	8.2	0.4	0.4	0.1	3.7	15.6	20.3		
19	Nizhina, The	70,211	830	821	1,650	210	18	151	1,237	453	277	3	5	6	1	15	404	2,630	0.2	1.9	0.2	15.6	5.7	3.5	0.2	5.9	38.2	33.6		
20	North Arcot	1,710,080	24,225	23,080	47,305	275	5,532	2,252	120	3,341	1,919	32	11	137	149	1	380	22,786	46,728	3.2	1.3	0.1	5.2	2.3	1.1	0.2	13.8	27.2	29.4	
21	Ramanad	1,358,141	14,890	14,061	28,950	213	1,136	860	...	617	1,100	18	14	110	52	203	10,040	26,855	0.8	0.6	...	9.3	0.6	0.9	0.2	7.4	19.8	19.5		
22	Salem	1,915,206	29,022	24,795	50,857	265	4,841	2,741	...	2,002	1,116	42	18	237	127	4	428	20,286	51,640	2.5	1.4	0.2	6.8	1.1	0.6	0.2	10.6	17.0	30.7	
23	South Arcot	2,169,365	20,741	20,126	40,867	188	3,011	1,288	...	2,890	1,397	14	8	100	67	...	189	18,633	42,261	1.4	0.6	...	10.8	1.4	0.6	0.1	8.6	19.5	23.2	
24	South Kanara	1,972,651	15,267	17,894	33,661	318	8,052	2,836	...	5,207	1,250	25	10	230	49	...	333	12,423	41,950	1.2	2.0	...	10.3	4.7	1.1	0.3	11.1	36.7	25.2	
25	Tanjore	1,972,651	24,137	22,638	46,775	277	3,107	2,083	8	9,408	1,368	884	15	18	240	162	1	434	31,991	50,333	1.6	1.5	0.004	4.8	0.7	0.4	0.2	16.3	25.5	26.8
26	Tinnevely	1,352,340	19,917	18,503	38,420	295	3,068	770	...	1,309	404	14	19	90	41	164	31,279	56,189	2.3	0.6	...	6.7	1.0	0.3	0.1	18.8	26.8	24.9		
27	Trichinopoly	1,950,955	27,837	26,429	54,266	278	5,579	1,945	...	604	33	33	150	115	...	370	2,387	56,792	2.9	1.0	...	23.1	0.4	0.3	0.2	1.2	29.1	29.0		
28	Vizagapatnam Plains	55,151,169	454,683	428,942	887,625	253	38,506	35,953	7,077	56,108	36,577	450	463	4,088	2,075	28	7,134	341,288	835,770	2.4	1.0	0.1	10.6	1.6	1.0	0.2	9.7	26.6	27.1	

VITAL STATISTICS OF THE GENERAL POPULATION

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919—cont.

Number.	Districts and towns.	Births.			Deaths.			Injuries.			Ratio of deaths per 1,000 of population.			From all causes.	For the year.
		Total number.		Birth-rate per 1,000 of population.	Total number.		Death-rate per 1,000 of population.	Total number.		Total deaths from all causes.	Ratio of deaths per 1,000 of population.		From all causes.	For the year.	
		Males.	Females.		Males.	Females.		Males.	Females.		Small-pox.	Plague.	Dysentery and diarrhoea.	Injuries.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
B.—Towns.															
1	Ammapur—	8,457	116	231	27.3	2	12	3	3	1	128	146	6.2	1.4	387
2	M.T.C. Annapur	12,593	113	339	10.0	94	3	3	3	1	92	258	7.5	0.1	205
3	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
4	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
5	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
6	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
7	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
8	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
9	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
10	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
11	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
12	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
13	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
14	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
15	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
16	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
17	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
18	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
19	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
20	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
21	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
22	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
23	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
24	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
25	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
26	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
27	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
28	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
29	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
30	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
31	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
32	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
33	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
34	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
35	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
36	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
37	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
38	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
39	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
40	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
41	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
42	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251
43	T.C. Thirupattin	11,655	158	144	30.2	27.4	3	54	3	10	178	277	0.8	0.2	251

Number.	Districts and towns.	Popula- tion for which returns received.	Births.		Cholera.	Small-pox.	Plague.	Peters.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.			Total deaths from all causes.	Ratio of deaths per 1,000 of population.	From all causes.	For the year.				
			Total number.								Birth-rate per 1,000 of popula- tion.	Males.	Females.					Suicides.	Wounds and accidents.	Stab- bites and killed by wild beasts.	Rabies.
			Males.	Females.																	
41	B.—Towns—cont. Coimbatore—cont. M.T.C. Diangapur	17,926	168	341	19.2	36	27	220	47	70	25	...	...	...	...	...	...				
42	M.T.C. Erode	16,701	287	513	30.7	21	19	6	116	105	86	1	3	4	...	...	...				
43	M.T.C. Udamalpet	10,445	112	264	24.3	1	4	76	50	38	...	...	...	...	...	...	...				
44	M.T.C. Tiruppur	9,429	108	208	22.1	5	29	1	22	18	1	...	...	...	...	...	...				
45	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
46	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
47	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
48	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
49	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
50	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
51	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
52	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
53	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
54	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
55	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
56	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
57	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
58	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
59	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
60	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
61	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
62	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
63	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
64	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
65	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
66	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
67	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
68	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
69	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
70	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
71	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
72	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
73	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
74	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
75	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
76	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
77	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
78	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
79	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
80	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				
81	T.C. Kottur	18,801	62	119	6.3	...	...	...	...	...	...	...	...	...	...	...	...				

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919—cont.

Number.	Districts and towns.	3	4		5	6	7	8	9	10	11				12	13	14										
			Births.								Total number.	Birth-rate per mille of population.	Injuries.				Ratio of deaths per 1,000 of population.										
			Males.	Females.									Remales.	Wounds and accidents.	Snak-bite and killed by wild beasts.	Rabies.	Total.			Cholera.	Small-pox.	Plague.	Peters.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.
82	Gundur-cont.	8,745	130	144	264	30.2	23	8	22	48	3	4	2	...	6	46	279	26	0.3	0.3	15.6	2.5	4.9	0.7	5.3	31.9	38.8
83	M.T.C. Narasimhapet	13,018	181	164	345	26.5	48	1	68	15	3	2	...	...	8	162	467	26	0.6	0.1	3.2	2.5	4.3	0.2	5.3	31.9	38.8
84	T.C. Chinnai	10,973	121	106	227	20.7	5	2	15	13	6	...	...	...	2	118	269	26	0.6	0.1	3.2	2.5	4.3	0.2	5.3	31.9	38.8
85	T.C. Vellur	10,852	107	99	206	19.0	19	2	13	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
86	T.C. Mangalagiri	8,747	138	134	272	31.2	16	7	51	15	8	...	...	...	1	105	264	22	0.6	0.8	16.3	6.0	1.5	1.7	1.7	1.7	1.7
87	T.C. Ponnur	8,440	83	77	160	19.0	6	...	40	6	3	...	...	...	1	63	181	18	0.7	0.7	6.0	4.8	0.6	0.6	0.6	0.6	0.6
88	T.C. Adanti	8,083	104	111	215	26.8	10	...	107	10	8	...	...	...	1	60	121	26	0.7	0.7	4.8	4.8	0.7	0.7	0.7	0.7	0.7
89	T.C. Alure-Koappanam	7,405	113	106	219	29.5	...	...	74	3	1	...	...	...	3	83	180	...	...	...	1.0	1.2	1.2	1.2	1.2	1.2	1.2
90	T.C. Vinukonda	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...
91	Kistna—	42,531	905	791	1,756	41.3	...	...	80	...	...	...	...	...	6	772	1,108	...	0.4	...	...	6.9	1.9	...	...	...	30.7
92	M.T.C. Ellore	42,125	740	719	1,459	34.6	...	...	51	47	1	...	...	...	12	782	1,211	...	0.1	...	...	7.2	1.3	1.1	0.4	1.8	13.9
93	M.T.C. Masulipatam	32,867	650	718	1,368	41.9	...	...	137	187	1	5	...	...	42	1,369	2,006	...	1.3	0.4	0.06	11.1	4.2	5.7	1.3	3.8	44.7
94	M.T.C. Beavada	18,955	291	275	566	30.1	...	...	24	96	1	...	...	...	7	171	516	...	0.6	...	...	10.2	1.3	3.1	0.4	3.1	26.9
95	T.C. Ponnur	17,554	149	153	302	16.8	...	...	115	33	47	2	...	...	8	84	285	...	0.3	...	...	6.2	4.7	1.4	1.4	1.4	11.3
96	T.C. Ponnur	12,953	81	70	151	11.7	...	...	29	36	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
97	T.C. Narasimhapet	11,930	95	81	176	14.8	...	...	56	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
98	T.C. Ponnur	10,981	176	163	339	30.8	...	...	209	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
99	T.C. Ponnur	10,023	143	137	280	27.8	...	...	73	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
100	T.C. Ponnur	9,180	141	129	270	29.5	...	...	73	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
101	T.C. Gudivada	8,844	146	50	196	16.3	...	...	47	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
102	T.C. Achanta	8,382	65	71	136	15.3	...	...	9	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
103	T.C. Jagavaypeta	7,181	34	29	63	8.8	...	...	34	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
104	Kurnool—	26,040	493	385	788	30.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
105	M.T.C. Kurnool	16,230	173	163	336	20.7	...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
106	M.T.C. Nandyal	6,341	45	31	76	12.3	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
107	T.C. Cumbum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
108	M.T.C. Madras	304,138	9,497	18,464	38,665	12.6	...	...	5,760	5,148	7	12	184	1	204	11,147	26,749	...	1.3	1.2	0.78	6.4	11.4	10.2	0.4	22.2	53.1
109	M.T.C. Madras	134,120	2,462	4,851	38,72	28.9	...	...	420	226	3	6	43	2	54	2,765	5,075	...	0.7	0.4	...	10.9	3.1	1.7	0.4	20.6	37.8
110	M.T.C. Madras	25,032	606	575	1,178	47.0	...	...	104	21	...	...	...	...	17	380	1,284	...	0.8	0.2	...	4.2	9.3	0.8	0.7	23.6	51.3
111	M.T.C. Dindigul	29,183	283	285	568	19.5	...	...	71	30	...	...	...	...	3	156	279	...	0.2	0.1	...	3.6	1.5	0.8	0.2	7.7	13.8
112	M.T.C. Hojaiyakatur	18,715	421	395	816	43.6	...	...	165	119	...	...	...	...	3	283	735	...	0.2	0.1	...	3.6	1.5	0.8	0.2	7.7	13.8
113	M.T.C. Periyakulam	13,211	318	238	556	42.8	...	...	17	92	...	...	...	...	5	402	819	...	...	...	...	1.3	7.0	0.8	0.7	30.4	61.2
114	M.T.C. Pahi	2,906	68	71	139	16.5	...	...	25	8	...	...	...	...	1	56	86	...	...	...	...	...	...	...	...	...	...
115	M.T.C. Kodaikal	12,419	136	136	272	22.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919—cont.

Number.	Districts and towns.	3	4		5	6	7	8	9	10	11				12	13	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
			Births.								Total number.	Birth-rate per thous. of popula- tion.	Cholera.	Small-pox.			Plague.	Rever.	Dysentery and diarrhoea.	Injuries.				All other causes.	Total deaths from all causes.	Ratio of deaths per 1,000 of population.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Males.	Females.	Males.	Females.	Suicides.	Wounds and accidents.	Snake-bite and wild beasts.	Rabies.	Total.	Cholera.	Small-pox.					Plague.	Rever.				Dysentery and diarrhoea.	Respiratory dis- eases.	Injuries.	All other causes.			From all causes.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
B.—Towns—cont.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
115	Madurai—cont.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
116	T.C. Melur	8,972	114	85	199	20.0	3	18	9	...	...	...	...	...	135	179	1.4	0.3	...	1.8	0.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919—cont.

Number	Districts and towns	3		4		5	6	7	8	9	10	11		12	13	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
		Popula- tion for returns received.	Males.	Females.	Total number.							Cholera.	Small-pox.			Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Suicides.		Wounds and fractures.	Non-fatal injuries.	Total.	All other causes.	Total deaths from all causes.	Ratio of deaths per 1,000 of population.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
																				Male.	Female.						Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	From all causes.	From all causes.	From all causes.	From all causes.	From all causes.	From all causes.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
151	North Arcot—cont.	6,973	20	30	50	75	...	...	3	16	...	...	...	27	105	108	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919—cont.

Number.	Districts and towns.	3	4		5	Births.				and				Injuries.				Ratio of deaths per 1,000 of population.													
			Males.	Females.		Total number.	Birth-rate per mille of population.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Suicides.	Wounds and accidents.	Smothered by wild beasts.	Liabilities.	Total.	All other causes.	Total deaths from all causes.	Cholera.	Small-pox.	Plague.	Poison.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.	For the year.	Mean for 5 years.
108	South Kanam.	...	781	718	1,499	31.0	381	344	11	108	293	149	1	1	82	1	1	36	655	1,807	6.8	7.1	0.2	2.2	6.1	3.1	0.7	18.2	39.4	39.1	39.8
109	M.T.C. Mangalore	...	168	157	325	29.9	26	4	...	60	17	...	...	...	3	1	...	7	280	344	2.4	0.4	...	7.9	1.9	0.6	21.1	37.6	30.8	30.8	
200	T.C. Udupi	...	138	127	265	31.9	84	77	...	68	40	...	...	...	...	...	...	2	708	363	10.1	0.8	...	7.1	0.7	0.6	22.3	47.6	47.6	47.6	
201	T.C. Kasargod	...	95	79	174	32.5	31	...	...	35	4	...	...	...	...	...	...	2	78	139	10.1	0.8	...	7.1	0.7	0.6	22.3	47.6	47.6	47.6	
202	T.C. Mulki	...	776	810	1,586	24.5	20	88	...	390	148	122	...	...	3	1	...	4	1,048	2,020	0.3	1.3	...	9.1	2.3	1.9	0.1	31.2	32.7	32.7	
203	M.T.C. Kumbakonam	...	1,021	940	1,961	32.5	42	60	...	377	346	223	...	...	18	1	3	23	1,180	2,250	0.7	1.0	...	6.2	5.7	3.7	0.4	19.6	37.3	37.4	
204	M.T.C. Tanjore	...	817	752	1,569	26.1	41	64	1	385	244	68	...	...	11	4	...	15	1,181	1,967	0.7	1.1	0.02	6.4	4.1	1.1	0.2	19.6	39.2	39.2	
205	M.T.C. Nagapattinam	...	436	416	852	32.5	72	20	...	137	66	...	...	...	...	...	...	1	713	1,069	2.7	0.7	...	5.1	...	...	0.04	26.3	37.2	37.6	
206	M.T.C. Mayavaram	...	331	323	654	30.6	...	29	...	155	47	27	2	...	2	3	...	7	383	648	...	1.4	...	7.2	2.2	1.3	0.3	17.9	30.3	30.3	
207	M.T.C. Mannargudi	...	244	225	469	22.3	36	48	...	127	69	16	...	...	1	2	...	3	347	641	1.7	2.3	...	6.0	3.0	0.8	0.2	16.5	30.5	34.0	
208	T.C. Tiruvarur	...	185	185	370	29.3	29	1	...	73	27	...	...	...	...	...	...	1	255	383	1.4	0.1	...	4.6	0.6	...	...	14.1	21.3	22.8	
209	T.C. Vedaranyam	...	144	134	278	19.6	41	1	...	68	13	...	...	...	...	...	...	1	168	300	2.6	1.7	...	7.2	1.0	0.8	0.1	14.3	20.2	24.0	
210	T.C. Tiruchendur	...	160	160	320	24.3	31	23	...	73	13	10	...	...	...	...	...	1	191	347	2.6	1.7	...	7.2	1.0	0.8	0.1	14.3	20.2	24.0	
211	T.C. Tiruchendur	...	123	98	221	18.4	38	7	...	50	11	...	...	...	...	...	...	...	125	230	3.2	6.1	...	7.2	1.0	0.8	0.1	14.3	20.2	24.0	
212	T.C. Tiruchendur	...	111	116	227	22.7	6	18	...	30	7	...	...	...	...	...	...	...	116	254	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
213	T.C. Tiruchendur	...	180	140	320	22.7	4	12	...	112	27	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
214	T.C. Tiruchendur	...	149	136	285	29.2	39	2	...	86	15	...	...	...	...	...	...	...	184	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
215	T.C. Tiruchendur	...	128	121	249	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
216	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
217	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
218	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
219	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
220	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
221	T.C. Tiruchendur	...	121	121	242	21.6	12	...	...	68	24	...	...	...	...	...	...	...	142	298	0.3	1.1	...	1.5	0.6	0.3	0.2	17.6	23.5	25.4	
222	M.T.C. Palamcottah	...	761	748	1,509	33.6	26	7	...	388	309	146	1	...	14	1	1	17	870	1,548	0.5	0.2	...	8.5	8.9	3.3	0.4	12.7	34.5	31.1	
223	M.T.C. Tirunelveli	...	908	811	1,719	38.4	130	80	...	386	189	36	1	...	7	...	2	10	884	1,675	2.9	1.8	...	7.9	3.5	1.3	0.2	19.8	37.4	35.2	
224	M.T.C. Tuticorin	...	688	625	1,313	32.7	21	9	1	352	184	85	...	...	10	...	...	10	725	1,357	0.5	0.2	0.02	8.8	9.8	2.1	0.3	18.1	33.8	30.8	
225	T.C. Tiruchendur	...	128	103	231	9.0	34	...	...	85	23	...	...	...	...	...	...	...	77	341	1.3	1.3	...	3.3	0.9	0.9	...	3.0	11.5	17.1	
226	T.C. Kanyakumari	...	21,812	21,4	25,5	519	25.2	...	...	113	...	...	...	...	...	...	...	...	215	338	0.5	0.5	...	5.2	0.1	...	...	3.0	11.5	17.1	
227	T.C. Pudukottai	...	19,940	216	199	415	20.8	64	1	96	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
228	T.C. Kanyakumari	...	17,263	255	259	485	20.1	8	3	153	66	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
229	T.C. Kanyakumari	...	17,077	255	254	569	29.8	61	10	...	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
230	T.C. Kanyakumari	...	15,966	182	182	296	18.6	22	14	46	20	5	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
231	T.C. Kanyakumari	...	14,262	208	208	438	29.6	10	8	190	13	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
232	T.C. Kanyakumari	...	14,262	208	208	438	29.6	10	8	190	13	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
233	T.C. Kanyakumari	...	14,262	208	208	438	29.6	10	8	190	13	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
234	T.C. Kanyakumari	...	13,798	163	163	327	28.7	17	1	...	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
235	T.C. Kanyakumari	...	13,146	185	185	327	28.7	17	1	...	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
236	T.C. Kanyakumari	...	12,892	187	188	358	27.6	36	...	174	20	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
237	T.C. Kanyakumari	...	12,557	239	139	378	22.7	15	...	100	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
238	T.C. Kanyakumari	...	12,150	113	124	298	19.4	33	...	82	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
239	T.C. Kanyakumari	...	11,005	146	151	297	27.0	22	...	126	...	...	...	...	...	...	...	...	354	517	3.2	0.2	...	9.2	0.1	...	...	3.0	11.5	17.1	
240	T.C. Kanyakumari	...	10,071	103	77	180	17.9	3	...	35	21	...	...	...	...	...	...	...	116	187	0.3	0.6	...	3.5	2.1	0.3	0.1	11.5	18.6	18.6	

