



REPORT OF THE DIRECTOR OF PUBLIC
HEALTH, MADRAS, FOR 1938

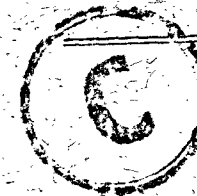
INCLUDING

ADMINISTRATION OF VACCINATION
IN 1938-39

AND

FORTY-NINTH ANNUAL REPORT OF THE
SANITARY ENGINEER TO GOVERNMENT,
1938

DIGITIZED



MADRAS

PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS

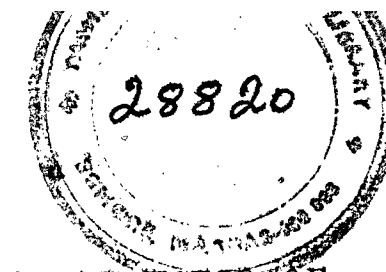
1939

R
: 15.2118N33
N39

7-882e

15.2.1938

N 29/1



ANNUAL REPORT OF THE DIRECTOR OF PUBLIC HEALTH, MADRAS, FOR 1938.

151

RAINFALL AND PRICES OF FOOD-GRAINS.

1. The averaged district rainfall during 1938 was 45.21 as against 49.25 inches in 1937. The seasonal distribution was as follows :—

	1938.	Average for the previous 5 years ending with 1937.	
		INCHES.	INCHES.
Inter-monsoon period—January to May	6.40	6.48	
South-west monsoon period—June to September	31.19	25.43	
North-east monsoon period—October to December	7.62	15.63	
Total	45.21	47.54	

As compared with the average rainfall for the previous five years, there was a marked decrease in the north-east monsoon, and a slight increase in the south-west monsoon. The districts of Vizagapatam, East Godavari (Plains), West Godavari, Kistna, Guntur, Anantapur, Bellary, Kurnool, Tinnevely, and South Kanara had more than the average rainfall. The highest rainfall of 160.03 inches was recorded in South Kanara district and the lowest of 20.53 inches in Coimbatore district. Due to the scanty rainfall in the Coimbatore district, famine conditions became evident in certain areas of the district by the end of the year.

2. The following statement shows the average prices of the principal food-grains :—

Grains.	Seers per rupee in			Average for the previous 10 years (seers per rupee).	Percentage of variation of prices in 1938 from 10 years' average.
	1938	1937	1936		
Rice (second sort)	10.3	10.3	10.5	9.2	-10.7
Ragi	17.8	15.7	16.3	15.5	-12.9
Cholam	15.7	15.3	16.1	14.9	-5.1
Jumbu	15.7	17.4	14.9	14.4	-8.3

The prices of rice and cholam have practically remained the same as in the previous year, while there was a small increase in the price of jumbu and a small decrease in that of ragi. The prices were, however, still less than the average for the previous ten years.

VITAL STATISTICS

GENERAL POPULATION.

3. The population of the Madras Province exclusive of the Indian States was 44,182,017 as per census of 1931. It has an area of 125,438 square miles and the average density of population is 353 per square mile. The estimated mid-year population in 1938, calculated on the assumption that the population has increased by geometrical progression at the same rate as in the previous intercensal period, is 47,461,550. The population estimated by the natural increase method (i.e., by adding the accruing excess of births over deaths and of immigration over emigration to the census population) is 48,088,052, and this differs from the population estimated by geometrical progression method by only 1.3 per cent.

As in the previous years, the vital statistics recorded in the Vizagapatam Agency have not been included in the report, in the absence of a proper system of registration of births and deaths in that area.

4. It was proposed by the Director of Public Health that the vital statistics of Europeans and Anglo-Indians should be included in the Provincial Administration Reports. As the Public Health Commissioner with the Government of India, and the Government of India have now agreed to this proposal, the figures this year relate to the whole population of the Province without excluding Europeans and Anglo-Indians. The population whose vital statistics are recorded in this report is, therefore, 43,985,197, of which 6,190,709 is urban (municipalities and rural towns), the remaining 37,794,488 rural.

MIGRATION OF POPULATION.

5. As emigration of unskilled labourers to Malaya was prohibited from June 1938, there was a large fall in the total number of emigrants from this Province during the year. The following table shows the number of emigrants during the last five years:—

Year.	Number of emigrants.	Year.	Number of emigrants.
1934	118,447	1937	106,514
1935	63,830	1938	51,472
1936	44,683		

The emigrants to Malaya were mainly drawn from the districts of North Arcot, Chingleput, South Arcot, Salem, and Malabar, while those to Ceylon were from the districts of Trichinopoly, Salem, Madura and Ramnad.

The number of immigrants who were either repatriated or assisted to return during the year was 89,100 from Malaya, Ceylon, South Africa, British Guiana, and Fiji. These figures relate to assisted migration of unskilled labourers only and not to other migrants who paid their own passages and for whom no statistics are available.

REGISTRATION OF BIRTHS AND DEATHS.

6. Registration of births and deaths is compulsory in all municipalities, while in rural areas it is compulsory only in those villages where the

Madras Registration of Births and Deaths Act (Act III of 1899) is in force. So far, the Act has been extended to about 39 per cent of the total number of villages in the Province.

With a view to improving birth and death registration, proposals have been made to the Board of Revenue to extend the Act III of 1899 throughout the Province except in certain backward tracts. If these proposals are accepted, registration of births and deaths will become compulsory practically in the whole Province.

7. The revised draft rules regarding the registration of births and deaths issued under the Madras Registration of Births and Death Act and the Madras District Municipalities Act were confirmed during the year. One special feature of the rules issued in respect of municipalities is that either the father, mother or the nearest adult relative is required to report the name of the child within two months from the date of registration of birth, if its name had not already been entered at the time of registration. For non-municipal areas such provision already exists under the Act III of 1899.

8. The village headmen are generally the birth and death registrars in villages whether the Madras Registration of Births and Deaths Act is in force or not. A special staff of trained Birth and Death Registrars are appointed for registering births and deaths occurring in municipalities and in a few panchayats. During the year, 23 candidates were trained in two batches, one under the Municipal Health Officer, Bezwada, and the other under the Municipal Health Officer, Vellore. The candidates who were trained at Bezwada were from Telugu and ceded districts and those trained at Vellore were from Tamil and West Coast districts.

9. In accordance with Section 6 of Act III of 1899, the name of the registrar with his designation written in the local language should be caused to be put up at some conspicuous place on or near the outer door of his office. Though the provision of such sign boards is a statutory requirement, it is not observed in many villages where the Act is in force. The provision of such sign boards serves a useful purpose and ought to be insisted on.

10. In order to improve the registration of births and deaths in rural areas the health staff are required, as a part of their routine duties, to investigate births and deaths in villages and to check the birth and death registers whenever they visit villages and all villages have to be visited at least once a year by the health staff. In addition to this, during the off-season when vaccination work is suspended for four months in the year, all Health Inspectors and Vaccinators are directed to do intensive investigation of vital statistics recorded in the villages. The health staff bring all cases of unregistered births and deaths detected by them to the notice of the registrars, get them registered and get the defects in the registers rectified. In the course of verification the health staff detected during the year 42,857 unregistered births and 12,319 unregistered deaths. Of these 30,612 births and 7,862 deaths were detected during the off-season alone. The largest number of such omissions was detected in the districts of South Arcot, Ramnad, Salem and Nellore. 13,927 cases of defaulters under the Act III of 1899 were reported to the

Revenue Authorities for action. The nature of the action taken against them is not fully known, but the need for such action as will serve to educate the public in their duties to register all births and deaths has to be emphasised if registration in the Province is to be improved.

COMPILATION OF VITAL STATISTICS.