No. VI.—Births and Deaths registered from Different Causes in the districts and towns of the Madras Presidency during the year 1919.—cont.

[illegible]

No. VII.—Deaths registered from Cholera in the districts of the Madras Presidency during each month of the year 1919.

Number.	Districts.	3		4		5												6		7	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Circles of registration.		Villages.		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
		Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.													Males.	Females.			Total.	Males.	Females.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
1	Anantapur	22	16	846	33	133	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

No. IX.-- Deaths registered from Fevers in the districts of the Madras Presidency during each month of the year 1919.

Number.	Districts.	Circles of registra- tion.	Number in each district.	Number from which deaths were reported.	4		5												6		7	8		
					Villages.	Number in each district.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.					
																			Number deaths from fevers.	Total.			Males.	Females.
1	Anantapur	22	21	846	129	539	221	318	203	217	228	204	222	196	158	244	284	1,507	1,447	3,014	3.2	3.1	3.1	11.5
2	Bellary	20	20	949	289	515	351	457	384	379	326	363	518	394	287	229	237	2,405	2,121	4,526	4.8	4.4	4.6	15.7
3	Chingleput	20	20	2,157	1,086	1,036	783	597	380	470	482	671	715	507	484	669	880	3,792	3,933	7,725	5.4	5.6	5.5	6.5
4	Chittoor	14	14	2,447	2,447	1,431	981	815	472	518	528	453	567	712	469	567	712	4,690	7,873	7,873	6.2	6.2	6.4	9.4
5	Coimbatore	22	22	1,350	726	983	725	612	505	542	570	565	575	425	581	1,293	1,251	4,545	4,082	8,627	8.5	8.5	8.3	8.3
6	Cuddapah	17	17	882	882	1,123	1,082	747	528	861	685	790	611	601	733	734	859	5,031	4,372	9,403	11.1	9.9	10.5	17.5
7	{ Tanjām Plains Do. Agency	18	18	4,154	3,650	3,009	2,499	3,308	3,340	3,733	3,917	6,108	5,185	4,610	3,971	3,505	4,500	23,381	24,304	47,685	26.9	24.3	25.5	15.9
		1	1	52	36	64	89	44	89	57	33	26	23	10	24	26	15	249	291	540	56.9	65.2	61.1	26.4
8	{ Godavari Plains Do. Agency	19	19	4,200	3,586	3,073	2,588	3,392	3,420	3,790	3,960	6,134	5,208	4,620	3,965	3,551	4,515	23,680	24,585	48,225	27.1	24.4	25.7	15.9
		17	17	833	774	2,104	1,427	1,701	1,276	1,648	2,764	2,737	2,294	1,557	1,762	1,291	1,759	10,984	11,350	22,314	15.5	15.4	15.4	13.1
9	{ Guntoor Kistna ...	22	22	1,935	1,536	3,534	1,946	2,220	1,562	1,883	2,080	3,087	2,728	1,966	2,045	1,516	2,178	13,480	13,816	27,496	16.9	16.4	16.7	13.8
		21	21	945	945	2,563	1,464	1,472	1,214	1,550	1,707	2,471	2,383	1,732	1,887	1,889	2,119	11,252	11,049	22,801	13.1	13.1	13.1	14.7
10	Kurnool	25	25	1,715	565	3,027	1,481	1,194	1,106	1,364	1,911	2,557	2,227	1,909	1,909	1,557	2,137	11,401	11,628	23,029	11.5	11.6	11.5	11.2
11	Madras	12	12	809	709	1,842	1,011	983	987	378	977	1,114	1,126	1,025	1,081	574	1,161	6,820	6,349	13,169	14.5	13.7	14.1	25.9
12	Madras	1	1	1	1	300	187	147	143	205	232	417	633	217	245	280	356	1,461	1,781	3,242	5.6	7.3	6.5	6.6
13	Madras	19	19	1,108	887	1,841	831	751	657	666	672	910	1,032	869	818	1,067	1,398	5,581	5,441	11,002	5.9	5.5	5.7	6.9
14	Madras	18	18	2,213	758	3,324	2,644	2,723	3,147	4,216	5,589	6,802	5,237	3,482	2,632	2,308	3,118	22,535	23,008	45,543	15.2	15.1	15.1	9.1
15	Nellore	21	21	1,302	1,692	1,339	1,190	701	498	742	880	837	1,000	706	913	992	827	5,414	5,211	10,625	8.1	7.9	8.0	10.5
16	Nilgiris, The	6	6	57	54	64	45	64	88	124	117	185	128	148	208	214	121	762	725	1,487	12.5	13.7	13.0	12.1
17	North Arcot	23	23	2,328	1,856	1,558	912	692	442	558	595	641	581	515	672	977	1,695	4,855	4,853	9,708	3.0	4.9	5.0	7.1
18	Ramanad	31	30	3,408	441	1,913	1,185	1,028	846	879	988	1,400	1,008	1,270	940	1,328	7,035	7,603	14,660	9.0	8.7	8.8	7.2	
19	Salom	17	17	2,352	1,745	2,119	1,558	1,419	1,096	1,201	1,307	1,488	1,364	1,195	1,563	2,815	3,625	10,201	20,700	30,900	10.3	10.0	10.1	11.5
20	South Arcot	19	19	2,351	2,351	1,439	1,001	782	806	1,231	1,966	1,666	1,513	1,432	1,239	1,013	7,780	7,919	15,699	6.6	6.7	6.6	6.0	
21	South Kanara	11	11	805	6.0	1,710	886	815	635	814	849	1,036	1,064	1,015	1,094	945	1,035	5,744	6,065	11,809	9.9	9.8	9.9	9.7
22	Tanjore	39	39	2,372	1,372	1,277	736	717	622	731	758	1,240	997	678	673	1,295	2,295	5,813	6,196	12,009	5.2	5.0	5.1	4.9
23	Tinnevely	35	35	1,168	815	1,819	883	655	641	567	466	634	872	974	1,645	1,572	1,697	5,881	6,196	12,009	5.2	5.0	5.1	4.9
24	Trichinopoly	15	15	1,674	451	1,307	950	869	627	577	680	2,298	616	452	658	8.5	1,559	6,447	6,447	12,894	6.7	6.9	7.0	6.9
25	Vizagapatam Plains	28	28	2,009	2,327	5,260	3,674	3,359	2,753	3,610	3,421	4,331	5,251	4,246	3,657	3,364	4,875	24,305	23,426	47,731	23.2	20.9	22.0	24.6
Total, Madras Presidency		495	493	42,052	28,223	44,836	29,306	27,529	23,841	28,338	33,859	42,160	39,381	30,361	30,188	33,139	41,776	201,699	201,800	403,499	10.2	9.9	10.1	10.5

No. X.—Deaths registered from Dysentery and Diarrhoea in the districts of the Madras Presidency during each month of the year 1919.

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 dysentery and diarrhoea were reported.	Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.													Males.	Females.	Total.	Males.	Females.	Total.	
						January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.							
1	Anantapur	22	18	846	163	90	49	62	53	41	49	72	60	34	61	49	45	363	302	665	07	06	07	1.2
2	Bellary	20	19	949	141	129	75	91	67	95	105	150	154	165	113	81	53	684	624	1,308	1.4	1.3	1.3	2.1
3	Chingleput	20	20	2,157	850	742	395	435	257	310	354	823	261	255	242	346	386	2,353	2,123	4,476	3.4	3.0	3.2	2.9
4	Chittoor	14	14	2,447	1,873	292	145	129	162	160	191	130	139	130	80	129	145	959	914	1,873	1.5	1.5	1.5	1.6
5	Coimbatore	22	22	1,350	686	744	426	417	359	324	328	386	416	368	354	516	569	2,640	2,565	5,205	2.5	2.4	2.5	3.0
6	Cuddapah	17	14	882	275	50	56	40	29	55	21	47	81	60	64	43	31	306	271	577	07	06	06	0.8
7	Ganjam Plains	18	18	4,154	780	149	146	147	257	264	299	466	426	242	247	101	153	1,546	1,351	2,897	1.8	1.3	1.5	1.1
	Do. Agency	1	1	52	8	4	...	...	...	1	4	5	4	...	...	...	...	15	8	23	3.4	0.7	2.0	0.7
8	Godavari Plains	17	16	833	276	66	70	77	72	81	91	175	185	138	119	100	76	637	623	1,260	0.9	0.8	0.9	1.2
	Do. Agency	5	5	1,102	103	5	...	7	7	11	13	41	78	45	28	12	20	170	117	287	1.4	1.1	1.3	1.0
9	Guntur	21	20	945	331	87	92	93	71	76	113	129	124	107	82	138	131	603	550	1,153	0.8	0.7	0.7	1.0
	Kistna	26	26	1,715	826	128	77	80	75	77	118	160	148	148	111	100	98	687	654	1,341	0.7	0.7	0.7	1.7
10	Kurnool	12	11	809	198	54	24	21	32	26	23	55	82	46	30	20	31	231	219	450	0.5	0.5	0.5	0.8
11	Madras	1	1	1	1	887	440	423	377	356	227	472	607	393	34	462	535	2,861	2,861	5,722	11.0	11.0	11.0	9.0
12	Madras	19	19	1,108	338	491	208	151	156	110	134	143	152	204	174	249	430	1,357	1,245	2,602	1.4	1.3	1.4	1.4
13	Malabar	18	18	2,213	693	1,005	878	904	1,034	1,584	2,252	2,745	2,616	1,417	758	632	982	8,151	8,151	16,302	5.5	5.7	5.6	2.8
14	Nellore	21	17	1,602	566	108	81	50	32	30	32	24	37	30	40	48	60	310	262	572	0.5	0.4	0.4	1.0
15	Nilgiris, The	6	6	57	32	29	25	50	45	75	68	58	51	34	56	50	34	304	271	575	5.0	5.1	5.0	5.7
16	North Arcot	29	28	2,326	919	754	519	348	256	355	357	328	311	256	252	330	513	2,336	2,236	4,572	2.5	2.3	2.4	3.1
17	Ramanad	31	29	3,408	1,011	192	129	85	58	63	85	72	79	102	137	143	215	1,198	1,122	2,320	1.2	1.1	1.2	1.5
18	Salem	17	17	2,562	473	79	171	148	146	168	227	204	169	129	135	234	250	1,694	1,568	3,262	1.4	1.3	1.4	1.5
19	South Arcot	19	19	2,351	391	326	206	214	334	415	247	207	159	159	236	245	402	1,694	1,568	3,262	1.4	1.3	1.4	1.5
20	South Kanara	11	11	805	548	461	376	268	174	195	356	727	715	627	461	521	521	2,812	2,509	5,321	4.9	4.6	4.7	2.4
21	Tanjore	30	29	2,327	511	333	220	162	118	127	137	142	186	177	180	240	399	1,276	1,165	2,441	1.1	0.9	1.0	1.2
22	Tinnevely	35	32	1,168	384	495	224	169	93	102	133	113	144	124	175	254	479	1,262	1,245	2,507	1.5	1.3	1.4	1.2
23	Trichinopoly	15	15	1,074	452	254	196	125	103	140	117	250	114	101	137	201	384	1,126	1,011	2,137	1.3	1.1	1.2	1.2
24	Vizagapatam Plains	25	25	2,609	218	161	159	130	110	138	107	215	237	182	145	116	121	881	840	1,821	0.9	0.8	0.8	0.7
25	Total, Madras Presidency	495	489	42,052	14,047	8,405	5,809	4,821	4,357	5,804	6,423	7,958	7,686	5,774	5,054	5,380	7,103	37,679	36,395	74,074	1.9	1.8	1.9	1.7

APPENDIX

No. XI.—Deaths registered from Respiratory Diseases in the districts of the Madras Presidency during each month of the year 1919.

1	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.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
					Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.			Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Number in each district.	Number from which deaths were reported.	Males.	Females.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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APPENDIX

No. XII.—Deaths registered from Plague in the districts of the Madras Presidency during each month of the year 1919.

1	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.	Mean ratio per 1,000 for previous 5 years.					
			Number in each district.	Number from which deaths were reported.																			Number in each district.	Number from which deaths were reported.			
1	Anantapur	22	12	23	846	23	81	30	2	2	2	2	5	26	84	125	235	190	165	21	81	80	141	0.2	0.1	0.1	
2	Bellary	26	13	39	949	39	269	137	45	45	45	16	16	18	18	125	235	190	165	28	778	801	1,579	1.6	1.7	1.6	
3	Chingleput	20	3	6	2,157	6	21	7	...	...	...	...	...	...	...	...	...	...	...	...	20	8	10	18	0.01	0.01	0.003
4	Chittoor	14	6	6	2,447	6	372	269	100	100	100	6	...	22	98	115	167	146	94	210	778	820	1,598	0.7	0.8	0.7	
5	Cumbaloor	22	14	87	1,350	87	372	269	100	100	100	6	...	22	98	115	167	146	94	210	778	820	1,598	0.7	0.8	0.7	
6	Cuddapah	17	1	1	882	1	13	24	4	4	4	...	...	...	...	...	...	...	...	...	23	18	41	0.03	0.04	0.03	
7	Ganjām Plains Do. Agency	18	...	...	4,154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Ganjām Plains Do. Agency	19	...	...	4,206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	Guntur	21	12	26	945	26	169	179	72	72	72	22	8	4	3	...	...	...	...	...	...	...	...	...	...	...	...
10	Kistna	26	1	1	1,715	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Karnool	12	6	11	809	11	55	52	5	5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Madras	1	1	1	1	1	8	5	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Madras	18	5	14	1,108	14	28	21	3	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Malabar	2,218	7	9	2,218	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Nellore	21	4	8	1,602	8	3	3	4	4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Nilgiris, The	6	16	68	2,326	68	192	134	79	79	79	8	9	3	1	2	...	...	...	...	...	...	...	...	...	...	...
17	North Arcot	29	1	1	3,408	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Ramanad	31	1	1	2,562	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Salem	17	10	49	2,351	49	118	83	42	42	42	12	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	South Arcot	19	...	...	805	...	3	1	2	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	South Kanara	11	1	1	2,527	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Tanjore	30	2	4	2,527	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Tinnevely	35	1	1	1,768	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	Tichinopoly	15	3	8	1,074	8	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Vizagapatam Plains	28	...	...	2,609	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total, Madras Presidency ...		495	120	363	42,052	363	1,367	947	379	68	30	76	219	826	466	401	459	920	2,782	2,876	5,658	0.1	0.1	0.1	0.3	0.3	

No. XIII.—Comparative table showing percentage of mortality to total mortality from year to year under each head of death causation.

6



1917	48.2	3.7	0.1	11.5	8.5	76.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</
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(Comparative table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2		3		4				5		6						
	Date of completion of works of		Average annual death-rate since the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.				Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.		Percentage of deaths to total mortality under each head of death causation.						
	Drainage.	Water-supply.	Years.	Death-rate.	Cholera.	Small-pox.	Fever.	Dysentery and diarr.	All other causes.	Years.	Death-rate.	Cholera.	Small-pox.	Fever.	Dysentery and diarr.	All other causes.	
Coonoor—cont.	...	1893	1902	29.0	...	...	25.1	19.0	55.9	...	...	...	...	...	...	...	
			1903	46.0	...	...	8.2	16.3	75.5	...	...	...	...	...	...	...	
			1904	27.6	...	...	3.0	23.4	73.6	...	...	...	...	...	...	...	
			1905	37.0	...	...	1.6	19.7	78.7	...	...	...	...	...	...	...	
			1906	44.4	...	...	0.8	16.6	59.1	...	...	...	...	...	...	...	
			1907	31.4	...	...	22.4	...	...	...	...	...	...	...	...	...	
			1908	26.6	...	...	...	1.1	81.7	...	...	...	...	...	...	...	
			1909	32.5	...	...	4.8	20.3	74.5	...	...	...	...	...	...	...	
			1910	29.0	...	...	...	15.9	79.4	...	...	...	...	...	...	...	
			1911	31.4	...	...	0.8	14.2	85.0	...	...	...	...	...	...	...	
			1912	26.0	...	...	0.3	16.3	80.2	...	...	...	...	...	...	...	
			1913	30.4	...	...	0.4	14.7	82.2	...	...	...	...	...	...	...	
			1914	28.7	...	...	...	15.2	81.5	...	...	...	...	...	...	...	
			1915	21.6	...	...	...	17.2	80.7	...	...	...	...	...	...	...	
			1916	28.7	...	...	...	13.8	77.2	...	...	...	...	...	...	...	
			1917	32.4	...	...	...	15.2	73.3	...	...	...	...	...	...	...	
Cuddapah	...	1898	1902	37.1	...	...	...	...	...	...	...	...	...	...	...	...	
			1903	50.4	...	...	...	...	...	...	...	...	...	...	...	...	...
			1904	38.9	...	...	...	...	...	...	...	...	...	...	...	...	...
			1905	28.4	...	...	...	...	...	...	...	...	...	...	...	...	...
			1906	34.5	...	...	...	...	...	...	...	...	...	...	...	...	...
			1907	37.1	...	...	...	...	...	...	...	...	...	...	...	...	...
			1908	50.4	...	...	...	...	...	...	...	...	...	...	...	...	...
			1909	30.2	...	...	...	...	...	...	...	...	...	...	...	...	...
			1910	36.5	...	...	...	...	...	...	...	...	...	...	...	...	...
			1911	38.0	...	...	...	...	...	...	...	...	...	...	...	...	...
			1912	35.4	...	...	...	...	...	...	...	...	...	...	...	...	...
			1913	18.3	...	...	...	...	...	...	...	...	...	...	...	...	...
			1914	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1915	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1916	...	...	...	...	...	...	...	...	...	...	...	...	...	...
			1917	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Dindigul	...	1898	1902	23.5	2.4	0.7	26.3	8.1	62.6	...	...	...	...	...	...	...
			1903	23.4	1.0	0.5	21.8	10.1	66.6	...	...	...	...	...	...	...
			1904	42.4	1.6	0.6	30.4	6.5	55.0	...	...	...	...	...	...	...
			1905	62.7	2.4	1.3	33.6	7.5	55.2	...	...	...	...	...	...	...
			1906	32.6	3.4	0.2	15.5	10.5	70.4	...	...	...	...	...	...	...
			1907	22.1	9.0	1.1	25.4	11.3	53.2	...	...	...	...	...	...	...
			1908	18.9	47.3	2.2	14.8	7.0	28.7	...	...	...	...	...	...	...
			1909	34.9	15.7	1.1	22.3	13.6	47.3	...	...	...	...	...	...	...
			1910	38.9	...	1.7	22.0	11.5	55.8	...	...	...	...	...	...	...
			1911	34.4	...	1.0	22.7	16.0	38.8	...	...	...	...	...	...	...
			1912	34.4	...	...	25.3	14.4	38.2	...	...	...	...	...	...	...
			1913	33.1	...	...	...	18.8	38.7	...	...	...	...	...	...	...
			1914	39.7	...	...	...	21.5	60.0	...	...	...	...	...	...	...
			1915	33.9	...	...	...	16.9	86.1	...	...	...	...	...	...	...
			1916	34.1	...	...	...	14.7	50.3	...	...	...	...	...	...	...
			1917	40.6	...	...	...	12.7	52.6	...	...	...	...	...	...	...
Ellore	...	1919	1902	27.5	...	...	...	...	...	...	...	...	...	...	...	...
			1903	...	...	...	...	...	...	...	...	...	...	...	...	...
			1904	...	...	...	...	...	...	...	...	...	...	...	...	...
			1905	...	...	...	...	...	...	...	...	...	...	...	...	...
			1906	...	...	...	...	...	...	...	...	...	...	...	...	...
			1907	...	...	...	...	...	...	...	...	...	...	...	...	...
			1908	...	...	...	...	...	...	...	...	...	...	...	...	...
			1909	...	...	...	...	...	...	...	...	...	...	...	...	...
			1910	...	...	...	...	...	...	...	...	...	...	...	...	...
			1911	...	...	...	...	...	...	...	...	...	...	...	...	...
			1912	...	...	...	...	...	...	...	...	...	...	...	...	...
			1913	...	...	...	...	...	...	...	...	...	...	...	...	...
			1914	...	...	...	...	...	...	...	...	...	...	...	...	...
			1915	...	...	...	...	...	...	...	...	...	...	...	...	...
			1916	...	...	...	...	...	...	...	...	...	...	...	...	...
			1917	...	...	...	...	...	...	...	...	...	...	...	...	...
Erode	...	1919	1902	32.6	...	...	...	...	...	...	...	...	...	...	...	...
			1903	...	...	...	...	...	...	...	...	...	...	...	...	...
			1904	...	...	...	...	...	...	...	...	...	...	...	...	...
			1905	...	...	...	...	...	...	...	...	...	...	...	...	...
			1906	...	...	...	...	...	...	...	...	...	...	...	...	...
			1907	...	...	...	...	...	...	...	...	...	...	...	...	...
			1908	...	...	...	...	...	...	...	...	...	...	...	...	...
			1909	...	...	...	...	...	...	...	...	...	...	...	...	...
			1910	...	...	...	...	...	...	...	...	...	...	...	...	...
			1911	...	...	...	...	...	...	...	...	...	...	...	...	...
			1912	...	...	...	...	...	...	...	...	...	...	...	...	...
			1913	...	...	...	...	...	...	...	...	...	...	...	...	...
			1914	...	...	...	...	...	...	...	...	...	...	...	...	...
			1915	...	...	...	...	...	...	...	...	...	...	...	...	...
			1916	...	...	...	...	...	...	...	...	...	...	...	...	...
			1917	...	...	...	...	...	...	...	...	...	...	...	...	...
Guntur	...	1908	1902	31.6	...	...	...	...	...	...	...	...	...	...	...	...
			1903	...	...	...	...	...	...	...	...	...	...	...	...	...
			1904	...	...	...	...	...	...	...	...	...	...	...	...	...
			1905	...	...	...	...	...	...	...	...	...	...	...	...	...
			1906	...	...	...	...	...	...	...	...	...	...	...	...	...
			1907	...	...	...	...	...	...	...	...	...	...	...	...	...
			1908	...	...	...	...	...	...	...	...	...	...	...	...	...
			1909	...	...	...	...	...	...	...	...	...	...	...	...	...
			1910	...	...	...	...	...	...	...	...	...	...	...	...	...
			1911	...	...	...	...	...	...	...	...	...	...	...	...	...
			1912	...	...	...	...	...	...	...	...	...	...	...	...	...
			1913	...	...	...	...	...	...	...	...	...	...	...	...	...
			1914	...	...	...	...	...	...	...	...	...	...	...	...	...
			1915	...	...	...	...	...	...	...	...	...	...	...	...	...
			1916	...	...	...	...	...	...	...	...	...	...	...	...	...
			1917	...	...	...	...	...	...	...	...	...	...	...	...	...
			1918	...	...	...	...	...	...	...	...	...	...	...	...	...

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1900	29.3	...	...	0.3	45.6	168	37.3	1894	31.3	3.1	0.1	47.0	4.6	45.4
1901	32.0	...	...	...	49.9	15.8	34.3	1895	30.5	6.2	0.4	44.0	3.4	46.1
1902	30.0	...	2.0	...	37.4	13.9	46.7	1896	30.4	4.0	1.9	44.1	3.6	45.4
1903	28.4	...	...	0.1	24.8	17.9	57.2	...	...	...	...	...	...	...
1904	26.1	...	...	...	19.9	22.0	58.1	...	...	...	...	...	...	...
1905	35.5	...	...	2.8	25.7	18.7	52.8	...	...	...	...	...	...	...
1906	43.5	...	...	1.9	29.3	11.1	40.8	...	...	...	...	...	...	...
1907	29.5	...	...	0.1	40.1	25.7	34.1	...	...	...	...	...	...	...
1908	36.8	...	2.5	0.4	45.7	22.8	28.6	...	...	...	...	...	...	...
1909	34.4	...	0.1	0.1	46.5	19.8	33.1	...	...	...	...	...	...	...
1910	37.6	...	...	...	46.0	19.1	34.9	...	...	...	...	...	...	...
1911	27.5	...	...	0.1	42.0	19.9	38.6	...	...	...	...	...	...	...
1912	39.6	...	4.1	0.2	38.9	20.1	36.7	...	...	...	...	...	...	...
1913	34.6	...	1.6	0.7	44.9	18.6	34.2	...	...	...	...	...	...	...
1914	43.8	...	4.2	4.2	37.3	12.4	41.4	...	...	...	...	...	...	...
1915	33.0	...	...	0.1	32.5	7.6	59.8	...	...	...	...	...	...	...
1916	28.7	...	...	...	38.6	11.1	50.3	...	...	...	...	...	...	...
1917	38.2	...	2.6	3.2	40.8	6.9	46.5	...	...	...	...	...	...	...
1918	63.0	...	0.8	3.7	51.9	3.9	39.7	...	...	...	...	...	...	...
1919	29.3	...	0.3	...	39.1	5.2	55.4	...	...	...	...	...	...	...
1920	35.2	...	...	...	...	...	...	...	...	...	...	...	...	...
1921	36.7	...	...	...	...	...	...	...	...	...	...	...	...	...
1922	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1923	65.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1924	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1925	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1926	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1927	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1928	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1929	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1930	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1931	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1932	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1933	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1934	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1935	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1936	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1937	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1938	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1939	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1940	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1941	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1942	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1943	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1944	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1945	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1946	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1947	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1948	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1949	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1950	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1951	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1952	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1953	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1954	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1955	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1956	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1957	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1958	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1959	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1960	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1961	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1962	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1963	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1964	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1965	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1966	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1967	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1968	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1969	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1970	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1971	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1972	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1973	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1974	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1975	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1976	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1977	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1978	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1979	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1980	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1981	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1982	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1983	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1984	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1985	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1986	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1987	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1988	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1989	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1990	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1991	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1992	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1993	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1994	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1995	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1996	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1997	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1998	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
1999	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...
2000	38.6	...	...	...	...	...	...	...	...	...	...	...	...	...

Negapatam	1914	36.0	10.0	2.5	2.4	20.5	64.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</
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APPENDIX

(Comparative table showing percentage of mortality to total mortality from year to year under each head of death causation.)