11. The compilation of vital statistics recorded in the Province during each month as well as for the whole year is being done in the office of the Director of Public Health. For this purpose, the village headmen and the Executive Authorities of municipalities prepare monthly returns of births and deaths from the Birth and Death Registers relating to their villages and municipalities and forward them at the end of each month to the Director of Public Health. The returns from villages are posted in special posting registers and from these the figures for each rural town, taluk and district are consolidated each month. Similarly the figures for all the municipalities are separately compiled. The monthly consolidated vital statistical statements of districts exclusive of municipalities, municipalities, and rural towns with a population of 10,000 and above, are published in the *Fort St. George Gazette*. Every effort is made to obtain all the birth and death returns in time and to include them in the monthly and annual vital statistical statements. That this effort is crowned with almost cent per cent success may be seen from the fact that out of a total of about 420,000 monthly returns from villages due for the year, only 590 returns were not received in time for inclusion in this report. This number represents 0.11 per cent of the total number of returns due for the year and its omission is not likely to affect the rates materially. The returns in arrears were due mostly from the Tahsildars of Chandragiri taluk (Chittoor district), Dharmapuri taluk (Salem district), Amalapuram taluk (East Gōdāvari district), and Kaikalur taluk (Kistna district).

12. In order to ensure that registration of births and deaths in each rural town is complete, the birth and death rates of the rural towns for each month are examined. Whenever a rural town return shows low birth and death rates, the causes for such low rates are investigated with the aid of the Revenue Department and measures taken to rectify defects if any.

With a view to enabling the village headmen to prepare the monthly birth and death returns correctly and accurately, monthly reviews on the vital statistics recorded in each district are sent to the Collectors pointing out the defects noticed in the returns. This step has improved in a large measure the quality of the returns and has diminished the errors found in them.

GENERAL BIRTH AND DEATH RATES.

13. The need for calculating the birth and death-rates on the estimated mid-year intercensal population, instead of on the 1931 Census population, if the rates are to represent actual conditions, has been emphasised in previous reports. This is especially necessary as this Province has a fairly rapidly growing population as evidenced by the recorded excess of births over deaths. The extent to which the rates

calculated on the two populations differ from each other, will be seen from the following table:—

Year.	Mid-year estimated population for which vital statistics were recorded.	Number of births.	Birth-rate on basis of the estimated population.	Birth-rate on basis of census population.	Difference (column 4—col. 5.)	Number of deaths.	Death-rate on basis of estimated population.	Death-rate on basis of census population.	Difference (column 8—col. 9.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1931	45,322,074	1,606,403	35.4	35.5	-0.1	1,072,572	23.7	23.7	0.0
1932	45,763,500	1,627,381	35.6	36.0	-0.4	992,024	21.7	22.0	-0.3
1933	46,209,800	1,704,245	36.9	37.7	-0.8	1,068,923	23.1	23.7	-0.6
1934	46,659,269	1,633,996	35.0	36.2	-1.2	1,127,169	24.2	25.0	-0.8
1935	47,113,707	1,671,186	35.5	37.0	-1.5	1,124,336	23.9	24.9	-1.0
1936	46,543,720	1,659,625	35.7	37.8	-2.1	1,023,839	22.0	23.3	-1.3
1937	47,000,390	1,701,662	36.2	38.7	-2.5	1,054,430	22.4	24.0	-1.6
1938	47,461,550	1,709,545	36.0	38.9	-2.9	1,032,052	21.7	23.5	-1.8

* The decrease is due to the transfer of a portion of this province to Orissa.

The differences between the birth and death-rates as calculated on the census and estimated populations are shown in columns 6 and 10 respectively. The difference in the birth-rates increased from 0.1 in the census year to 2.9 in the year under report, and that in the death rates from 0 to 1.8. It is therefore clear that the birth and death rates calculated on the population of last census do not give an accurate idea of the actual occurrence of the vital statistical events. Hence the necessity for calculating the birth and death rates on the estimated population cannot be overemphasised. The rates calculated in this report are based on the census population except where otherwise stated.

14. The following statement gives the number of deaths registered during the past five years under the different causes of death:—

Cause of deaths.	Number of deaths registered in					Increase or decrease in 1938 as compared with 1937.
	1934.	1935.	1936.	1937.	1938.	
Cholera	18,153	35,456	34,117	23,307	10,252	-13,055
Dysentery and diarrhoea	97,844	96,181	84,313	84,276	74,064	-10,212
Smallpox	18,088	12,330	4,581	2,446	2,273	-173
Plague	2,358	645	615	1,127	1,155	+ 28
Revers	325,050	315,998	271,668	236,654	282,708	-3,986
Respiratory diseases	107,742	102,843	93,842	95,965	96,420	+ 514
Deaths from child birth	13,902	14,439	13,535	14,689	15,392	+ 803
Other causes	544,027	546,444	521,167	546,085	549,788	+3,703
Total	1,127,169	1,124,336	1,023,839	1,054,430	1,032,052	-22,378

There has been a small fall in the number of deaths registered during the year as compared with the previous year. As with an increasing population, there should be an increase in the number of deaths, even if the rate remained constant, the fall is greater than is apparent at first sight. The number of deaths due to the three infectious diseases of cholera, smallpox and plague has contributed only a relatively small percentage of 1.3 to the total deaths registered.

15. The salient features of the vital statistics recorded in the Province during the year are—

(1) The birth-rate during the year both as per census population (38.9) and as per estimated population (36.0) showed little change as compared with the rates (38.7 and 36.2 respectively) for the previous year.

(2) There was a slight fall in the death-rate from 24.0 to 23.5 per 1,000 of the census population, and from 22.4 to 21.7 per 1,000 of the estimated population.

(3) A further fall in the mortality from smallpox from 2,446 to 2,273 being the lowest recorded mortality for the past 71 years.

(4) A considerable fall in the mortality from cholera by about 56 per cent as compared with the previous year.

(5) A decrease in the number of deaths registered under "Dysentery and Diarrhoea" and "Fevers".

(6) Small increase in the mortality from plague, respiratory diseases and child birth.

BIRTHS.

16. The number of births registered during the year was 1,709,545 (873,709 boys and 835,836 girls), giving a birth-rate of 38.87 per 1,000 of population, as compared with 38.72 in 1937 and the average birth-rate of 37.47 during the previous five years. 251,032 births were recorded in urban areas (Municipalities and Rural Towns with a population of 5,000 and above) giving a birth-rate of 40.55 per 1,000 of population, while there were 1,458,513 births in rural areas, giving a birth-rate of 38.59.

The ratio of male births to female births in the Province was 105 : 100. The birth-rates among the different communities were as follows :—

Hindus	38.69	per 1,000 of population.
Muhammadans	40.64	"
Indian Christians	37.36	"
All communities	38.87	"

The highest birth-rate was recorded in the Muhammadan community.

The statement given in Annexure J shows the distribution of births during the months and the four quarters of the year.

As usual, the third quarter recorded the largest number of births.

17. The number of registered births and the birth-rate in each district of the Province are given in Statement I of Appendix I. Eight districts have recorded birth-rates over 40 per 1,000 of population, fourteen between 35 and 40, three between 30 and 35. Excluding Madras, the highest birth-rate of 46.93 was recorded in Kurnool district and the lowest (30.93) in Tanjore district. The other two districts which returned low birth rates were the Nilgiris (33.73) and South Arcot (34.01). The low birth-rate in these districts is perhaps due partly to defective registration. When compared with the previous year, the birth rates have increased in thirteen districts and decreased in twelve, the increase ranging from 0.23 in Cuddapah district to 3.42 in Nellore district and the decrease ranging from 0.34 in Trichinopoly district to 6.77 in West Godavari district.

18. The birth-rate was in excess of death-rate in all the districts, the maximum being 22.70 in North Arcot district and the minimum being 8.51 in Kistna district. The excess of birth-rate over death-rate in the Province was 15.41 as against 14.73 in the previous year.

19. 17,583 still-births (9,747 males and 7,836 females) were registered in districts exclusive of municipalities, giving a rate of 11.3 per 1,000 live-births. This rate is very low when compared with the rate of 47.7 per 1,000 live births in municipalities and indicates that many of the still-births escape registration in rural areas.

BIRTHS IN MUNICIPALITIES.

20. Statement VI of Appendix I gives the number of registered births and birth-rates in each of the municipalities in the Province. The number of births recorded in municipalities was 156,821 giving a birth-rate of 42.51 per 1,000 of population, as compared with 41.25 in the previous year. Forty-six municipalities registered birth-rates over 40 per 1,000 of population, thirty-five between 40 and 30 and two between 30 and 20. The two municipalities which returned low birth-rates were Palacole (26.85) and Cannanore (29.60). Palacole has recorded low birth-rates in the two previous years also and the low rate is probably due to defective registration.