1	2	3	4				5	6								
Name of municipality.	Date of completion of works of	Average annual death-rate since the introduction of drainage system or water-supply.	Percentage of deaths to total mortality under each head of death causation.				Average annual death-rate for the five-year period preceding the introduction of drainage system or water-supply.	Percentage of deaths to total mortality under each head of death causation.								
			Cholera.	Small-pox.	Fever.	Dysentery and diar.		All other causes.	Cholera.	Small-pox.	Fever.	Dysentery and diar.	All other causes.			
														Years.	Death-rate.	Years.
Tanjore—cont.	...	1895 ...	1900	27.0	4.8	2.5	22.2	19.8	50.7	1894	26.9	15.2	0.9	16.5	26.3	41.1
			1901	26.0	5.2	0.1	18.2	25.7	50.8	...	...	...	...	...	...	...
			1902	29.2	3.5	0.6	9.7	18.0	68.2	...	...	...	...	...	...	...
			1903	29.1	1.7	0.1	10.0	14.0	74.2	...	...	...	...	...	...	...
			1904	30.3	2.9	2.2	12.3	15.0	67.6	...	...	...	...	...	...	...
			1905	30.3	0.1	10.3	13.4	12.4	63.8	...	...	...	...	...	...	...
			1906	33.6	2.5	5.6	15.5	13.6	62.8	...	...	...	...	...	...	...
			1907	35.1	4.7	1.9	15.4	13.3	64.7	...	...	...	...	...	...	...
			1908	33.3	4.3	1.2	12.2	14.4	67.9	...	...	...	...	...	...	...
			1909	34.1	1.7	1.1	11.8	15.4	70.0	...	...	...	...	...	...	...
			1910	39.9	5.1	14.2	8.7	14.6	57.4	...	...	...	...	...	...	...
			1911	32.6	8.3	1.9	6.6	17.8	65.4	...	...	...	...	...	...	...
			1912	32.4	2.2	0.2	7.9	21.6	68.1	...	...	...	...	...	...	...
			1913	32.5	3.7	1.2	8.5	18.2	68.4	...	...	...	...	...	...	...
			1914	33.8	3.9	3.0	7.2	17.6	68.3	...	...	...	...	...	...	...
			1915	37.5	2.0	11.2	11.0	14.9	60.9	...	...	...	...	...	...	...
			1916	30.5	0.3	1.8	11.1	15.2	71.6	...	...	...	...	...	...	...
			1917	34.6	0.1	1.6	8.8	15.2	74.3	...	...	...	...	...	...	...
1918	50.5	3.1	2.2	30.4	12.0	52.3	...	...	...	...	...	...	...			
1919	37.3	1.8	2.7	16.8	15.4	63.3	...	...	...	...	...	...	...			
1899	31.5	9.4	...	33.4	7.1	50.1	...	...	...	...	...	...	...			
1900	33.9	6.0	...	19.5	9.9	64.6	1894	31.6	3.8	1.8	31.8	8.0	54.6			
1901	30.8	3.1	...	22.7	11.1	63.1	1895	29.0	1.2	...	39.7	10.9	48.2			
1902	35.3	...	4.2	27.4	13.7	54.7	1896	30.2	5.1	0.2	46.5	5.8	43.4			
1903	30.5	...	0.2	20.9	20.1	58.8	1897	34.2	2.7	0.4	36.5	10.0	50.4			
1904	28.6	0.2	...	17.6	12.6	69.6	1898	29.6	2.6	0.5	37.7	5.0	54.2			
1905	35.3	4.2	...	14.3	22.7	58.8	...	...	...	...	...	...	...			
1906	41.7	4.8	...	21.9	20.1	52.4	...	...	...	...	...	...	...			
1907	36.8	...	0.8	18.1	21.9	60.0	...	...	...	...	...	...	...			
1908	40.0	...	...	20.4	19.7	56.4	...	...	...	...	...	...	...			
1909	39.3	...	0.1	28.1	15.4	55.5	...	...	...	...	...	...	...			
1910	34.6	...	0.7	33.6	8.0	56.9	...	...	...	...	...	...	...			
1911	32.2	...	1.5	30.5	9.1	53.8	...	...	...	...	...	...	...			
1912	37.2	...	0.2	25.4	10.0	51.4	...	...	...	...	...	...	...			
1913	27.3	...	13.2	33.3	10.8	53.3	...	...	...	...	...	...	...			
1914	34.4	...	0.2	33.3	8.4	50.0	...	...	...	...	...	...	...			
1915	28.5	...	...	23.3	25.0	43.5	...	...	...	...	...	...	...			
1916	31.7	...	1.9	28.8	15.7	48.5	...	...	...	...	...	...	...			
1917	32.2	...	...	33.5	11.9	56.8	...	...	...	...	...	...	...			
1918	40.5	...	0.9	30.0	11.9	56.8	...	...	...	...	...	...	...			
			4.0	41.6	8.7	45.3	...	...	...	...	...	...	...			
Tirupati ...	...	1899 ...	1900	27.0	4.8	2.5	22.2	19.8	50.7	1894	26.9	15.2	0.9	16.5	26.3	41.1
			1901	26.0	5.2	0.1	18.2	25.7	50.8	...	...	...	...	...	...	...
			1902	29.2	3.5	0.6	9.7	18.0	68.2	...	...	...	...	...	...	...
			1903	29.1	1.7	0.1	10.0	14.0	74.2	...	...	...	...	...	...	...
			1904	30.3	2.9	2.2	12.3	15.0	67.6	...	...	...	...	...	...	...
			1905	30.3	0.1	10.3	13.4	12.4	63.8	...	...	...	...	...	...	...
			1906	33.6	2.5	5.6	15.5	13.6	62.8	...	...	...	...	...	...	...
			1907	35.1	4.7	1.9	15.4	13.3	64.7	...	...	...	...	...	...	...
			1908	33.3	4.3	1.2	12.2	14.4	67.9	...	...	...	...	...	...	...
			1909	34.1	1.7	1.1	11.8	15.4	70.0	...	...	...	...	...	...	...
			1910	39.9	5.1	14.2	8.7	14.6	57.4	...	...	...	...	...	...	...
			1911	32.6	8.3	1.9	6.6	17.8	65.4	...	...	...	...	...	...	...
			1912	32.4	2.2	0.2	7.9	21.6	68.1	...	...	...	...	...	...	...
			1913	32.5	3.7	1.2	8.5	18.2	68.4	...	...	...	...	...	...	...
			1914	33.8	3.9	3.0	7.2	17.6	68.3	...	...	...	...	...	...	...
			1915	37.5	2.0	11.2	11.0	14.9	60.9	...	...	...	...	...	...	...
			1916	30.5	0.3	1.8	11.1	15.2	71.6	...	...	...	...	...	...	...
			1917	34.6	0.1	1.6	8.8	15.2	74.3	...	...	...	...	...	...	...
1918	50.5	3.1	2.2	30.4	12.0	52.3	...	...	...	...	...	...	...			
1919	37.3	1.8	2.7	16.8	15.4	63.3	...	...	...	...	...	...	...			
1899	31.5	9.4	...	33.4	7.1	50.1	...	...	...	...	...	...	...			
1900	33.9	6.0	...	19.5	9.9	64.6	1894	31.6	3.8	1.8	31.8	8.0	54.6			
1901	30.8	3.1	...	22.7	11.1	63.1	1895	29.0	1.2	...	39.7	10.9	48.2			
1902	35.3	...	4.2	27.4	13.7	54.7	1896	30.2	5.1	0.2	46.5	5.8	43.4			
1903	30.5	...	0.2	20.9	20.1	58.8	1897	34.2	2.7	0.4	36.5	10.0	50.4			
1904	28.6	0.2	...	17.6	12.6	69.6	1898	29.6	2.6	0.5	37.7	5.0	54.2			
1905	35.3	4.2	...	14.3	22.7	58.8	...	...	...	...	...	...	...			
1906	41.7	4.8	...	21.9	20.1	52.4	...	...	...	...	...	...	...			
1907	36.8	...	0.8	18.1	21.9	60.0	...	...	...	...	...	...	...			
1908	40.0	...	...	20.4	19.7	56.4	...	...	...	...	...	...	...			
1909	39.3	...	0.1	28.1	15.4	55.5	...	...	...	...	...	...	...			
1910	34.6	...	0.7	33.6	8.0	56.9	...	...	...	...	...	...	...			
1911	32.2	...	1.5	30.5	9.1	53.8	...	...	...	...	...	...	...			
1912	37.2	...	0.2	25.4	10.0	51.4	...	...	...	...	...	...	...			
1913	27.3	...	...	33.3	10.8	53.3	...	...	...	...	...	...	...			
1914	34.4	...	0.2	33.3	8.4	50.0	...	...	...	...	...	...	...			
1915	28.5	...	...	23.3	25.0	43.5	...	...	...	...	...	...	...			
1916	31.7	...	1.9	28.8	15.7	48.5	...	...	...	...	...	...	...			
1917	32.2	...	...	33.5	11.9	56.8	...	...	...	...	...	...	...			
1918	40.5	...	0.9	30.0	11.9	56.8	...	...	...	...	...	...	...			
			4.0	41.6	8.7	45.3	...	...	...	...	...	...	...			

VITAL STATISTICS OF THE GENERAL POPULATION

Trichinopoly	1919	39.5	8.5	2.7	16.5	18.8	53.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</
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THE
THIRTIETH ANNUAL REPORT
OF THE
SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
1919.

This report is for the calendar year 1919 under G.O. No. 944 L., dated 4th June 1913.

2. During the year, there were 29 municipalities mentioned below with protected water-supply systems in operation against 27 of the previous year, and one underground drainage system as before.

These works were frequently inspected by the Sanitary Engineer, the Deputy and Assistant Sanitary Engineers and the Boiler Inspecting staff and the defects observed in the working of the systems and of the pumping machinery, etc., connected therewith were pointed out to the Municipal Councils concerned by means of inspection notes containing the requisite instructions towards remedying the defects thus observed. It was also a satisfactory feature that the persistent emphasis laid by the Sanitary Engineer in the course of the year on the necessity for promptness on the part of Municipal Councils in the submission of their replies to the above mentioned inspection notes and in the carrying out of the remedial measures suggested in those notes, has had some salutary effect.

Water works.

- | | |
|------------------|---------------------------------------|
| (1) Adōni. | (16) Kurnool. |
| (2) Berhampur. | (17) Madura. |
| (3) Bezwada. | (18) Masulipatam. |
| (4) Chidambaram. | (19) Negapatam. |
| (5) Cocanada. | (20) Nellore. |
| (6) Conjeeveram. | (21) Ootacamund. |
| (7) Coonoor. | (22) Periyakulam. |
| (8) Cuddapah. | (23) Salem. |
| (9) Dindigul. | (24) Tanjore. |
| (10) Ellore. | (25) Tirupati. |
| (11) Erode. | (26) Trichinopoly. |
| (12) Gudiyāttam. | (27) Vellore. |
| (13) Guntūr. | (28) Vizagapatam (including Waltair). |
| (14) Kodaikānal. | (29) Vizianagram. |
| (15) Kumbakōnam | |

Drainage works.

- (1) Ootacamund.

3. *Works under execution.*—The following works were in course of execution by the Public Works Department during the year :—

- | | |
|--|--|
| (1) Madura drainage. | (8) Narasaraopet water-supply (full power test). |
| (2) Vellore " | (9) Tuticorin water-supply (Tāmbraparni river scheme—full power test). |
| (3) Erode water-supply (since completed—vide item 11, under paragraph 2 above). | (10) Tuticorin water-supply (partial). |
| (4) Ellore water-supply (since completed—vide item 10, under paragraph 2 above). | (11) Madura water works improvements. |
| (5) Rāmēswaram water-supply. | (12) Tirupati " |
| (6) Chingleput " | (13) Adōni " |
| (7) Anantapur " | (14) Cuddapah " |

4. *Works (included in paragraph 3 above) completed during the year.*—(i) *Erode water works.*—The execution of this scheme was completed and the water works formally opened by the Hon'ble Diwan Bahadur (and now Sir) P. Rajagopala Achariyar, K.C.S.I., in May 1919. The cost of the scheme as finally sanctioned in G.O. No. 160 W., dated 29th January 1918, while it was in course of execution was Rs. 3,45,200, differing little from the amount of the estimate initially sanctioned in G.O. No. 157 W., dated 21st January 1914. The scheme may be briefly described as follows:—

It provides for the supply of 15 gallons per head per diem for an ultimate population of 25,000 (in 1941) of water pumped from a deep pool in the Cauvery at a distance of $3\frac{1}{2}$ miles from the town of Erode where the river flows through a succession of rapids. The water is taken through a suction main carried along the rocky river-bed to the pumping station on the right bank from which the water, after treatment in a coagulating tank and a mechanical gravity filter, is passed into a clear water well, whence it is pumped by a high lift pump to a service reservoir on the Pachiparai hillock 130 feet above the river bed, and thence the supply is distributed to the town by gravitation.

(ii) *Ellore water works.*—The execution of this scheme was also completed during the year and the water works were formally opened by the Hon'ble Mr. M. Ramachandra Rao. The cost of the scheme as sanctioned in G.Os. Nos. 464 W., dated 21st March 1916, and 1069 W., dated 10th August 1917, was Rs. 5,11,000 against the estimate of Rs. 4,93,800 initially sanctioned in G.O. No. 1731 W., dated 29th August 1913. Particulars of this scheme in brief are as follows:—

The Ellore water-supply system provides for a 15 gallon supply for an ultimate population of 58,000 (37,842 at the Census of 1911) in 1941, from the Ellore canal of the Kistna anicut system which contains water for nine months in the year, and is closed for the rest of the year for repairs. For seven months in the year the canal water is passed through a storage tank constructed at the right bank of the canal on the outskirts of the town, and which has a storing capacity for three months' supply to the town, and in this tank the canal water deposits in its passage the major quantity of its silt. During the two months prior to the commencement of the three months' annual closure of the canal for repairs, additional water will be passed into the tank by means of a steam centrifugal pumping engine raising the water level in the tank by $13\frac{1}{2}$ feet above the normal gravitation level so as to meet the town requirements during the three months' closure. The tank water is drawn off by a floating arm outlet to the slow sand filters and passed after filtration to a clear water reservoir and then into a suction well, pumped thence by steam pumps through a cast iron rising main of 14" diameter to a masonry service reservoir with a special grided foundation located in the old fort, the most elevated portion of the town of Ellore, and distributed thence by about ten miles length of cast iron distribution pipes laid throughout the town.

5. *Works under execution by the Sanitary Engineer during the year.*—(1) *Experimental urinal at Chepauk.*—Experiments for testing the efficiency of disinfectants on the floor of the urinal which was advisedly cement-plastered throughout, were in progress during the year.

(2) *Improvements to the Mahamalkham tank at Kumbakonam.*—As a preliminary to experiments proposed to be conducted on the "Cavity" principle in connexion with the boring which, as mentioned in the previous annual report, had reached a depth of $237\frac{1}{2}$ feet, arrangements were made to construct a catchwell of 10 feet diameter, and this has been sunk to a depth of $30\frac{1}{2}$ feet below ground level. Further sinking under difficulties was in progress.

(3) *Gudur water-supply.*—Work in connexion with the sinking of the first experimental well to a depth of 40 feet and of the second well to a depth of 25 feet was, after experiencing great many impediments due to the existence of quick-sand for considerable depths, approaching completion by the end of the year.

(4) *Bellary water-supply—Full Power Test.*—The construction of the second well was completed and full power tests conducted on both the first and second wells with satisfactory results so far as the yield was concerned. A full report of

the case with an estimate of Rs. 6,000 for further investigation was forwarded to Government in October 1919 and the estimate sanctioned in G.O. No. 37 W., dated 7th January 1920.

(5) *Guntur water-works improvements.*—The execution of a new gallery for improving the town supply at an estimated cost of Rs. 14,500 approved by the Sanitary Board in July 1917 was on provision of funds started in May 1918 and carried down to a depth of 25 feet and for a length of 800 feet by the beginning of the year under report. The yield from the new trench being found rather disappointing, an estimate amounting to Rs. 17,000 for deepening the existing square well and the newly excavated trench for a length of 400 feet was under the orders of the Chief Engineer drawn up and submitted in October 1919. This has since been sanctioned (G.O. No. 274 W., dated 14th February 1920).

6. *Schemes for which plans and estimates were drawn up and forwarded for sanction.*—Detailed plans and estimates for the following eleven water-supply and drainage schemes were drawn up and forwarded by the Sanitary Engineer to Government for sanction during the year, the aggregate estimated cost of the schemes thus submitted being Rs. 74,35,780:—

(1) *Bellary water-supply.*—Revised alternative estimates of Rs. 17,53,580 and Rs. 16,36,500, respectively, for a 15-gallon and a 10-gallon scheme of water-supply from the Hagari site for an ultimate population of 65,000 in Bellary town, and providing for increased rates were forwarded with the Sanitary Engineer's letter No. 277-G., dated 27th March 1919 for sanction.

(2) *Coimbatore water-supply.*—Detailed plans and estimates aggregating Rs. 37,12,700 were forwarded with the Sanitary Engineer's No. 1074-G., dated 23rd December 1919, for the sanction of Government for a 20-gallon scheme of supply by gravitation for an ultimate population of 100,000 in the municipal town of Coimbatore, of potable water taken off from a point in the bed of the Anayar-kundi stream 20 miles distant from the town.

(3) *Ongole water-supply.*—Detailed plans and estimates amounting to Rs. 1,15,000 for installation and Rs. 5,500 for annual maintenance were forwarded in March 1919 through the Sanitary Commissioner to the Sanitary Board for being recommended to Government for sanction for 10-gallon scheme (5-gallon rate allowed, however, at the commencement) of supply for an ultimate population of 18,000 (13,286 at the census of 1911) in the municipal town of Ongole, of drinking water proposed to be pumped from an existing well $77\frac{1}{2}$ feet deep, called the "Temple well" or "Kothandaramayya well" at the foot of the Ongole Hill at the south end of the town, by means of 2 sets of Duplex direct acting vertical pumps and engines, through a 7-inch pumping main to a service reservoir of two compartments of 4 hours capacity each, on the slope of the said hill—the total lift involved being 112 feet including allowance for friction and suction—and distributed thence throughout the town by a system of cast iron tributary pipes and fountains.

The scheme with its estimated cost slightly modified by the Chief Engineer to Rs. 1,18,000 was since recommended to Government for sanction by the Sanitary Board in their Resolution No. 486-S., dated 11th November 1919.

(4) *Tellicherry drainage.*—Detailed plans and estimates were forwarded to Government with this office No. 393-G., dated 15th May 1919 for (i) combined disposal works estimated to cost Rs. 55,000 for the disposal of the contents of the drains of the Chali ward of the Tellicherry municipality and of the night-soil of the whole town, comprising a new road 1,050 feet long, 3 night-soil shoots, a line of 9-inch stoneware pipes 6,000 feet long to pick up and carry the contents of these shoots, and also three times the dry weather flow from the Chali ward drains, and a septic tank the effluent from which is proposed to be let into the sandy beach to percolate thence into the Arabian Sea, and for (ii) an alternative proposal estimated to cost Rs. 15,000 for the drainage of the Chali ward alone, providing for a 9-inch cast iron pipe sewer for a length of 955 feet from the end of the Chali drains fitted with a storm water separator.

Estimate No. (i) above was recommended by the Sanitary Engineer for sanction.

(5) *Salem drainage*.—Detailed plans and estimates aggregating Rupees 13,50,000 were forwarded with the Sanitary Engineer's No. 580-G., dated 15th July 1919, through the Sanitary Commissioner to the Sanitary Board for approval and recommendation to Government for sanction. The scheme is designed to serve an ultimate population of 80,000 and provides for the construction of 85 miles of open drains, two intercepting sewers to be laid along the banks of the Tirumanimuttar River running through the town from north-east to south-west. The sewage from these intercepting sewers is to be passed through a screening chamber at the tail end of sewer No. 1 to pumping wells, and pumped thence through an 18-inch cast iron main 5,635 feet long into a septic tank, the effluent from which will be passed on to a sewage farm proposed to be laid out in Annadanapatti Mitta, outside the municipal limits.

(6) *Rajahmundry drainage (partial)*.—This scheme, estimated to cost Rs. 1,90,000, is designed to benefit the portion of the town between the railway line and the left bank of the Godavari divided into seven drainage blocks, and comprises construction of four open drains for carrying both storm water and sullage, two intercepting sewers, a subsidiary pumping station with the necessary pumping machinery for lifting the sullage and storm water from the one intercepting sewer to the other through a 6-inch cast iron rising main, a main pumping station and a sewage farm of 5 acres.

Plans and estimates were forwarded to the Sanitary Board with this office No. 1279-G., dated 27th March 1919.

(7) *Guntur water works improvements*.—Vide item (5) under paragraph 5 above.

(8) *Ootacamund water-supply (southern portion)*.—Detailed plans and estimates amounting to Rs. 34,000, drawn up by the Municipal Council for laying water service branch mains to Manjanakorai and Lovedale from the existing Doda-batta water-supply system of the Ootacamund municipality, were referred by Government in the Local Municipal Department to the Sanitary Engineer and scrutinized and returned to them with this office No. 512-G., dated 20th June 1919.

With the total of the estimates modified by the Chief Engineer to Rs. 37,500, the proposals were since received back with the Sanitary Board Proceedings No. 444-S., dated 4th October 1919, for the Sanitary Engineer's sanction, this being within his powers under recent orders, and sanctioned in this office No. 1656-M., dated 14th October 1919.

(9) *Drainage of the new Engineering College premises at Guindy*.—Estimated cost Rs. 75,000.

Plans and estimates were forwarded with this office No. 165-G., dated 21st February 1919, to the Chief Engineer for sanction. The scheme provides for the discharge of the sullage from the several buildings connected with the College by means of pipe connexions into a stoneware pipe main sewer of a total length of 3,380 feet and of 6 inches diameter for the first 300 feet from the College Principal's quarters with gradient of 1 in 135, and of 9 inches diameter for the remaining 3,080 feet with a gradient of 1 in 230, branch sewers from flush latrines, pumping pits, etc., the contents of the main sewer being discharged through a screening chamber and over a V-notch or gauging weir into two pumping pits whence the sewage will be pumped by automatic electric driven centrifugal pumps into four masonry septic tanks of a total capacity of 13,780 gallons equal to about half the daily flow, and thence led on partly to a sewage farm and partly to a bacterial filter; and the effluent from the latter will be conveyed by a closed drain to the deep bed of a tank at Adyar.

(10) *The new Engineering College water-supply at Guindy*.—Detailed plans and estimates amounting to Rs. 1,10,000 were submitted with this office No. 815-G., dated 4th October 1919, to the Chief Engineer for sanction.

The scheme is designed to supply 25,000 gallons per diem of potable water from an infiltration well of 10 feet diameter built to a depth of 28 feet below ground level at an estimated cost of Rs. 4,415 at the site of a disused but tested well in the compound of the Teachers' College, Saidapet, from which the water will be pumped by means of a steam pumping plant costing Rs. 3,200 annually for maintenance or by electric pumping plant costing Rs. 3,739 for similar maintenance, and conveyed by a 5-inch cast iron gravitation main 3,114 feet long passing

in its course across the Adyar river-bed to the College site where it will be supplied by a distribution system of 5" to 2½" cast iron pipes, sluice valves, scour valves, hydrants and fountains.

(11) *Salem water-supply improvements*.—An estimate of Rs. 20,000 for widening the supply channel to the Panamarathupatti tank was forwarded to Government in this office No. 513-G., dated 27th June 1919, approved by the Chief Engineer in his Memo. No. 5862-C., dated 10th September 1919, and accorded professional sanction in this office No. 1577 M., dated 30th September 1919.

7. *Schemes for which plans and estimates were prepared and are under scrutiny with the Sanitary Engineer or were returned to the Deputy Sanitary Engineers for revision*.—Plans and estimates submitted by the Deputy Sanitary Engineers for the following schemes were under scrutiny in this office or returned to the Deputy Sanitary Engineers for revision during the year:—

	Approximately estimated cost of the scheme.
	RS.
(1) Bezwada drainage	5,56,000
(2) Berhampur drainage (partial)	1,70,000
(3) Tiruvannamalai water-supply	4,00,000
(4) Bimilipatam drainage (returned for revision)	37,200
(5) Calicut drainage	12,00,000
(6) Kodaikanal water-works extension	40,000

(This scheme has since had to be dropped in favour of an alternative proposal preferred by the Municipal Council.)

8. *Schemes for which plans and estimates were under preparation*.—Plans and estimates for the following schemes were under preparation during the year:—

	Approximately estimated cost of the scheme.
	RS.
(1) Gudur water-supply	2,35,000
(2) Ellore drainage	8,10,000
(3) Madras Lunatic Asylum drainage	...
(4) Rajahmundry water-supply	1,50,000
(5) Erode drainage	...
(6) Mannargudi water-supply	...
(7) Srirangam water-supply	...

(Separate scheme, i.e., as distinguished from a combined scheme of supply for Trichinopoly and Srirangam.)

(8) *Berhampur drainage* ... (Completion of the plans and estimates was temporarily suspended under G.O. No. 2158 M., dated 22nd November 1919).

9. *Schemes for which investigation was completed, but the preparation of plans and estimates is to be taken up by the Deputy Sanitary Engineers*.—The following are the schemes for which investigation was completed, but preparation of plans and estimates was to be taken up in due course:—

- (1) Kumbakonam drainage.
- (2) Tenali drainage.
- (3) Guntur drainage.
- (4) Nandyal drainage.
- (5) Bellary drainage.
- (6) Chidambaram drainage.
- (7) Mannargudi water supply.
- (8) Palghat water-supply.
- (9) Cochin drainage.
- (10) Periyakulam drainage.
- (11) Tinnevely drainage.
- (12) Chittoor drainage.
- (13) Pollachi water-supply.
- (14) Palni water-supply.
- (15) Dindigul water-supply improvements.
- (16) Tiruppur water-supply.
- (17) Mangalore water-supply (from the Hassanar valley).
- (18) Calicut water-supply.

(Quality and quantity tests of the Ellattur river water, the proposed source.)

10. *Schemes which are under investigation by the Deputy Sanitary Engineers.*—The investigation of the following schemes was in progress during the year :—

(1) *Cochin water-supply—Deep boring.*—The sample water from the layer at 359 feet below ground level having been considered unsatisfactory, the boring pipe was lifted up, and with its bottom at about 320 feet the water was pronounced potable and the yield found to be at about 35 gallons a minute, working the borehole on the "Cavity" principle. It is now being tested with a 40 feet length of 7" Ashford Patent Strainer.

(2) *Tiruvaiyur water-supply—Deep boring.*—The boring with a 5" pipe, when it reached a depth of 214 feet below ground level struck a bed of fine sand and silt after passing through a thick layer of stiff clay. As it was difficult to sink the 5" pipe any further, a 4" pipe inside the former was sunk to 227 feet below ground and the lining pipes pressed down to 219 feet. Further work was suspended pending sanction to a revised estimate for the investigation.

(3) *Srivilliputtur water-supply.*—Investigation was in progress.

(4) *Alagarkoil water-supply.*—(for an important place of pilgrimage in Madura district)—Investigation was in progress.

(5) *Peddapuram water-supply.*—Investigation almost completed.

(6) *Parlakimedi water-supply.*—An experimental well sunk.

(7) *Hindupur water-supply.*—(from the Penner river source).

(8) *Penukonda water-supply.*—Investigation completed.

(9) *Tiruvannāmalai water-supply—Kalyani well scheme.*

(10) *Gudur water-supply.*—Investigation since completed—vide item (3) under paragraph 5 above.

(11) *Dharmavaram water-supply extension.*

(12) *Bellary water-supply full power test.*—Vide item (4) under paragraph 5 above.

(13) *Kalahasti water-supply.*—Investigation sanctioned in G.O. No. 391 L., dated 22nd March 1919, was in progress.

(14) *Tiruchanur water-supply.*—Investigation sanctioned in G.O. No. 391 L., dated 22nd March 1919, was in progress.

(15) *Tirupati drainage.*—(Investigation sanctioned in G.O. No. 775 M. Mis., dated 14th May 1919, was in progress.)

(16) *Chittoor water-supply.*

(17) *Cuddapah drainage.*

(18) *Guntur water-supply improvements.*—Vide item (5) under paragraph 5 above.

11. *Works for which preliminary reports were received from the Deputy Sanitary Engineers and were under scrutiny in the Sanitary Engineer's office.*—Preliminary reports on the following works were received from the Deputy Sanitary Engineers and were under scrutiny during the year :—

(1) *Dindigul Dobykhana water-supply.*

(2) *Septic tank in the Coimbatore Hospital.*

(3) *Septic tank in the American Mission High School, Pasumalai, Madura district.*

(4) *Disposal of night soil in the Madura city.*

(5) *Removal of the nuisance arising from sewage stagnation in the General Hospital, Madras.*

(6) *Working of the Lethal Chamber at Madura.*

12. *Minor Sanitary Works.*—Of 292 estimates for minor sanitary works received by the Sanitary Engineer from local bodies, etc., during the year, 25 estimates aggregating Rs. 19,961 were accorded sanction by the Deputy Sanitary Engineers themselves under the powers vested in them by G.O. No. 641 W., dated 20th March 1914; 206 estimates, each not exceeding Rs. 50,000 and aggregating Rs. 17,37,801 were sanctioned by the Sanitary Engineer to Government under G.O. No. 808 L., dated 27th June 1919, and seven estimates aggregating Rs. 2,58,800, were with the Sanitary Engineer's remarks and recommendations after scrutiny forwarded to the Sanitary Board for sanction. Please see Appendix A for a

statement of estimates for minor sanitary works dealt with by the Sanitary Engineer during the year (exclusive of those mentioned above as having been sanctioned by the Deputy Sanitary Engineers).

13. *Type designs.*—The following three designs were drawn up and forwarded to the Sanitary Board for approval and issue to local bodies for being adopted as type designs :—

(1) Design for engine driver's quarters.

(2) Alternative design for a flush-out latrine.

(3) Design for a rat-proof granary for storing grains.

14. *Improvements to the Municipal water-works pumping plant carried out during the year under the supervision of the Boiler Inspection Department :—*

(1) The following Municipal water-works machinery were for increased efficiency in their working, dismantled and put in repair by, or under the supervision of, the Chief Inspector of Boilers :—

(i) *Bezwada.*—Engines and pumps Nos. 1 and 2.

(ii) *Cocanada.*—Nos. 1 and 3 engines and pumps.

(iii) *Dindigul.*—No. 2 engine and pump.

(iv) *Masulipatam.*—A portion of the Jewell filters, the Sisson engine of the scour well pump of the coagulating tanks, and the donkey feed pump of the subsidiary pumping station.

(v) *Nellore.*—No. 2 engine of the main pumping station and No. 2 engine of the subsidiary pumping station.

(vi) *Trichinopoly.*—No. 4 engine and pump of the main pumping station and No. 1 engine and pump of the subsidiary pumping station.

(2) Arrangements were made to replace the crank shaft of the Blackstone Oil engine at the Kurnool water-works pumping station and the feed pump of the subsidiary pumping station of the Masulipatam water-works.

(3) New chimneys were made in replacement of the old corroded ones in the Tanjore and Trichinopoly (main) pumping stations.

(4) The pumping plant of the newly opened water-works in the municipal town of Erode was tested by the Chief Inspector of Boilers and handed over to the Municipal Council. Owing to the failure of the suction pipe during heavy floods in the river, a temporary arrangement was made to pump water from a sump close to the river bank, and arrangements for a permanent auxiliary suction to prevent possible failure of water-supply in the future were in contemplation.

(5) No. 4 engine and pump of the Tanjore water-works pumping station were removed from their foundations and a new base made of girders and plates was manufactured to secure them thereto.

(6) *Madura water-works pumping plant.*—(i) The machinery required for the pumping station of the Madura water-works at Kochadai was made ready for the erection of the plant thereat.

(ii) The Municipal fire engine, Madura, was installed at the foot of the south approach to the Vaigai bridge to pump into the sump well and the 10th Municipal ward during the day and to relieve the main pumps from night pumping.

(7) Among the improvements to the Conjeeveram water-works pumping plant, which were in progress during the year, was an alteration of the suction gas producer so as to burn charcoal instead of Anthracite coal.

15. A statement giving the results of the working of the pumping plant in the several municipalities is attached hereto as Appendix B.

16. *Engine drivers' examination.*—Two examinations were held during the year under report, one in July and the other in December. Forty-nine candidates appeared for the examinations in "Competency" and 27 in "Service"; of these, 32 in all were successful, viz., 16 in "Competency" and 16 in "Service".

17. *Water-works fitters' examination.*—Only one examination was held during the year in September. Of the eight candidates who appeared for it, one was successful.

18. *Water boring class.*—Local Fund Overseers and Sub-Overseers were as usual given instructions in the carrying out of the boring operations for water, and the class for training candidates was held from 17th July to 4th August 1919.

19. *Minor Sanitary Engineering Class.*—This class was held as usual in the office of the Sanitary Engineer to Government from July to December and 56 candidates attended the class.

20. *Experimental filters at Guindy.*—The experiments on filtration of water continued to be conducted under the guidance of the Committee appointed by Government in G.O. No. 1042 W., dated 21st May 1914, consisting of the Surgeon-General with the Government of Madras as President, the Sanitary Commissioner, the Director of the King Institute and the Sanitary Engineer as members, the working of the plant being carried out by the Sanitary Engineer's Department and the analyses of water samples by the staff of the King Institute, Guindy.

The details of the experiments are being reported in the annual report of the King Institute.

The training of officers in charge of Municipal water works sanctioned in G.O. No. 604 M., dated 11th April 1918, was continued and the Municipal Overseers of Berhampur and Adōni received instructions. Owing, however, to alterations and additions required to be carried out for the installation, these courses of instruction had to be stopped in the latter part of the year and will be resumed shortly in course of the year 1920 on more satisfactory lines as it has since been proposed to run the experimental plant mainly for instructional purposes.

21. *Sanitary Engineer's staff.*—Mr. J. M. Lacey departed on long leave to England and Mr. R. F. Stoney assumed charge of the office of Sanitary Engineer to Government on the forenoon of the 10th April. M.R.Ry. Rao Sahib P. S. Krishnaswami Ayyar Avargal, Sub-Engineer, in recognition of whose long and meritorious service in the office, the Government conferred on him the title of Rao Sahib during the year, continued to be the Sanitary Engineer's Personal Assistant.

Mr. J. R. Thurai Singham continued to be Deputy Sanitary Engineer, Southern and Western Circles, and M.R.Ry. K. Narayana Ayyangar Avargal, Sub-Engineer, was in charge of both circles, Southern and Western.

The office of the Deputy Sanitary Engineer, Northern and Central Circles, continued to be in charge of M.R.Ry. Rao Sahib V. S. Gnanaprakasam Pillai Avargal till 23rd January 1919 when he went on leave and Mr. J. Mathai held charge of the office until the 12th April when Mr. F. A. Adlard returned from military duty and assumed charge. The charge of Assistant Sanitary Engineer, Northern Circle, was held by Mr. T. S. Randhawa until 10th March, by M.R.Ry. Rao Sahib P. S. Krishnaswami Ayyar Avargal from 11th March to 12th April when Mr. F. A. Adlard relieved him, by M.R.Ry. Rao Sahib V. S. Gnanaprakasam Pillai Avargal from 23rd April when he returned from leave till 8th May when he had again to proceed on medical leave, by Mr. T. S. Randhawa again from 9th May to 11th June, by Mr. J. Mathai from 12th June to 9th August, and by M.R.Ry. Rao Sahib V. S. Gnanaprakasam Pillai Avargal from 10th August to the beginning of December when the last mentioned officer proceeded again on medical leave.

The charge of Assistant Sanitary Engineer, Central Circle, was held by Mr. J. Mathai until 11th April, by Mr. T. S. Randhawa from 12th April till 9th August when this officer was transferred to a Provincial Assistant Engineership of the Punjab Public Works Department, and by Mr. J. Mathai for the rest of the year.

From the above it will be seen that not only the work of four Assistant Sanitary Engineers' Circles had to be done by three Assistant Sanitary Engineers under pressure, but even this was subject to frequent disturbance from unforeseen causes rendering the reappointment of a Fourth Assistant all the more necessary.

22. *Boiler inspecting staff.*—Mr. G. L. W. O'Brian continued to be Chief Inspector of Boilers and the work of the four Inspectors under him had to be done by only three, viz., Messrs. J. G. Baskett, S. A. Davis and N. V. McLean in consequence of the lamentable death of the acting Second Inspector of Boilers Mr. C. F. W. O'Brian. Owing to Mr. Davis's resignation by the end of October and the dearth of competent hands to fill the vacancies, the department was very under staffed and overworked.

OFFICE OF THE SANITARY ENGINEER
TO GOVERNMENT, CHEPAUK,
MADRAS, 16th April 1920.

R. F. STONEY,
Acting Sanitary Engineer to Government.

APPENDIX A.

Statement showing the number and aggregate estimated cost of the minor sanitary works sanctioned or recommended for sanction by the Sanitary Engineer to Government, Madras during the year 1919.