The number of still births registered in the municipalities was 7,484 (4,111 males and 3,373 females), giving a rate of 47.73 per 1,000 live-births.

BIRTHS IN RURAL TOWNS.

21. As a part of Saint Thomas' Mount has been added to the Alandur Panchayat, the population of Saint Thomas' Mount has fallen below 5,000. It has therefore been removed from the list of rural towns with a population of 5,000 and above in the Province, the total number of such towns now being 240. The number of births registered in the rural towns was 94,211, giving a birth-rate of 37.65 per 1,000 of population as against 37.67 in 1937.

The following statement shows the distribution of birth-rates in the rural towns as compared with the previous year :—

Birth-rates.	Number of rural towns.	
	1937.	1938.
Over 40 per mille	89	90
Between 40 and 30 per mille	119	110
Between 30 and 20 per mille	31	38
Below 20 per mille	2	2
Total ...	241	240

The rural towns which recorded birth-rates less than 20 per mille were Pallathur (15.89) and Kottayur (19.83) in Ramnad district. The latter returned low birth-rate in the previous year also.

DEATHS.

22. The number of deaths registered during the year was 1,032,052 (524,065 males and 507,987 females), giving a death-rate of 23.46 per 1,000 of population, as compared with 1,054,430 deaths in 1937, giving a rate of 23.99 per 1,000 of population and the average rate of 24.16 for the period of five years ending with 1937. There were 165,334 recorded deaths in urban areas (municipalities and rural towns), giving a death-rate of 26.71 as against 27.21 in the previous year. 866,718 deaths were registered in rural areas giving a rate of 22.36 per 1,000 of population as against 23.46 in 1937. The proportion of male deaths to female deaths was 103 : 100.

23. The total number of recorded deaths and the death-rates in each district are furnished in Statement II of Appendix I. High death-rates were recorded in the districts of Kurnool (29·56), East Godavari Agency (28·33), and West Godavari (27·91). The lowest death-rate of 19·74 per mille was recorded in South Arcot district, the other districts which registered low rates were Malabar (20·12), Ramnad (20·31), Salem (20·57), and Chittoor and North Arcot (20·98 each). As compared with the previous year, the death-rate has increased in 9 districts and decreased in 16 districts, the increase ranging from 0·06 in Malabar district to 3·46 in East Godavari Agency and the decrease ranging from 0·01 in the Nilgiris district to 2·84 in Kistna district. The large increase in the death-rate in East Godavari Agency is due to prevalence of cholera and the increase in mortality from dysentery and diarrhoea.

24. The distribution of deaths during the four quarters of the year was as follows :—

				Number of deaths.	Percentage to total.
First quarter	..	..	..	242,526	23·50
Second quarter	..	..	..	234,442	22·72
Third quarter	..	..	..	279,435	27·08
Fourth quarter	..	..	..	275,649	26·70
Total	..	..	..	1,032,052	100·00

The highest mortality was recorded in the third quarter and the lowest in the second quarter.

The death-rates among the chief communities were as follows :—

						Death rate per 1,000 of population.
Hindus	..	..	..	..	..	23·72
Muhammadans	..	..	..	..	..	22·17
Indian-Christians	..	..	..	..	..	19·91
All communities	..	..	..	..	..	23·46

The highest death-rate was in the Hindu community.

DEATHS IN MUNICIPALITIES.

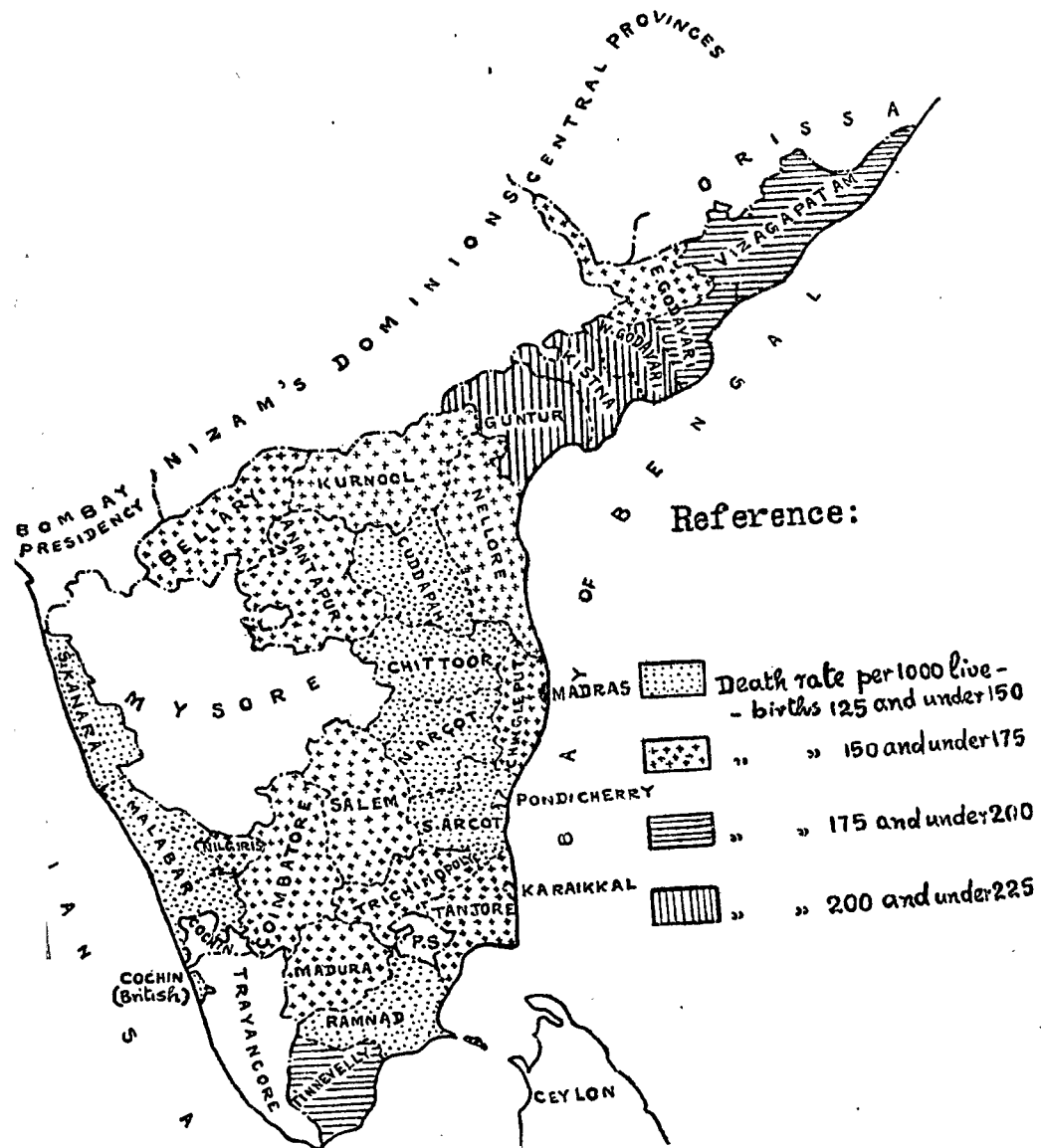
25. 108,173 deaths were registered in the municipalities during the year, giving a death-rate of 29·32 per 1,000 of population as against 29·51 in the previous year. The number of deaths recorded in each municipality and the death-rates are given in Statement VI of Appendix I. Two municipalities returned death-rate above 40 per mille, fifteen between 40 and 30, fifty-nine between 30 and 20 and seven between 20 and 15. The municipalities which recorded high death-rates were Nellore (40·67) and Madras (40·61). Low rates were recorded in Bodinayakanur (16·35), Sivakasi (16·83), Erode (17·22), Villupuram (17·69), Vaniyambadi (18·13), Chirala (19·79) and Peddapuram (19·78).

DEATHS IN RURAL TOWNS.

26. 57,161 deaths were registered in rural towns giving a mortality rate of 22·85 per 1,000 of population as against 23·82 in the previous

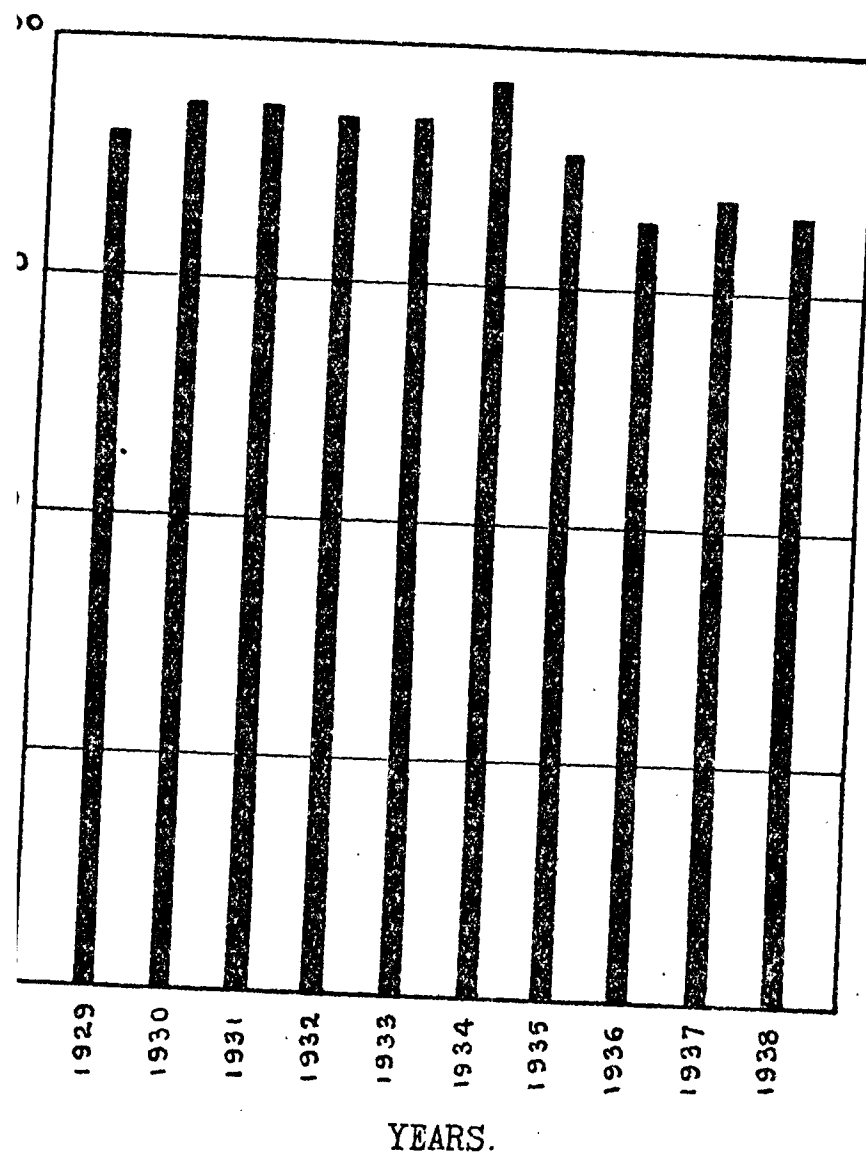
Map VII

MADRAS PROVINCE.
INFANTILE MORTALITY RATE PER 1000 LIVE BIRTHS.
1938.



Graph VII (a)

MADRAS PROVINCE.
Infantile Mortality Rate per 1000 Live-Births
During the years 1929 to 1938.



9

year. Nineteen towns recorded death-rates between 40 and 80 per mille, 163 between 30 and 20 per mille, 47 between 20 and 15 per mille, and eleven less than 15 per mille. The towns that returned low rates were Kandanur (10.99), Pallathur (11.69), Sendamangalam (12.53), Namakkal (12.57), Kovuru (12.66), Ilaiyangudi (12.70), Vriddhachalam (14.31), Kottaiyur (14.36), Panruti (14.77), Sivaganga (14.84), and Tirupattur (14.94).

AGE AND SEX DISTRIBUTION OF DEATH-RATES IN URBAN AND RURAL AREAS.

27. The distribution of deaths and death-rates as per age and sex in urban and rural areas is given in Statement IV of Appendix I. An abstract of the statement of death-rates per 1,000 of population is given in Annexure K. An examination of the Annexure shows the following salient features :—

(1) The death-rates for all age-groups in rural areas are less than the corresponding rates in urban areas except in the age groups "under 1 month" and "5 to 10 years". This shows that the environmental conditions in rural areas are generally more conducive to healthy life than in urban areas, but that the conditions in the neo-natal period are not favourable in rural areas.

(2) The death-rates of females during the age period 10 to 40 years are higher than those of males, while in the other age periods they are less. This perhaps reflects the greater risks women undergo during the childbearing periods of age.

(3) The mortality rate steadily decreases from a high death rate at infancy, reaches the minimum during the age period 10 to 15 years and gradually increases to a maximum at old age, thus showing a normal trend in the death-rates according to age.

The results of this analysis of age specific death rates in urban and in rural areas are in accord with the findings of previous years.

INFANTILE MORTALITY.

28. The number of infantile deaths registered during the year was 283,930 giving an infantile mortality rate of 166.04 per 1,000 live-births, as compared with 288,920 infantile deaths giving a rate of 169.70 in the previous year. The percentage of infantile deaths to total deaths in the Province was 27.5. Of the infantile deaths recorded, 55 per cent occurred within the first month of life. The infantile mortality rates for the age groups "under one month", "one to six months", and "six to twelve months" were 91, 39, and 36 per 1,000 live-births respectively.

29. The infantile mortality rates during the past ten years are given below :—

Year.	Infantile mortality rate.	Year.	Infantile mortality rate.
1929	179.5	1934	192.80
1930	185.7	1935	178.47
1931	186.6	1936	164.04
1932	182.9	1937	169.70
1933	184.9	1938	166.04

It will be seen from these figures that the infantile mortality rates during second half of the last decennium show a downward trend.

MATERNAL MORTALITY RATE.

30. 15,392 mothers died as a result of child-birth giving a mortality rate of 8·87 per 1,000 births (live and still) as against 8·46 in 1937. The slightly higher rate recorded during the year may be mainly due to the change in the definition of maternal deaths adopted towards the end of the previous year. As per the new definition all maternal deaths occurring during child-birth or within one month thereof, are classified as deaths due to child-birth, while in the previous years deaths of mothers during child-birth or within 14 days only, were classified as deaths due to child-birth.

GENERAL.

31. The vital index of the Province for the year, which expresses the ratio of birth-rate to death-rate as a percentage was 166 against 157 during the previous year. This again shows that the population of this Province is continuing to increase rapidly.

32. The following statement sets forth the vital statistics recorded in the different Provinces in India during the year. The figures vary widely from Province to Province, but in making such a comparative study the fact that the completeness and accuracy of registration and compilation of births and deaths also vary in different Provinces, should be kept in view.