Particulars.	Medical institutions.		Slaughter-houses.		Markets.		Wells.		Water-supply.		Drainage.		Lutrine.		Miscellaneous.	
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.
Estimates of Rs. 2,500 and under.	7	Rs. 9,230	2	Rs. 2,800	10	Rs. 9,562	4	Rs. 6,570	19	Rs. 16,295	10	Rs. 15,325	16	Rs. 19,605	19	Rs. 2,33,460
Estimates of above Rs. 2,500 and up to Rs. 50,000.	52	8,41,665	...	...	7	1,10,615	3	12,235	23	2,48,318	6	46,395	6	52,256	27	2,46,770
Estimates of above Rs. 50,000.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21,30,500
Total	59	8,50,895	2	2,800	17	1,20,177	7	18,805	42	2,59,613	16	61,720	22	71,861	46	6,10,730

Grand total 213. Works estimated to cost Rs. 19,96,601.

APPENDIX B.

Statement of results of pumping at water-works possessing pumping plant 1918-19.

Stations	Gallons of water pumped.	Average lift in feet.	Total consumption of fuel.	Description of fuel.	Pounds of fuel consumed per 1,000 gallons.	Cost per million gallons raised 1 foot high.	Pounds of fuel consumed per pump horse-power per hour.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Bezwada ...	224,518,217	77.3	TONS. CWT. LB.	Liquid fuel ...	LB.	RS. A. P.	LB.	Diesel oil engines with belt driven geared Worthington triplex deep well pumps.
Chidambaram ...	199,301,103	74.26	31 18 16	Do. ...	0.318	0 8 1.8	0.81	Hathorn Davy horizontal compound surface condensing engines and pumps.
Cocanada ...	37,414,260	70.09	117 10 52	Coal and wood.	7.08	0 7 2.11	19.87	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Conjeevaram ...	144,245,100	48.48	278 11 0	Do.	4.32	1 1 7.8	17.6	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Kumbakonam ...	141,425,010	48.88	238 18 110	Charcoal, coal and wood.	3.78	1 0 1.99	15.23	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Kurnool ...	221,021,900	48.97	402 9 48	Do.	4.07	1 1 2 0.1	16.8	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Madura ...	232,020,579	46.4	352 17 11	Kerosene-oil.	3.51	1 0 7.36	15.13	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Negapatam ...	4,619,621	32.9	1 9 3.25	Do.	.703	6 12 3.4	5.96	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Nellore (main) ...	3,142,872	30.96	1 476.965	Do.	.913	9 2 7.2	5.96	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	119,130,340	45.6	275 7 42	Wood, liquid fuel and kerosene-oil.	5.18	2 3 11.9	22.53	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Trichinopoly (main) ...	107,862,828	45.5	436 5 74.04	Do. and wood.	12.14	2 3 10.17	52.85	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	592,822,932	44.5	500 7 28	Coal and wood.	2.33	0 15 8.7	9.92	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	559,723,073	44.53	604 17 0	Do.	2.45	0 14 5.77	10.89	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	129,686,946	163.23	853 17 13	Do.	6.11	0 11 9.3	7.41	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	159,739,846	65.82	31 5 20	Kerosene-oil.	0.44	0 9 6.7	1.31	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	6,728,574	32.13	2 7 89	Do. and wood.	0.79	4 3 8.8	4.89	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	738,270,817	111.69	1,602 14 28	Coal and wood.	4.86	0 10 4.6	8.62	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	786,879,636	105.45	1,499 2 62	Do.	4.26	0 9 8.72	7.98	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	58,818,800	63.04	111 19 98	Do.	4.68	1 7 10.2	14.71	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	59,011,553	62.24	162 12 45	Do.	5.5	1 7 3.3	16.01	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	134,770,227	209.458	503 15 104	Do.	8.87	0 9 5.4	7.91	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	103,860,399	209.41	398 2 46	Do.	8.54	0 8 1.55	8.28	Horizontal direct acting Worthington compound surface condensing engines and pumps.
Do. (sub) ...	12,108,500	184.14	8 7 73	Kerosene-oil and liquid fuel.	1.55	1 1 2.3	1.66	Horizontal direct acting Worthington compound surface condensing engines and pumps.

[Note.—The figures in thick type are the averages of the preceding five years.]

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THE
TWENTY-FOURTH ANNUAL REPORT
OF THE
SANITARY BOARD, MADRAS, FOR 1919.

From the Sanitary Engineer to Government, No. 363 G., dated 21st April 1920, forwarding his thirtieth annual report for the year 1919.
Endorsement thereon by the Chief Engineer, Public Works Department, No. 3148 C., dated 7th May 1920.

RESOLUTION :—

With reference to rule 23 of the rules regulating the constitution and functions of the Sanitary Board issued with G.O. No. 1500 L., dated 27th August 1914, the annual report of the Sanitary Engineer for the year 1919 will be submitted to Government together with the report of the Board itself as hereunder. The Sanitary Commissioner having expressed his inability to submit his report in time owing to the delay on the part of certain municipalities and district boards in the submission of their returns, the report of the Sanitary Commissioner will be forwarded separately as soon as it is received.

2. The Sanitary Board of this Presidency is vested with no executive control. Its functions are confined to advising local bodies and Government in regard to sanitary schemes before execution and to lay down and issue for guidance type plans and estimates.

3. The personnel of the Board during the year was as shown below :—

(i) Mr. W. Hutton, A.M.I.C.E., Chief Engineer and Joint Secretary to Government, Public Works Department, was the President of the Board.

(ii) Major-General G. G. Giffard, C.S.I., I.M.S., Surgeon-General with the Government of Madras, was the medical member except during the period from 12th February to 26th April 1919, when Lieut.-Col. W. J. Niblock, I.M.S., acted instead.

(iii) Mr. H. G. Stokes, C.I.E., I.C.S., Secretary to Government, Local and Municipal Department, was the civil member till the beginning of October 1919, and Messrs. L. A. Cammiade, B.A., B.L., A. F. G. Moscardi, I.C.S., and F. B. Evans, I.C.S., acted during the remaining period.

(iv) Mr. R. F. Stoney, Deputy Chief Engineer and Under Secretary to Government, Public Works Department, was the Secretary to the Board till the middle of April 1919, when Mr. S. Bhaskara Ayyar, B.A., succeeded him. Mr. C. Peddie acted as Secretary from 28th August to 9th October 1919 and from 13th November to 14th December 1919 when Mr. Bhaskara Ayyar was on other duty as Deputy Secretary to Government, Public Works Department.

4. The constitution of the Board continued to be the same, but its powers of final approval have been raised in G.O. No. 805 L., dated 27th June 1919, in respect of the maximum limit of the estimated cost of schemes from Rs. 20,000 to Rs. 50,000.

5. During the year the Board recommended to Government a revised programme of major sanitary schemes showing the order of urgency and it was approved in G.O. No. 2153 M., dated 22nd December 1919.

6. The undermentioned type designs were approved by the Board and circulated with schedules and specifications for adoption by local bodies:—

- (1) Flush latrine. (Type design No. 173.)
- (2) Engine drivers' quarters. (Type design No. 174.)
- (3) Rat proof grain godowns. (Type designs Nos. 175 and 176.)
- (4) Temporary post-mortem shed. (Type design No. 177.)

7. During the year the Board received 13 schemes estimated to cost Rupees 73,47,880, of which 9 schemes, estimated to cost Rs. 3,91,600, were finally examined by the Board. The remaining four schemes, estimated to cost Rs. 70,06,280, were, after preliminary examination, referred to the Chief Engineer, Public Works Department, for technical scrutiny which is since understood to have been almost completed; action is being taken towards getting them sanctioned at an early date. Out of the 13 schemes, 11 amounting to Rs. 73,36,780 relate to municipalities and 2, estimated to cost Rs. 61,000, relate to local boards.

8. The total number of schemes approved by the Board during the year was 7 estimated to cost Rs. 3,33,800 in the aggregate. Of these two schemes (1) construction of a market in connexion with the Butterworth road extension scheme at Trichinopoly and (2) the extension of water-supply to the southern parts of the Ootacamund Municipality were within the Board's power of final approval. It is reported that No. (1) could not be taken up for execution during the year for want of funds and that the required materials for No. (2) have been indented for from various firms.

9. The following five schemes were recommended to Government for sanction:—

	Estimated cost.
	RS.
(1) Repalli town extension scheme	36,300
(2) Sanitary improvements to the Pether channel at Chittoor ...	25,000
(3) Pattamangalam town extension in Mayavaram Municipality.	36,000
(4) Proddatur town extension scheme	61,000
(5) Ongole water-supply scheme	1,18,000

Of the above it is reported that scheme No. (2) has been completed and that the work on Nos. (1) and (3) was in progress at the close of the year.

SANITARY BOARD'S OFFICE, MADRAS,
31st May 1920.

S. BHASKARA AYYAR,
Secretary, Sanitary Board.

Government of Madras

LOCAL AND MUNICIPAL DEPARTMENT

G.O. No. 80 P.H., 26th January 1921

Report

Sanitation — for 1919—recorded with remarks.

READ—the following papers:—

I

Proceedings of the Sanitary Board, No. 262-S., dated 27th May 1920.

ABSTRACT.—Forwarding to the Government the thirtieth annual report of the Sanitary Engineer together with the twenty-fourth annual report of the Sanitary Board for 1919.

II

Proceedings of the Sanitary Board, No. 492-S., dated 18th October 1920.

ABSTRACT.—Forwarding to the Government the report of the Sanitary Commissioner for 1919.

Order—No. 80 P.H., dated 26th January 1921.

Recorded.

2. The report of the Sanitary Commissioner for 1919 was received by the Government more than five months after the due date. The delay is no doubt due largely to the congestion of work and depletion of personnel prevailing throughout the year 1920, but the utility of the report is gravely impaired by its late receipt, and the failure of certain local authorities to submit their returns punctually is unsatisfactory. The Collectors of Ganjam, Vizagapatam, Malabar, Tanjore, Chingleput and Nellore, the Presidents of District Boards of Godavari and Kurnool and the Chairmen of the Municipal Councils of Cuddalore, Bellary, Vaniyambadi and Kurnool are requested to see that their returns are in future compiled in time.

3. *Birth-rate.*—In every district the birth-rate is markedly below the quinquennial average. Comparative figures for the several districts are given in Annexure A to this order.

4. Defective registration is the cause customarily assigned for this decline and the fact that the birth-rate in many cases is exceeded by the death-rate supports this conjecture. No doubt the census of 1921 will provide data for determining the extent to which registration is at fault, but the Government consider that the Sanitary Commissioner should endeavour by intensive examination in selected areas in each district to arrive at some co-efficient of error, to ascertain why in some areas the birth-rate is twice that in others, and to decide to what extent, if at all, the statistical decline in birth-rate is real. The Board of Revenue has expressed the opinion that the registration of vital statistics is less

satisfactory in areas where it is compulsory than in areas to which compulsion has not been extended. The Sanitary Commissioner should be in a position to verify the accuracy of this view. The correct registration of births is of more than academical interest, as it should constitute the foundation of the policy of local bodies in regard to vaccination and maternity relief. The attention of all presidents of local boards and chairmen of municipal councils is drawn to the dubiousness of their birth-rate statistics, and the Government expect them to exercise particular vigilance in this branch of administration.

5. *Death-rate.*—Public health during 1919 was under all heads much better than in 1918. The death-rate in most districts was below the quinquennial average as will be seen from Annexure B to this order.

6. The Presidency average would have been more satisfactory but for the amazing increase in Malabar, South Kanara and Ganjam. No cause is assigned in the report for the heavy mortality in these areas and special steps should have been taken to ascertain whether remediable causes exist.

7. Another fact of widespread importance revealed by the mortality statistics is the very high rate prevailing generally among Muhammadans as compared with other communities. The Sanitary Commissioner is requested to examine closely the reasons for this high mortality.

8. *Infantile mortality* is a problem of growing public interest and one which local bodies could alleviate at relatively slight expense, if they would earnestly tackle it. The statistics compiled in the Sanitary Commissioner's office deserve publicity, in order that the local bodies responsible may know where they stand. (See Annexure C to this order.)

These statements do not reflect credit on local self-government. It is still well above the quinquennial average and incompatible with enlightened administration. It is of little use to recapitulate in general terms the cases assigned in the report for 1918. The Government require constructive proposals for bettering the conditions of infancy from each of the local bodies within whose jurisdiction the infant mortality exceeds the Presidency average.

9. In Madras City infant mortality fell from 360.7 in 1918 to 332.1 in 1919, but this is well above the quinquennial average of 302.1. Some improvement was effected under the Child Welfare Scheme undertaken by the Corporation towards the close of 1917. In the twelve months ending with September 30, 1919, 1,052 infants were tended under the scheme in the Triplicane centre, against 681 in the previous year. The mortality among the infants so tended worked out at 276.8. Work under the scheme is expanding, and additional centres were opened in Washermanpet and Purasawakam. It is clear that a much more comprehensive organization is necessary, if Madras City is to redeem its reputation as one of the deadliest towns in the Presidency.

10. *Cholera.*—The number of deaths from cholera fell from 122,263 in 1918 to 93,262 in 1919, but this figure is 34,323 in excess of the mortality of 1917. Useful work was done by the eight provincial cholera parties which operated in the worst affected districts. The Government await the Sanitary Commissioner's proposals for improving the working of these parties, but they cannot undertake to relieve local bodies of responsibility for this branch of public health administration, and they hope that no time will be lost in constituting Public Health Boards for each district with a view to co-ordinating and expanding the work of such statutory and voluntary agencies as exist or may be brought into being.

11. Cholera prevention is not, however, likely to be effective unless closer attention is paid than hitherto to the history of each epidemic with a view to determine the areas most susceptible to infection and the periodicity of the disease within each such area. The report is silent on this vital point, and until such data are collected and collated, the sanitary staff must blindly follow the epidemic instead of forestalling it. Such information is also needed before any programme worth having can be drawn up for the protection of drinking water in rural areas.

The Sanitary Commissioner and his deputies are requested to devote personal attention to this aspect of preventive work and to assist the local authorities in defining their policy so as to give protection where it is most needed.

12. *Water-supply.*—The provision of protected water-supply in municipal areas is regrettably backward. In the year under report no less than 45 out of 74 municipalities had no protected supply. Two installations were under construction, the investigation of three schemes was completed and that of twelve schemes was in progress. Unless means can be found for financing these schemes, it is unlikely that the present rate of progress can be accelerated.

It is gratifying to note that Municipal Councils are beginning to realize the importance of complying with the advice of the Sanitary Engineer and carrying out the measures suggested by him to remedy defects in these installations.

13. Cholera statistics for certain protected towns are not altogether reassuring.

Town.	Number of deaths.	Percentage to total number of deaths.	Rate per mille.	Town.	Number of deaths.	Percentage to total number of deaths.	Rate per mille.
Berhampur	86	6.5	2.7	Madura	95	1.9	0.7
Bezawada	42	2.0	1.3	Nagapatam	41	2.1	0.7
Cocanada	16	0.8	0.3	Nellore	73	1.9	2.2
Conjeevaram	177	7.8	2.9	Salem	256	12.0	4.3
Cuddapah	20	3.4	1.1	Tanjore	41	1.8	0.7
Dindigul	67	5.2	2.7	Tirupati	56	8.6	3.4
Gudiyattam	83	12.1	3.8	Trichinopoly	122	3.0	1.0
Kumbakonam	20	1.0	0.3	Vellore	88	7.2	1.8
Madras	630	2.4	1.3	Vizagapatam	64	4.2	1.5
				Vizianagram	11	0.8	0.3

The Government observe that in several instances cholera has attained the dimensions of an epidemic. No reason is assigned in the report for these outbreaks, nor is mention made of any steps being taken to track down the sources of infection or to guard against recurrence. It is unlikely that infection was caused by the pollution of the protected supply, but whether any effort was made to verify this, is not stated. Some towns, it is true, are only partially served with pipe water, but in such cases protection obviously requires extension. The remarks in paragraph 11 above regarding the history of cholera epidemics generally apply with greater force to municipalities with protected water-supply, and the Government hope that the officers of the Sanitary Department and the local authorities concerned will take to heart the suggestions there made. The action taken on these suggestions should be noted hereafter in the administration reports both of the Sanitary Commissioner and of the local bodies affected.

14. *Small-pox.*—Small-pox mortality declined from 58,752 to 41,732. The incidence of small-pox in particular localities is more variable than cholera, but is more easily preventable. The controlling factor, vaccination, is dealt with in another report (recorded in G.O. No. 81 P.H., dated 23th January 1921), but the salient points brought to light in that report may be briefly summarised here.