Province.	Birth-rate.	Death-rate.	Survival rate (Birth-rate- Death-rate).	Number of male births to 100 female births.	Number of male deaths to 100 female deaths.	Infantile mortality rate.
Assam	29·92	22·42	7·50	107	106	164·67
Bengal	...	...	...	...	...	...
Bihar	...	...	...	...	...	...
Bombay	42·22	30·47	11·75	108	105	174·16
Central Provinces	43·19	41·07	2·12	106	108	238·20
N.W. Frontier Provinces	30·56	22·89	7·67	134	120	154·08
Orissa	...	...	...	...	...	...
Punjab	...	...	...	...	...	...
Sind	...	...	...	...	...	...
United Provinces	36·79	25·82	10·97	113	117	148·61
Madras	38·87	23·46	15·41	105	103	166·04

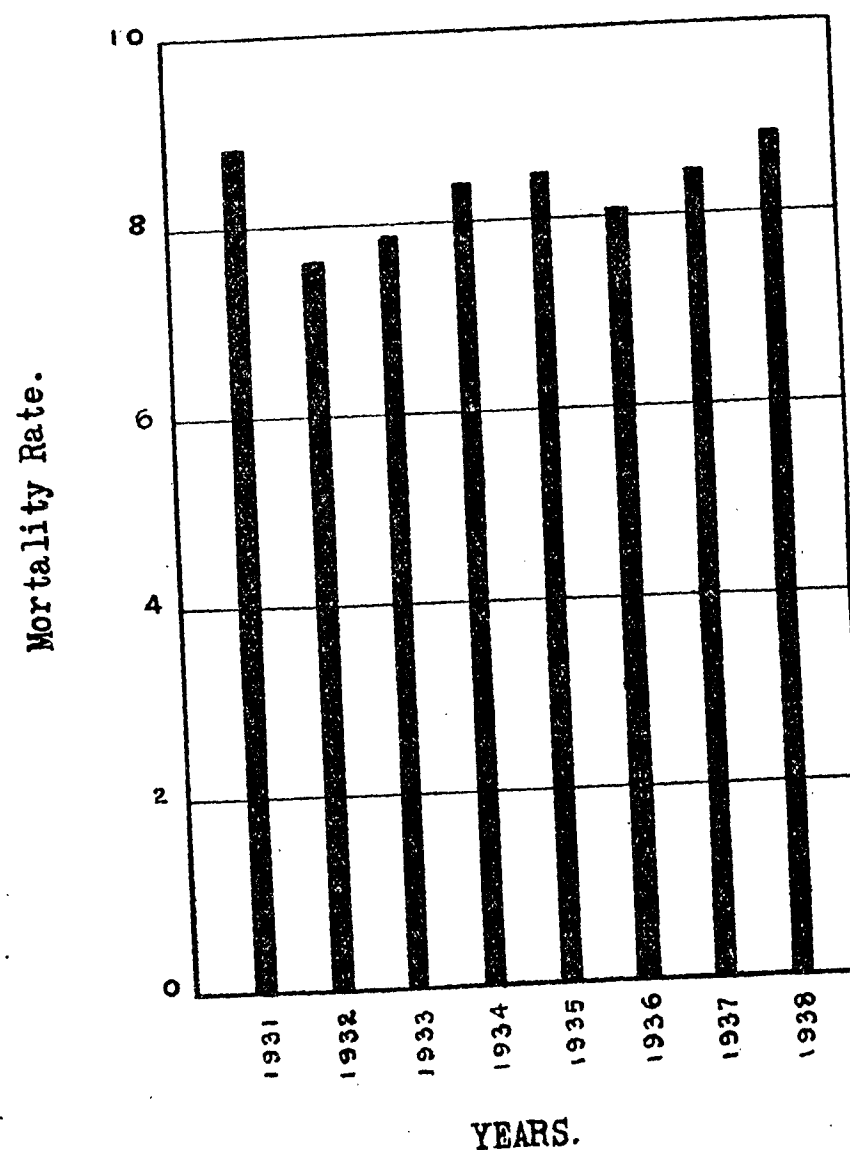
33. In the graph facing this page straight lines have been fitted by the method of least squares to the variations in the recorded birth and death rates since 1900. From the equations to the straight lines it is seen that since 1900 the recorded birth-rate has risen on the average by about 0·12 and the death-rate has fallen by about 0·06 per 1,000 per year. There has therefore been a steady increase in the population of the Province.

HISTORY OF THE CHIEF DISEASES AND THEIR EPIDEMIOLOGY.

34. One map and two graphs for each of the several important causes of death have been included in this chapter. The maps show the variations

Graph VIII (a)

MADRAS PROVINCE. Maternal Mortality Rate per 1000 Births During the years 1931 to 1938.



MADRAS PROVINCE.
MATERNAL MORTALITY RATE PER 1000 BIRTHS.
1938.

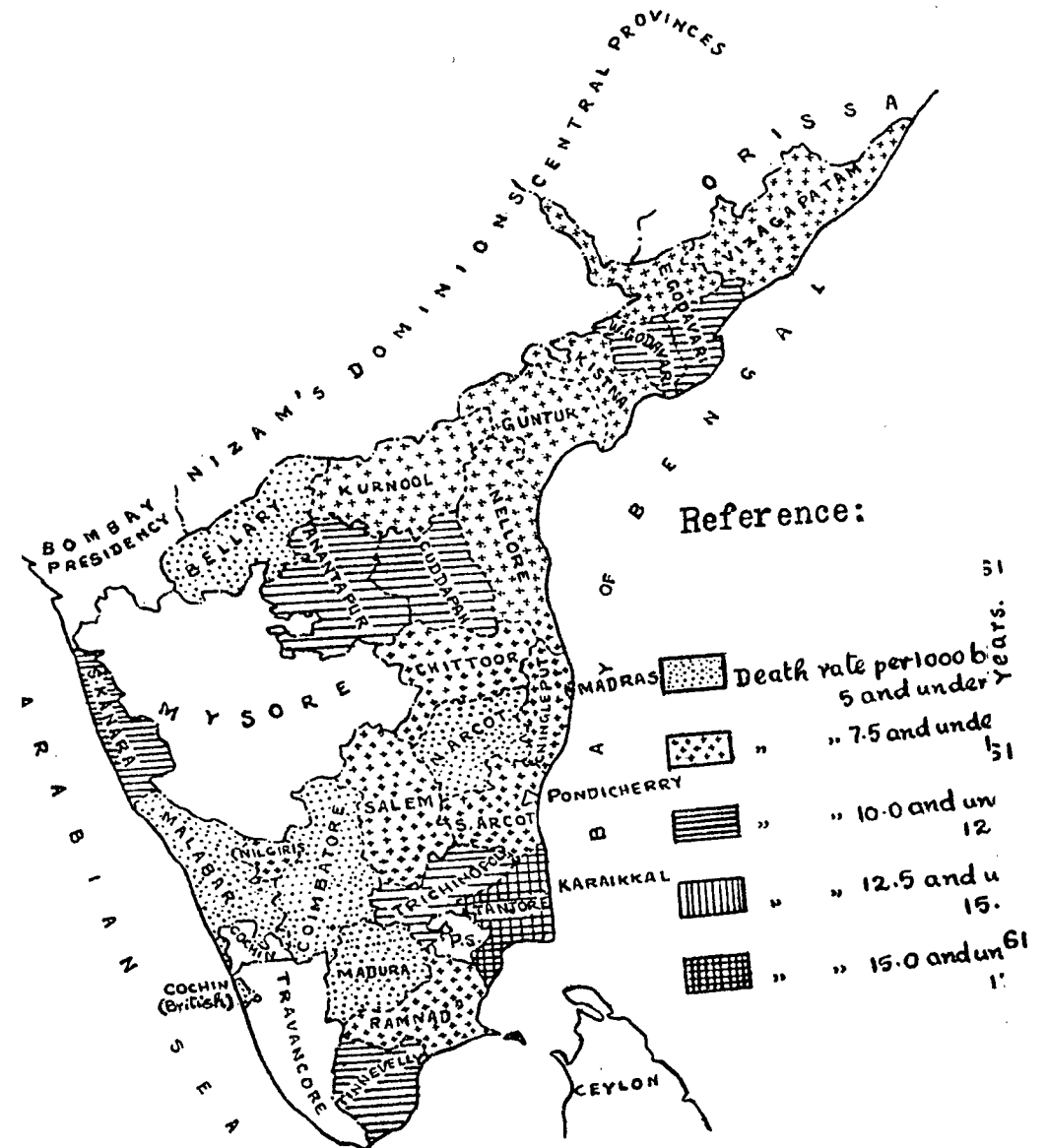
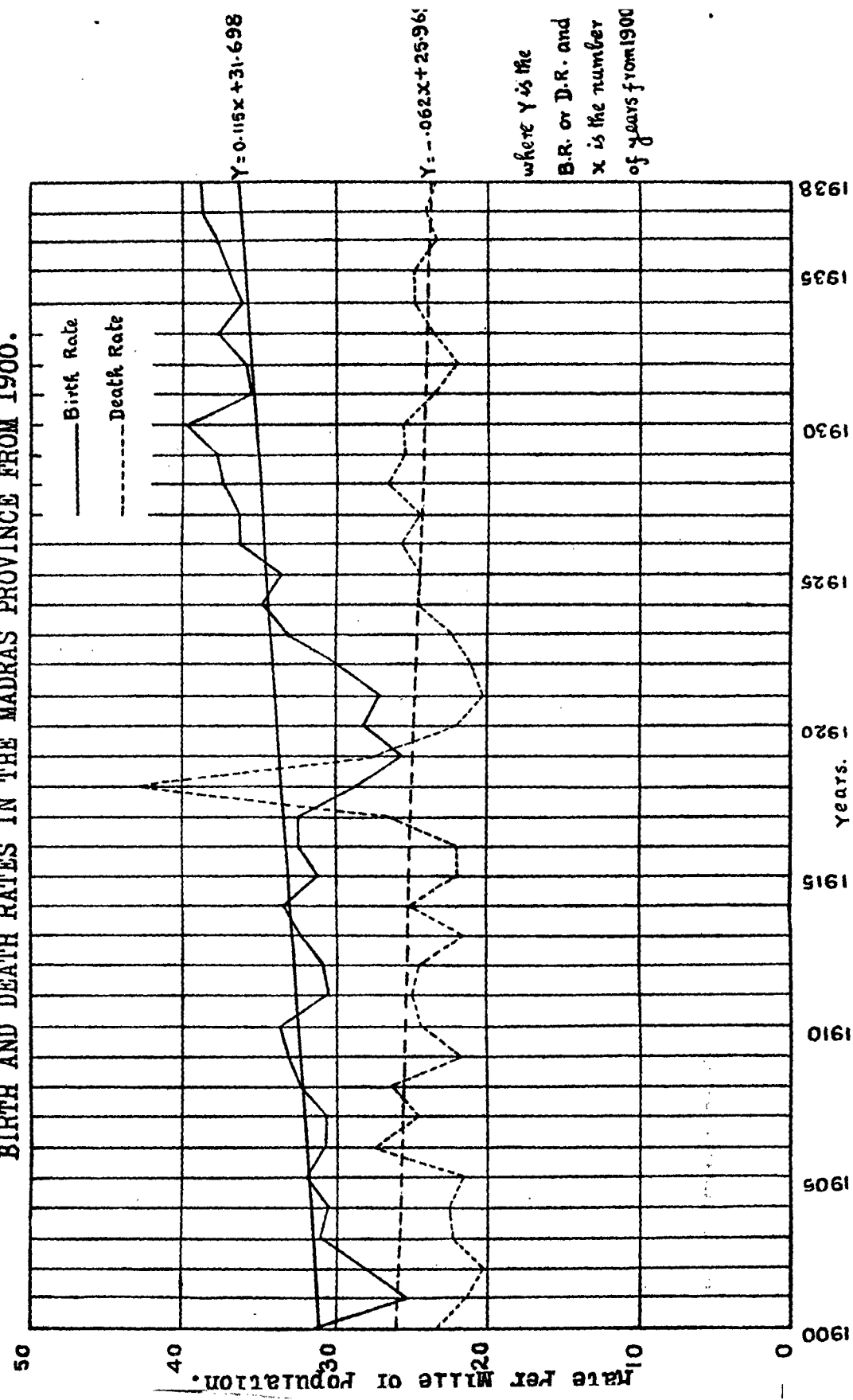
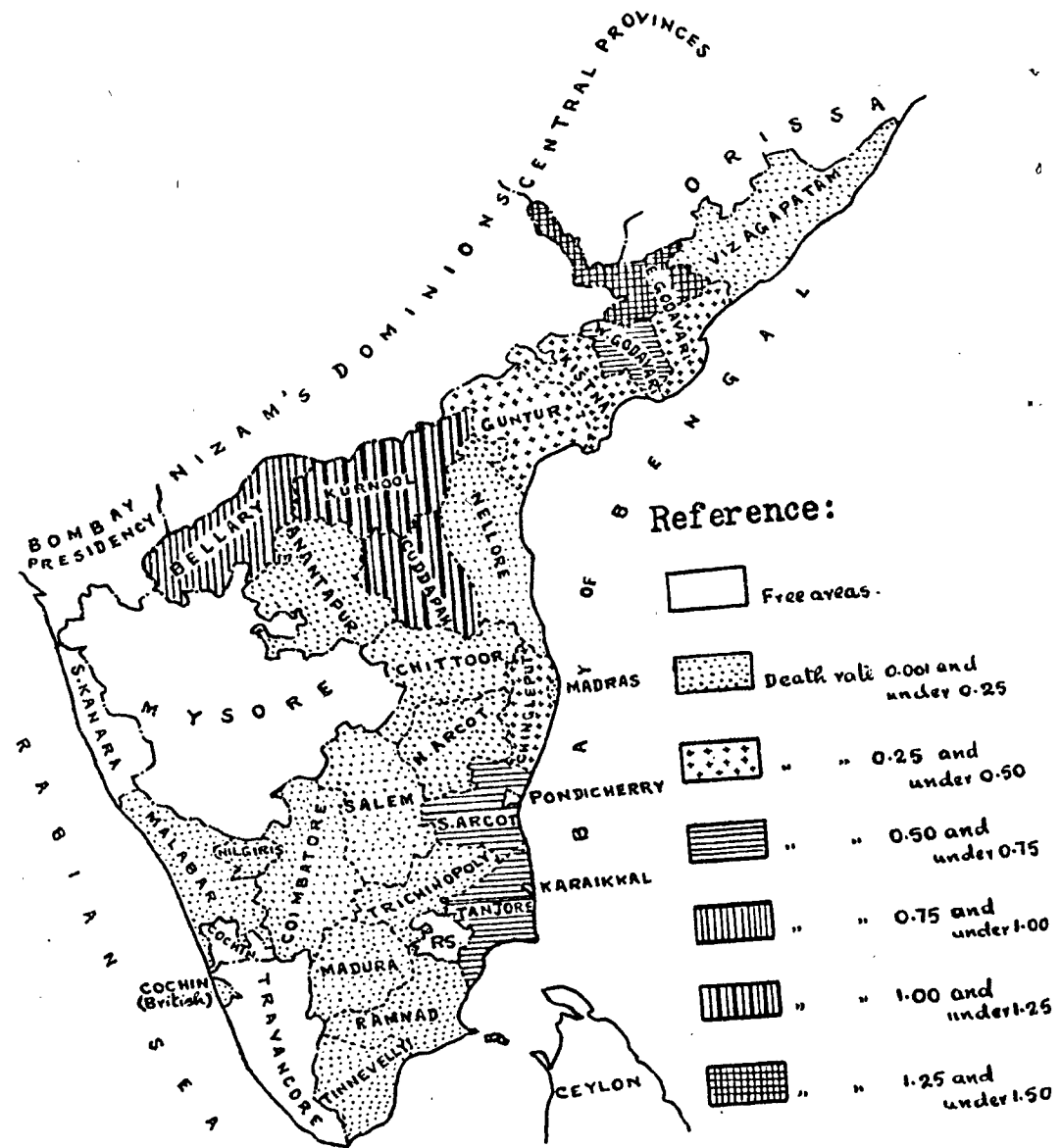