15. The statistics of vaccination do not appear to bear direct relation to small-pox mortality, a high vaccination rate being in some areas concurrent with a high death-rate from small-pox, and in others with a low death-rate, and *vice versa*. The reason for the concurrence of a high death-rate with a high vaccination rate, and of a low death-rate with a low vaccination rate is to be found in the Sanitary Commissioner's statement attributing the decline in vaccination "to the absence or less prevalence of small-pox." The Government cannot accept this explanation, and would impress on all local authorities their responsibility for rendering an epidemic impossible in the areas committed to their charge.

16. The policy of the Sanitary Department and of local bodies as regards revaccination is still nebulous. No information is given in either of the reports as to whether revaccination is insisted on, on admission into schools or into public

service, or whether any effort at all is made to educate public opinion as to the need for revaccination. The Government would also suggest that on the outbreak of an epidemic, systematic enquiries should be made in selected areas as to the number of protected persons who contract and succumb to the disease.

17. *Plague*.—Plague accounted for 5,645 deaths against 12,859 in 1918. The number of persons inoculated with anti-plague vaccine is not reported, nor is mention made of the steps taken to combat epidemics and guard against re-infection. The localities most exposed to infection are well known, as are also the sources of infection. It should be possible for the Sanitary Commissioner, in the light of experience accumulated since plague first appeared in this Presidency, to draw up a comprehensive programme of preventive measures. It should be possible to eliminate the dangerous features of known foci of infection, such as granaries and railway premises, by intensive rat destruction or by prohibiting the storage of grain in godowns which are not rat proof or which are situated in densely populated areas. Even methods of storing grain for household use deserve attention, and villagers should be encouraged to segregate arrivals from infected places as provided for by Regulation. The Sanitary Commissioner is requested to give attention to such measures, and to inform the Government of what is being or should be done.

18. *Other diseases*.—The incidence of fevers, dysentery and diarrhoea and respiratory diseases is less variable from year to year than that of epidemics, and the susceptibility of particular localities to one or more of these classes of ailment is readily ascertainable.

Comparative figures are shown in annexures D, E and F to this order.

19. The variations between the several districts are presumably due to definite and persistent causes, and, after allowing for such factors as faulty registration and local epidemics of influenza, it should be possible for the Sanitary Commissioner and his deputies to localise these causes, and to draw up a definite programme of intensive work in order to eradicate or counteract them. Unless sustained and systematic investigation is made, and until policy is based on ascertained fact, the public health of the Presidency is not likely to improve.

20. The record of "fevers" is notoriously vague. It should be possible by careful diagnosis in selected areas to determine for each district the approximate proportion which each variety of "fever" bears to the total mortality under this head, and to decide from the figures so obtained what special preventive action should be taken in each locality. It is only on such data that the activities of local health and welfare associations can be directed into the right channels and make good the defects peculiar to the localities in which they work. Malaria in particular is a disease which can only be eradicated by localising and removing the sources of infection, and "anti-malarial measures" which are not based on ascertained fact are bound to fail, however generously quinine is distributed.

21. The inflated figures under "other causes" is another unsatisfactory feature of the statistical record. In rural areas the rate under this head for 1919 is 9.7 and in town circles the figure is 15.0. It should be possible, by detailed investigation in selected centres, to dispel at least to some extent the mystery which obscures this "all absorbing head."

22. The deaths reported under rabies numbered 62, of which no less than 17 occurred in Trichinopoly district. It is not stated whether any of these cases were treated at the Pasteur Institute. The responsibility for sending those who are bitten to Coonoor rests primarily on the local authorities, and the Sanitary Commissioner is requested in future to institute enquiries as to the action taken in each case of death from this cause as soon as it is reported.

23. Conservancy is still defective. It is unsatisfactory to note that public latrine accommodation is insufficient in no less than 22 municipalities, including some of the most important towns in the Presidency, and that the number of insanitary latrines in use is large. Nearly two-thirds of the total number of houses in district municipalities are unprovided with private latrines, and the

prevailing methods of disposing of nightsoil and sullage are crude, wasteful and offensive. Sewage farms are maintained by 13 municipalities, but little interest is shown in their exploitation. The Government desire that the Sanitary Commissioner and his deputies should in future devote more attention to the economic disposal of the waste products of conservancy and assist local bodies in devising methods which are more profitable and more consistent with hygiene. The failure of local bodies to set aside a depreciation reserve for the renewal of conservancy plant is likely to land them in serious difficulties.

24. The report of the Sanitary Engineer shows good progress in the investigation of drainage schemes, and it is not his fault that only one scheme has been carried through. The Government hope that the general public will awaken to the importance of proper drainage and insist on an acceleration of the programme of works to be executed. Four type-designs have been approved by the Sanitary Board in the year under report. In future reports the Government require information as to the number of buildings and installations actually constructed on type-designs and a note on their success or failure.

25. The reluctance of professional men to accept service under municipal councils is a menace to the future of sanitation in this Presidency. Of the two appointments sanctioned for first-class health officers one is at present vacant, and of the 14 posts sanctioned for second-class health officers only three are filled. No candidates have appeared for training as health officers for the past three years. Even men qualified as sanitary inspectors avoid service under local bodies, if they can get other employment.

26. The year's report does not reveal any marked advance in policy or efficiency, but more could hardly be expected considering that in the first eight months of the year there were no less than five changes in the personnel of the Sanitary Commissionership, and that during the last four months the duties of the Sanitary Commissioner were discharged by the Surgeon-General himself in addition to his full-time duties as Surgeon-General. The Government are pleased to note that during the short term at his disposal Surgeon-General G. G. Giffard was able to carry out personal inspection in 17 of the most important centres of the Presidency.

(By order of the Government, Ministry of Local Self-Government)

F. J. RICHARDS,
Secretary to Government.

To the Surgeon-General (Medical.)
" the Surgeon-General (Sanitary.)
" the Sanitary Engineer.
" the Assistant Quartermaster-General (with C.L.).
" the Inspector-General of Police.
" the Inspector-General of Prisons.
" the Accountant-General.
" the Director of Public Instruction.
" all Collectors.
" all Chairmen, Municipal Councils.
" all Presidents, District Boards.
" the President, Corporation of Madras.
" the Revenue Department.
" the Public Works Department.
" the Publicity Officer.
" the Inspector of Municipalities.
Editors' Table.

Endorsement—No. 80-A P.H., dated 26th January 1921.

Copy to the Government of India, Department of Education.

(By order of the Government, Ministry of Local Self-Government)

F. J. RICHARDS,
Secretary to Government.

[Annexures.]

ANNEXURE A.

I. Districts—Birth-rate.

Serial No.	District.	Rate for year under report.	Rate for 5 years ending 1918.	Serial No.	District.	Rate for year under report.	Rate for 5 years ending 1918.
1	Nellore	15.8	24.9	14	Presidency average ...	25.5	31.7
2	South Arcot	19.2	27.4	15	Anantapur	25.6	32.4
3	Bellary	20.8	29.9	16	Coimbatore	26.5	30.7
4	Ganjām (excluding agency).	22.0	27.0	17	Salem	26.9	33.9
5	Rāmnaḍ	22.2	28.7	18	North Arcot	27.3	34.7
6	Cuddapah	22.3	28.1	19	Vizagapatam (excluding agency).	27.5	34.0
7	Kurnool	22.6	29.2	20	Kistna	27.7	32.9
8	Chittoor	23.5	31.6	21	Tinnevelly	28.0	33.2
9	Tanjore	24.3	28.4	22	Chingleput	28.8	38.5
10	Trichinopoly	24.3	29.3	23	Malabar	29.7	37.4
11	Godāvari (excluding agency).	25.2	32.3	24	Guntūr	30.7	37.8
12	Madura	25.4	29.1		South Kanara	31.7	37.5
13	The Nilgiris	25.5	30.7				

II. Municipalities—Birth-rate.

Serial No.	Municipality.	Rate in 1919.	Quin-quennial average.	Serial No.	Municipality.	Rate in 1919.	Quin-quennial average.
1	Peddāpuram	16.2	21.8	39	Tellicherry	32.0	35.0
2	Adōni	17.0	30.8	40	Cuddapah	32.4	31.1
3	Villupuram	18.9	21.5	41	Guntūr	32.4	41.1
4	Dharapuram	19.2	27.3	42	Tanjore	32.5	36.5
5	Vizagapatam	20.5	30.1	43	Māyavaram	32.5	33.2
6	Berhampur	21.5	30.1		Presidency average ...	32.5	36.5
7	Chicacole	21.6	30.2	44	Tuticorin	32.7	35.2
8	Nandyal	21.7	27.9	45	Palamcottah	33.6	33.2
9	Tiruppur	22.1	18.5	46	Srivilliputtūr	34.3	41.3
10	Srirangam	22.2	28.3	47	Masulipatam	34.8	32.8
11	Tiruvālar	22.3	27.8	48	Bellary	34.9	39.7
12	Tirupati	22.8	29.0	49	Vellore	34.9	42.1
13	Hospet	23.9	30.6	50	Palghat	35.0	41.3
14	Gudiyattam	24.2	28.5	51	Coonoor	35.0	35.9
15	Udamalpet	24.5	16.7	52	Coimbatore	35.2	41.4
16	Kumbakonam	24.5	28.6	53	Vizianagram	35.3	36.2
17	Nellore	25.5	31.1	54	Chingleput	36.1	41.9
18	Negapatam	26.1	27.7	55	Madura	36.2	38.7
19	Proddatūr	26.2	21.3	56	Cuddalore	36.2	36.9
20	Parlakimedi	26.5	35.6	57	Cochin	36.5	35.3
21	Cocanada	26.7	33.3	58	Madras	36.6	39.4
22	Bodināyakkannūr	27.2	28.3	59	Salem	37.0	43.8
23	Trichinopoly	27.2	30.1	60	Calicut	37.1	39.0
24	Anantapur	27.3	32.9	61	Walajapet	37.4	45.2
25	Rajahmundry	27.3	30.0	62	Conjeeveram	37.9	40.3
26	Tenali	28.0	29.5	63	Tinnevelly	38.4	41.7
27	Ongole	28.9	39.1	64	Virudupatti	38.5	31.3
28	Anakapalle	28.9	30.5	65	Ootacamund	38.7	38.2
29	Bimlipatam	28.9	31.7	66	Tirupattūr	39.0	58.4
30	Chidambaram	29.5	31.3	67	Chittoor	39.9	28.8
31	Narasaraopet	30.2	35.8	68	Bezwada	41.0	38.5
32	Kurnool	30.3	37.5	69	Ellore	41.3	47.5
33	Mannargudi	30.6	34.5	70	Tiruvannāmalai	42.8	44.3
34	Erode	30.7	33.5	71	Periyakulam	43.6	49.3
35	Karur	30.7	31.2	72	Palni	44.8	51.5
36	Mangalore	31.0	33.3	73	Dindigul	47.0	55.2
37	Cannanore	31.4	36.5	74	Kodaikānal	48.2	49.1
38	Vaniyambādi	31.8	35.3				

ANNEXURE B.

I. Districts—Death-rate.

Serial No.	District.	Rate for year under report.	Rate for 5 years ending 1918.	Serial No.	District.	Rate for year under report.	Rate for 5 years ending 1918.
1	Nellore	16.0	21.0	14	Tinnevelly	26.9	25.2
2	South Arcot	19.6	24.2	15	North Arcot	27.1	29.5
3	Anantapur	20.3	35.9		Presidency average ...	27.2	27.6
4	Rāmnaḍ	20.6	19.8	16	Salem	27.3	31.1
5	Cuddapah	21.2	30.0	17	Guntūr	27.5	30.0
6	Coimbatore	21.5	26.1	18	Vizagapatam (excluding agency).	29.0	28.9
7	Bellary	23.1	23.7	19	Godāvari (do.)	29.4	28.2
8	Madura	22.5	38.8	20	Chingleput	31.7	30.9
9	Kurnool	23.9	25.1	21	The Nilgiris	35.0	33.0
10	Trichinopoly	25.2	25.9	22	Ganjām (excluding agency).	36.5	20.8
11	Chittoor	25.2	29.2	23	South Kanara	36.8	25.2
12	Kistna	26.4	27.7	24	Malabar	42.2	25.5
13	Tanjore						

II. Municipalities—Death-rate.

Serial No.	Municipality.	Rate in 1919.	Quin-quennial average.	Serial No.	Municipality.	Rate in 1919.	Quin-quennial average.
1	Adōni	10.3	43.6	39	Walajapet	35.6	37.3
2	Bodināyakkannūr	13.8	23.0	40	Bellary	36.0	71.0
3	Villupuram	16.3	17.6	41	Salem	36.0	45.7
4	Bimlipatam	22.4	24.5	42	Palghat	36.4	34.1
5	Anantapur	23.2	38.7	43	Chidambaram	36.5	35.0
6	Tiruppur	23.8	22.0	44	Chingleput	37.2	36.2
7	Cuddalore	24.3	34.9	45	Māyavaram	37.2	37.6
8	Vellore	24.6	31.1	46	Tanjore	37.3	37.4
9	Tenali	24.7	30.7	47	Conjeeveram	37.4	40.1
10	Peddāpuram	25.3	23.6	48	Cannanore	37.4	29.2
11	Ellore	25.3	39.7	49	Tinnevelly	37.4	35.2
12	Vaniyambādi	25.8	37.3	50	Srirangam	37.4	34.4
13	Anakapalle	28.2	37.3	51	Nellore	37.5	41.1
14	Masulipatam	28.3	34.4	52	Madura	37.8	33.2
15	Kurnool	28.7	35.9	53	Virudupatti	38.0	28.6
16	Mannargudi	28.8	42.3	54	Cocanada	38.9	33.7
17	Hospet	30.3	38.0	55	Ongole	39.1	34.6
18	Tiruvālar	30.5	56.1	56	Periyakulam	39.3	35.2
19	Karur	30.9	34.1		Presidency average ...	39.3	37.8
20	Proddatūr	31.1	28.7	57	Mangalore	39.4	29.1
21	Gudiyattam	31.2	31.3	58	Tirupati	39.5	25.3
22	Kumbakonam	31.2	32.7	59	Tiruvannāmalai	39.9	46.5
23	Narasaraopet	31.9	24.8	60	Coonoor	40.0	34.9
24	Srivilliputtūr	32.0	29.7	61	Berhampur	41.9	29.0
25	Erode	32.6	38.3	62	Ootacamund	42.8	36.3
26	Cuddapah	32.6	35.5	63	Chittoor	43.2	28.8
27	Udamalpet	32.8	22.3	64	Parlakimedi	45.1	29.7
28	Kodaikānal	33.0	23.7	65	Coimbatore	45.4	51.8
29	Negapatam	33.2	32.2	66	Guntūr	45.8	44.3
30	Rajahmundry	33.3	32.5	67	Cochin	46.7	34.8
31	Trichinopoly	33.3	32.5	68	Dindigul	51.3	43.1
32	Nandyal	33.8	50.4	69	Tellicherry	52.6	35.5
33	Tuticorin	33.8	30.3	70	Madras	53.1	43.7
34	Palamcottah	34.5	31.1	71	Calicut	59.4	33.1
35	Chicacole	35.1	27.9	72	Bezwada	63.3	44.7
36	Vizianagram	35.1	35.0	73	Palni	64.3	46.0
37	Vizagapatam	35.8	35.3	74	Tirupattūr	81.6	67.2
38	Dhārāpuram	35.4	30.2				

ANNEXURE C.