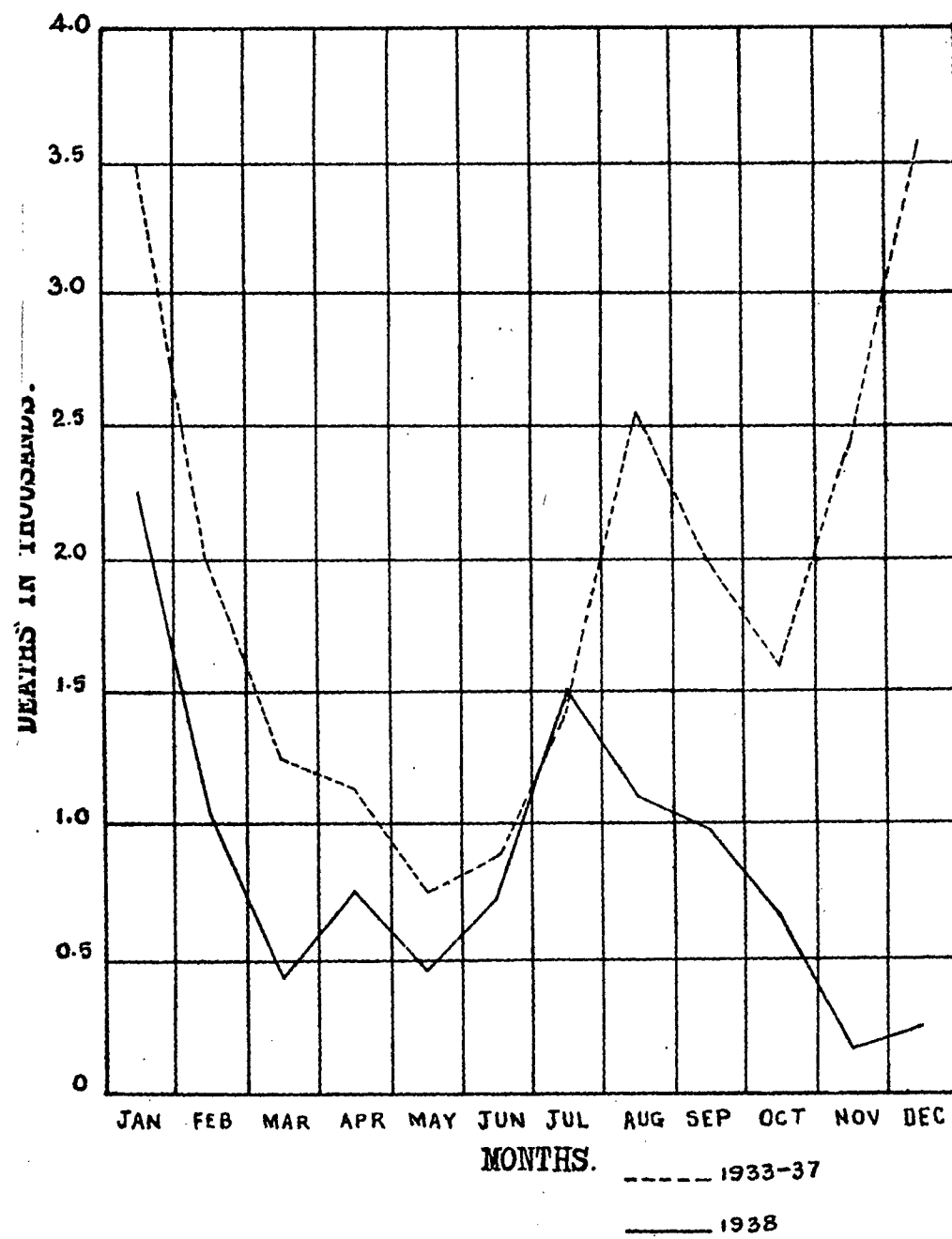
Chart No. I
BIRTH AND DEATH RATES IN THE MADRAS PROVINCE FROM 1900.



MADRAS PROVINCE.
MORTALITY FROM CHOLERA.
1938.

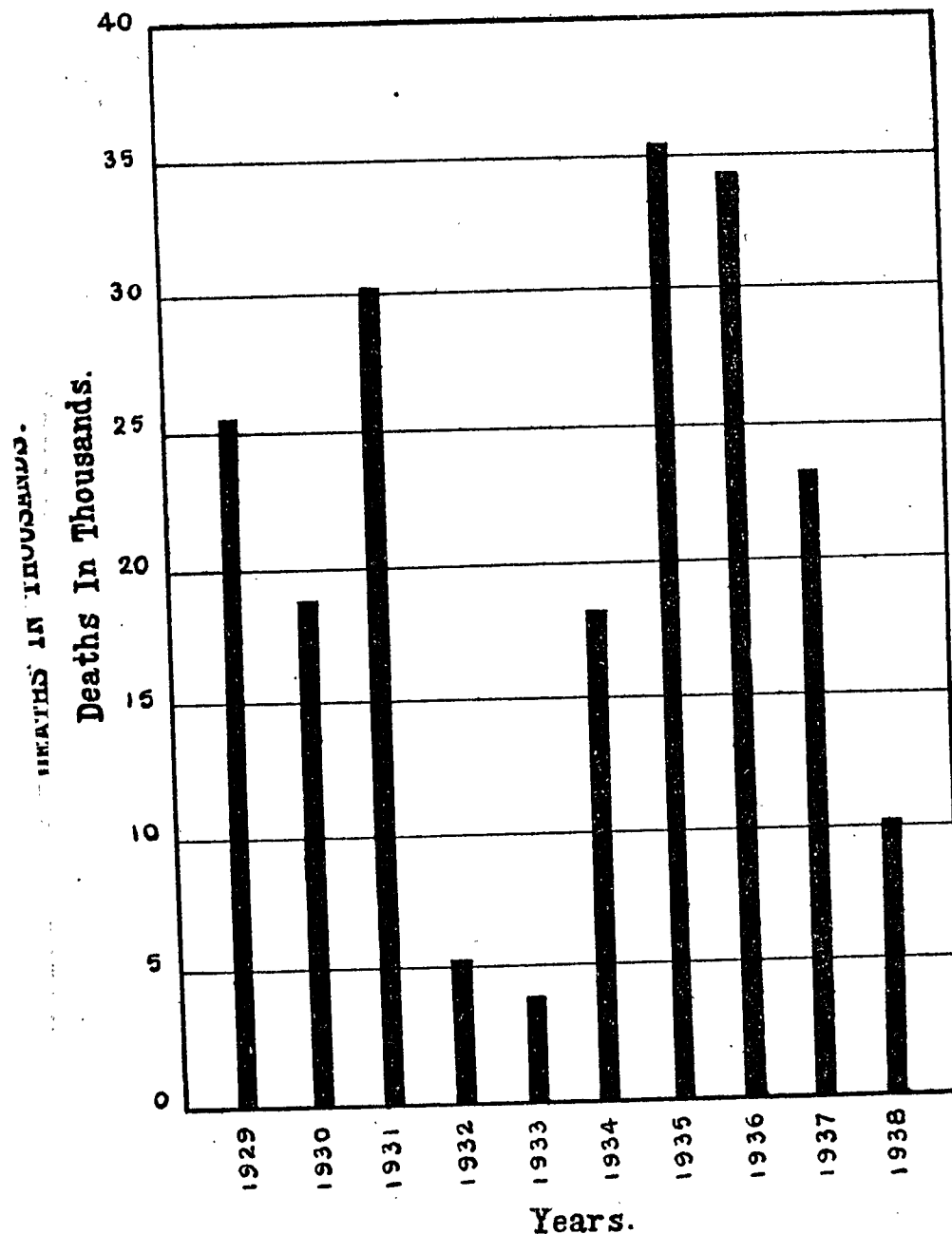


MADRAS PROVINCE.
MEAN MONTHLY DEATHS FROM CHOLERA IN 1933-37
AND MONTHLY DEATHS IN 1938.



Graph I(a)

MADRAS PROVINCE.
Deaths from Cholera during the years 1929 to 1938.



in the mortality rate from the several causes in the different districts of the Province during the year. The graphs show the annual mortality during the past ten years ending with 1938 as well as the monthly mortality during the year, as compared with the average monthly mortality of the previous five years.

CHOLERA.

35. The following statement shows the mortality from cholera in the province during the past ten years:—

Year.	Number of deaths from cholera.	Year.	Number of deaths from cholera.
1929	25,846	1934	18,158
1930	18,746	1935	35,456
1931	30,232	1936	34,117
1932	5,278	1937	23,307
1933	3,851	1938	10,252

It will be seen from the above table that the mortality, after having reached the peak in 1935, has gradually declined.

36. Forecasts of the probable trend in the prevalence of cholera were made periodically, to see whether there was any likelihood of an outbreak of the epidemic of cholera occurring during the ensuing months in any part of the province. During the year, with a view to keeping the public forewarned, Government published three forecasts in the Press. The actual occurrence or the absence of the epidemic, as the case may be during the ensuing periods for which these announcements were made, has shown that events had come to pass as predicted. These forecasts have been of immense value to the Public Health Department and to local bodies inasmuch as they were able to adopt the necessary preventive measures in advance in areas where the prevalence of cholera was anticipated and thereby to combat the outbreak and spread of the disease.