I. Districts—Infantile mortality.

Serial No.	District.	Rate in 1919.	Average for 5 years ending 1918.	Difference between columns 4 and 3.	Serial No.	District.	Rate in 1919.	Average for 5 years ending 1918.	Difference between columns 4 and 3.
(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
1	Cuddapah ...	126.6	167.7	-41.1	13	Presidency average ...	192.9	198.0	-5.1
2	Nellore ...	146.6	203.8	-57.2	14	Trichinopoly ...	193.3	195.8	-2.5
3	Rāmnād ...	152.6	167.5	-14.9	15	Kistna ...	196.4	209.9	-13.5
4	Coimbatore ...	164.5	194.7	-30.2	16	North Arcot ...	198.1	188.3	+9.8
5	Kurnool ...	164.5	204.3	-39.8	17	Bellary ...	199.1	218.5	-19.4
6	Madura ...	168.6	175.2	-6.6	18	Tinnevely ...	199.2	201.0	-1.8
7	Anantapur ...	169.4	207.7	-38.3	19	Malabar ...	203.6	170.8	+32.8
8	Godāvari ...	174.6	178.4	-3.8	20	Guntūr ...	207.2	231.1	-23.9
9	Vizagapatam ...	175.9	179.5	-3.6	21	South Kanara ...	208.5	182.6	+25.9
10	South Arcot ...	179.0	209.9	-30.9	22	Ganjām ...	211.4	189.4	+22.0
11	Chittoor ...	181.0	172.4	+8.6	23	Tanjore ...	214.8	226.0	-11.2
12	Salem ...	188.3	214.8	-26.5	24	The Nilgiris ...	227.2	229.6	-2.4
						Chingleput ...	261.9	236.0	+25.9

II. Municipalities—Infantile mortality.

Serial No.	Municipality.	Rate in 1919.	Average for 5 years ending 1918.	Difference between columns 4 and 3.	Serial No.	Municipality.	Rate in 1919.	Average for 5 years ending 1918.	Difference between columns 4 and 3.
(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
1	Villupuram ...	75.2	...	...	39	Chicacole ...	222.8	198.5	+24.3
2	Adōni ...	104.3	241.1	-136.8	40	Palamcottah ...	225.3	227.5	-2.2
3	Peddāpuram ...	116.0	170.8	-54.8	41	Conjeeveram ...	225.6	268.4	-42.8
4	Anantapur ...	116.9	231.5	-114.6	42	Chittoor ...	229.7	220.6	+9.1
5	Rajahmundry ...	128.7	183.9	-55.2	43	Trichinopoly ...	230.9	251.0	-20.1
6	Bodinaṣakkanūr ...	133.2	145.8	-12.6	44	Narasaraopet ...	231.1	230.1	+1.0
7	Dhārāpuram ...	136.6	214.8	-78.2	45	Chingleput ...	233.3	229.3	+4.0
8	Vellore ...	141.9	180.4	-38.5	46	Nellore ...	233.8	229.5	+4.3
9	Nandyāl ...	153.0	221.1	-68.1	47	Tinnevely ...	233.9	229.5	+4.4
10	Cannanore ...	155.1	147.5	+7.6	48	Tiruvālūr ...	234.5	253.5	-19.0
11	Proddatur ...	162.2	191.4	-29.2	49	Dindigul ...	235.1	278.0	-42.9
12	Bimlipatam ...	167.3	167.1	+0.2	50	Tiruvannāmalai ...	239.6	258.8	-19.2
13	Cuddalore ...	169.8	288.1	-118.3	51	Karūr ...	239.9	220.3	+19.6
14	Cuddapah ...	173.3	200.4	-27.1	52	Tiruppur ...	240.4	206.9	+33.5
15	Vāniyambādi ...	177.5	176.6	+0.9	53	Kumbakonam ...	244.0	242.8	+1.2
16	Tellicherry ...	179.3	151.5	+27.8	54	Periyakulam ...	245.1	230.8	+14.3
17	Cochin ...	189.0	187.5	+1.5	55	Māyavaram ...	246.0	246.9	-0.9
18	Srivilliputtūr ...	189.6	183.7	+5.9		Presidency average ...	246.2	252.0	-5.8
19	Anakapalle ...	189.6	204.2	-14.6	56	Ootacamund ...	248.3	247.8	+0.5
20	Ellore ...	191.3	274.7	-83.4	57	Tanjore ...	248.9	273.2	-24.3
21	Gudiyāttam ...	192.9	204.9	-12.0	58	Bellary ...	249.2	319.3	-70.1
22	Hospet ...	194.3	297.4	-103.1	59	Madura ...	251.3	236.9	+14.4
23	Palghat ...	195.9	191.2	+4.7	60	Chidambaram ...	257.6	287.0	-29.4
24	Walajapet ...	198.4	246.9	-48.5	61	Cocanada ...	259.8	225.3	+34.5
25	Tenali ...	200.4	265.7	-65.3	62	Tirupati ...	263.2	241.8	+21.4
26	Salem ...	202.1	229.5	-27.4	63	Negapatam ...	264.5	267.6	-3.1
27	Coonoor ...	204.0	225.2	-21.2	64	Virudupatti ...	266.4	266.0	+0.4
28	Masulipatam ...	204.9	305.6	-100.7	65	Ongole ...	270.8	221.6	+49.2
29	Maunārgudi ...	204.9	238.4	-33.5	66	Srirangam ...	278.2	232.7	+45.5
30	Parlakimedi ...	209.4	220.8	-11.4	67	Coimbatore ...	280.1	323.6	-43.5
31	Mangalore ...	213.5	172.9	+40.6	68	Tirupattūr ...	281.9	221.4	+60.5
32	Kurnool ...	215.7	221.2	-5.5	69	Palni ...	282.1	261.6	+20.5
33	Vizianagram ...	216.8	248.2	-31.4	70	Berhampur ...	301.3	242.8	+58.5
34	Calicut ...	217.0	162.4	+54.6	71	Guntūr ...	308.1	390.4	-82.3
35	Tuticorin ...	219.3	227.2	-7.9	72	Madras ...	332.1	302.1	+30.0
36	Erode ...	220.3	223.5	-3.2	73	Vizagapatam ...	347.2	264.2	+83.0
37	Udamalpet ...	220.5	419.0	-198.5	74	Bezwada ...	374.6	357.8	+16.8
38	Kodaikānal ...	221.4	215.3	+6.1					

ANNEXURE D.

I. Districts—Incidence of Mortality from Fevers.

Serial No.	District.	Rate for five years ending 1918.	For 1919.	Serial No.	District.	Rate for five years ending 1918.	For 1919.
(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
1	Tanjore ...	4.9	5.1	14	Nellore ...	10.5	8.0
2	Tinnevely ...	5.0	6.9	15	Kistna ...	11.2	11.5
3	Madras ...	5.6	6.5	16	Anantapur ...	11.5	3.1
4	South Arcot ...	6.0	6.6	17	Salem ...	11.5	10.1
5	Coimbatore ...	6.3	4.1	18	The Nilgiris ...	12.1	13.0
6	Chingleput ...	6.5	5.5	19	Godāvari (excludes Agency) ...	13.1	16.7
7	Madura ...	6.9	5.7	20	Guntūr ...	14.7	13.1
8	North Arcot ...	7.1	5.0	21	Bellary ...	15.7	4.6
9	Rāmnād ...	7.2	8.8	22	Ganjām (excludes agency) ...	15.9	25.7
10	Trichinopoly ...	7.6	6.3	23	Cuddapah ...	17.5	10.5
11	Malabar ...	9.1	15.1	24	Vizagapatam (excludes Agency) ...	24.6	22.0
12	Chittoor ...	9.4	6.4	25	Kurnool ...	25.9	14.1
13	South Kanara ...	9.7	9.9		Presidency average ...	10.5	10.1

II. Municipalities—Incidence of Mortality from Fevers.

Serial No.	Municipality.	Rate in 1919.	Serial No.	Municipality.	Rate in 1919.
(1)	(2)	(3)	(1)	(2)	(3)
1	Vāniyambādi ...	0.2	39	Ellore ...	6.9
2	Coonoor ...	1.1	40	Gudiyāttam ...	6.9
3	Cuddalore ...	1.3		Presidency Average ...	6.9
4	Palni ...	1.6	41	Masulipatam ...	7.2
5	Conjeeveram ...	2.0	42	Mannārgudi ...	7.2
6	Cannanore ...	2.1	43	Vizagapatam ...	7.2
7	Bimlipatam ...	2.2	44	Karūr ...	7.5
8	Mangalore ...	2.4	45	Coimbatore ...	7.8
9	Tiruppur ...	2.6	46	Tellicherry ...	7.9
10	Dhārāpuram ...	2.6	47	Tinnevely ...	7.9
11	Trichinopoly ...	3.0	48	Calicut ...	8.0
12	Vellore ...	3.4	49	Srivilliputtūr ...	8.0
13	Adōni ...	3.5	50	Rajahmundry ...	8.5
14	Bodinaṣakkanūr ...	3.6	51	Palamcottah ...	8.5
15	Bellary ...	3.7	52	Kodaikānal ...	8.6
16	Chittoor ...	4.2	53	Peddāpuram ...	8.7
17	Dindigul ...	4.8	54	Periyakulam ...	8.8
18	Udamalpet ...	5.0	55	Tuticorin ...	8.8
19	Hospet ...	5.1	56	Proddatur ...	8.9
20	Chingleput ...	5.1	57	Kumbakonam ...	9.1
21	Cuddapah ...	5.1	58	Ootacamund ...	9.4
22	Cochin ...	5.1	59	Anakapalle ...	9.8
23	Chidambaram ...	5.1	60	Berhampur ...	10.1
24	Māyavaram ...	5.4	61	Palghat ...	10.4
25	Nellore ...	5.4	62	Vizianagram ...	10.8
26	Srirangam ...	5.5	63	Madura ...	10.9
27	Salem ...	6.0	64	Bezwada ...	11.1
28	Tiruvālūr ...	6.2	65	Guntūr ...	11.2
29	Tenali ...	6.2	66	Kurnool ...	11.5
30	Walajapet ...	6.2	67	Ongole ...	12.0
31	Tanjore ...	6.4	68	Tirupattūr ...	12.3
32	Anantapur ...	6.4	69	Cocanada ...	12.4
33	Madras ...	6.4	70	Virudupatti ...	12.8
34	Negapatam ...	6.5	71	Chicacole ...	13.1
35	Tirupati ...	6.5	72	Narasaraopet ...	15.6
36	Tiruvannāmalai ...	6.5	73	Parlakimedi ...	17.0
37	Villupuram ...	6.9	74	Nandyāl ...	17.0
38	Erode ...	6.9			

ANNEXURE E.

I. Districts—Incidence of Mortality from Dysentery and Diarrhoea.

Serial No.	District.	Rate for five years ending 1918.	For 1919.	Serial No.	District.	Rate for five years ending 1918.	For 1919.
1	Vizagapatam (excluding Agency).	0.7	0.8	15	South Arcot	1.5	1.4
2	Cuddapah	0.8	0.6	16	Chittoor	1.6	1.5
3	Kurnool	0.8	0.5	17	Kistna	1.7	0.7
4	Guntur	1.0	0.7	18	Bellary	2.1	1.3
5	Nellore	1.0	0.4	19	South Kanara	2.4	4.7
6	Rāmnād	1.0	0.8	20	Malabar	2.8	5.6
7	Ganjām (excluding Agency) ..	1.1	1.5	21	Chingleput	2.9	3.2
8	Anantapur	1.2	0.7	22	Coimbatore	3.0	2.5
9	Godāvari (excluding Agency).	1.2	0.9	23	North Arcot	3.1	2.4
10	Tanjore	1.2	1.0	24	The Nilgiris	5.7	5.0
11	Tinnevely	1.2	1.4	25	Madras	9.0	11.4
12	Trichinopoly	1.2	1.2				
13	Madura	1.4	1.4				
14	Salem	1.5	1.2				
					Presidency average ...	1.7	1.9

II. Municipalities—Incidence of Mortality from Dysentery and Diarrhoea.

Serial No.	Municipality.	Rate in 1919.	Serial No.	Municipality.	Rate in 1919.
1	Proddattur	0.3	39	Karur	3.6
2	Adoni	0.4	40	Bellary	3.7
3	Villupuram	0.8	41	Tuticorin	3.8
4	Rajahmundry	1.1	42	Dharapuram	3.9
5	Nandyal	1.1	43	Berhampur	3.9
6	Masulipatam	1.3	44	Peddapuram	4.0
7	Anantapur	1.4	45	Negapatam	4.1
8	Guntur	1.4	46	Conjeevaram	4.2
9	Kurnool	1.5	47	Bezwada	4.2
10	Bodināyakkānūr	1.5	48	Cannanore	4.6
11	Tiruppur	1.9	49	Hospet	4.8
12	Tenali	1.9	50	Walajapet	4.8
13	Ellore	1.9	51	Gudiyāttam	5.0
14	Chidambaram	2.0	52	Coimbatore	5.1
15	Vellore	2.2	53	Coonoor	5.2
16	Vūniyāmbādi	2.2	54	Virudupatti	5.4
17	Srivilliputtūr	2.2		Presidency average ...	5.4
18	Mannārgudi	2.2	55	Tanjore	5.7
19	Kumbakonam	2.3	56	Tellicherry	6.0
20	Ongole	2.4	57	Mangalore	6.1
21	Māyavaram	2.4	58	Chicacole	6.2
22	Narasaraopet	2.5	59	Erode	6.3
23	Kodakānal	2.8	60	Periyakulam	6.4
24	Nellore	2.8	61	Bimlipatam	6.4
25	Cuddalore	2.9	62	Calicut	6.5
26	Cocanada	3.0	63	Palni	7.0
27	Tiruvālūr	3.1	64	Tiruvannāmalai	7.1
28	Madura	3.1	65	Tirupattūr	7.1
29	Salem	3.1	66	Tirupati	7.4
30	Srirangam	3.1	67	Parlakimedi	8.1
31	Palghat	3.3	68	Palamcottah	8.9
32	Cuddapah	3.4	69	Dindigul	9.3
33	Ootacamund	3.4	70	Chingleput	9.5
34	Trichinopoly	3.4	71	Cochin	9.8
35	Tinnevely	3.5	72	Vizagapatam	10.0
36	Anakāpalle	3.5	73	Vizianagram	10.5
37	Chittoor	3.6	74	Madras	11.4
38	Udamalpet	3.6			

ANNEXURE F.

I. Districts—Incidence of Mortality from Respiratory diseases.

Serial No.	District.	Rate for five years ending 1918.	For 1919.	Serial No.	District.	Rate for five years ending 1918.	For 1919.
1	Ganjām (excluding Agency) ...	0.3	0.4	15	Kurnool	1.4	0.9
2	Nellore	0.4	0.4	16	Malabar	1.4	1.6
3	Vizagapatam (excluding Agency)	0.4	0.4	17	Chittoor	1.5	1.4
4	Tanjore	0.5	0.6	18	Coimbatore	1.5	1.5
5	Tinnevely	0.5	0.5	19	Godāvari (excluding Agency)...	1.6	1.8
6	Rāmnād	0.6	0.8	20	North Arcot	1.6	1.2
7	Trichinopoly	0.8	0.9	21	Bellary	1.7	1.1
8	South Arcot	0.8	0.7	22	Anantapur	2.3	1.3
9	Madura	0.9	0.6	23	Kistna	2.8	3.0
10	Salem	1.0	1.2	24	The Nilgiris	4.5	4.3
11	South Kanara	1.2	1.4	25	Madras	8.7	10.2
12	Chingleput	1.2	1.4				
13	Guntur	1.2	1.8		Presidency average ...	1.2	1.2
14	Cuddapah	1.4	0.8				

II. Municipalities—Incidence of Mortality from Respiratory diseases.

Serial No.	Municipality.	Rate in 1919.	Serial No.	Municipality.	Rate in 1919.
1	Anantapur	...	39	Madura	1.7
2	Adoni	...	40	Karur	1.7
3	Hospet	...	41	Kumbakonam	1.9
4	Chingleput	...	42	Vizianagram	1.9
5	Proddattur	...	43	Tuticorin	2.1
6	Chicacole	...	44	Erode	2.2
7	Ellore	...	45	Trichinopoly	2.3
8	Nandyal	...	46	Parlakimedi	2.4
9	Kodakānal	...	47	Kurnool	2.4
10	Palghat	...	48	Periyakulam	2.5
11	Nellore	...	49	Calicut	2.5
12	Māyavaram	...	50	Srivilliputtūr	3.0
13	Udamalpet	0.1	51	Cuddalore	3.0
14	Tiruppur	0.1	52	Tirupattūr	3.1
15	Tiruvannāmalai	0.1	53	Mangalore	3.1
16	Virudupatti	0.1	54	Berhampur	3.2
17	Villupuram	0.1	55	Palamcottah	3.3
18	Ongole	0.3	56	Cannanore	3.6
19	Palni	0.3	57	Tenali	3.7
20	Gudiyāttam	0.4	58	Tanjore	3.7
21	Rajahmundry	0.5		Presidency average ...	3.7
22	Guntur	0.5		Vizagapatam	3.8
23	Bodināyakkānūr	0.6	59	Cocanada	4.0
24	Dindigul	0.8	60	Vūniyāmbādi	4.6
25	Tiruvālūr	0.8	61	Narasaraopet	4.9
26	Peddapuram	1.0	62	Bellary	5.2
27	Salem	1.0	63	Cuddapah	5.3
28	Masulipatam	1.1	64	Chittoor	5.5
29	Negapatam	1.1	65	Bezwada	5.7
30	Bimlipatam	1.1	66	Srirangam	5.9
31	Anakāpalle	1.2	67	Tellicherry	6.3
32	Walajapet	1.3	68	Conjeevaram	6.8
33	Chidambaram	1.3	69	Coonoor	6.9
34	Mannārgudi	1.3	70	Tirupati	7.7
35	Tinnevely	1.3	71	Ootacamund	7.7
36	Dhārāpuram	1.4	72	Cochin	7.8
37	Coimbatore	1.5	73	Madras	10.2
38	Vellore	1.5	74		