37. The mortality from cholera showed a further decline from 23,307 deaths in 1937 to 10,252 deaths in 1938. The death-rate from cholera has decreased from 0.53 per mille in 1937 to 0.23 per mille in 1938, the quinquennial average rate being 0.52 per mille. The mortality was highest in the first quarter and lowest in the last quarter. As in 1937, the winter epidemic in the southern and central districts was belated. South Kanara district was absolutely free and Nilgiris almost so, only a single death occurring during the year. Seven districts, viz., Madura, Ramnad, Tinnevely, North Arcot, Salem, Bellary and Malabar had a few sporadic cases but escaped an epidemic. In eight districts (Vizagapatam, Kistna, Nellore, Chingleput, Trichinopoly, Chittoor, Coimbatore and Anantapur), the epidemic was mild. The other seven districts (South Arcot, Tanjore, Kurnool, Cuddapah, East Godavari, Guntur and West Godavari) had severe epidemics. The mortality in these was 7,643 which is over 75 per cent of the total mortality from cholera in the Province.

Forty municipalities were affected during the year recording 367 deaths. This is the lowest mortality in municipal areas for over ten years. In urban areas, the health staff can act more promptly and with fuller facilities for prevention and control. Six municipalities contributed 50 per cent of the total urban mortality. They are Cuddalore (47),

Nandyal (38), Anantapur (32), Guntur (27), Rajahmundry (25) and Saidapet (21). Six others which accounted for another 25 per cent, are Bezvada (18), Kurnool (17), Gudivada (16), Palacole (14), Chidambaram (13) and Cuddapah (12).

38. The winter epidemic of 1937 continued in the first quarter of 1938 in a severe form in South Arcot and Tanjore districts, and in a milder extent in Chingleput, Cuddapah, Chittoor, Coimbatore, Nellore, and Trichinopoly. The epidemic soon subsided in these districts except Tanjore where it continued in a mild form practically throughout the year and Trichinopoly where it prevailed in the second quarter only. The pilgrims returning from Bhadrachalam festival set afoot a wave of cholera in the northern districts in the second quarter. Beginning in West and East Godavari, the epidemic soon spread to the adjoining districts of Kistna, Guntur, Kurnool and Vizagapatam, reaching its peak in the third quarter. East Godavari, Kurnool and Cuddapah suffered most. The infection subsided in the last quarter. The health staff exercised due diligence in the control of cholera. Additional staff was concentrated, prompt disinfection and attention to patients organized, rapid protection afforded by mass inoculation, and water supplies chlorinated and protected. Over 951,000 anti-cholera inoculations were done during the year.

39. It was noticed in many instances that the migration of coolies for transplantation and groundnut picking played a prominent part in the genesis and spread of cholera epidemics. This aspect was examined in the case of eight districts and a regular programme of preventive work to be done in anticipation of an outbreak has been drawn up. It will be tried in the ensuing season. The carrier problem was investigated in Madura under the direction of the Director, King Institute. The significant portion of the work awaits the next epidemic. The Municipal Council has since made the laboratory a permanent Public Health Laboratory, the first of its kind in the Province. With the programme of rural water-supplies, the training of all Rural Medical Practitioners in Public Health and the passing of the Public Health Act, the hands of the health staff have been greatly strengthened in the control of cholera epidemics.

SMALLPOX.

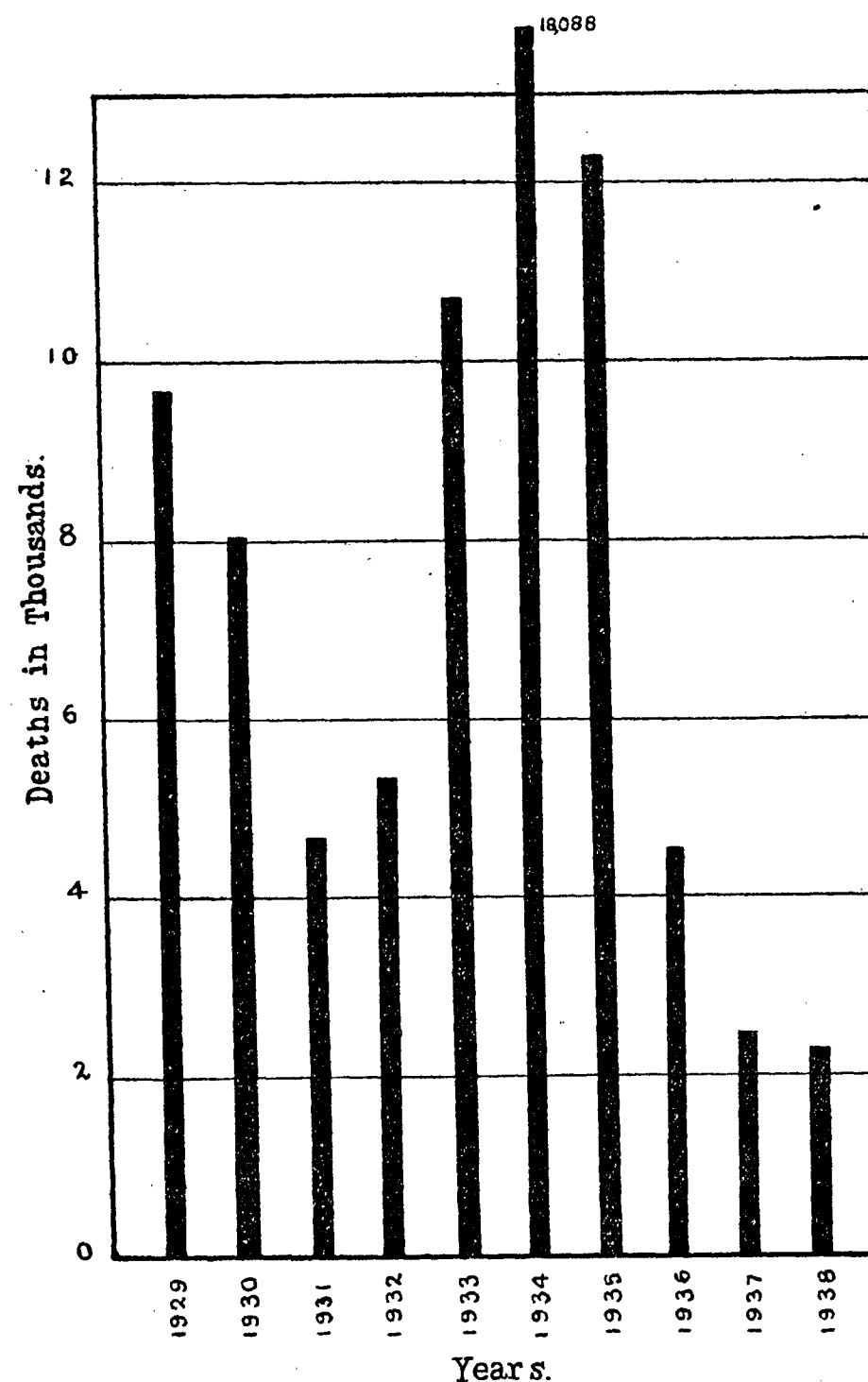
40. The number of deaths from smallpox has still further decreased from 2,446 in 1937 to 2,273 in 1938, giving mortality rates of 0.06 and 0.05 per 1,000 of population. The death-rate from smallpox during the year shows a decrease of 0.16 per mille over the quinquennial average rate of 0.21 per mille. The mortality from smallpox is the lowest ever recorded during the past 71 years. The following table shows the number of deaths registered under smallpox during the past decennium :—

Year.	Number of deaths from smallpox.	Year.	Number of deaths from smallpox.
1929	9,708	1934	18,088
1930	8,025	1935	12,330
1931	4,660	1936	4,581
1932	5,363	1937	2,446
1933	10,745	1938	2,273

Graph II (a)

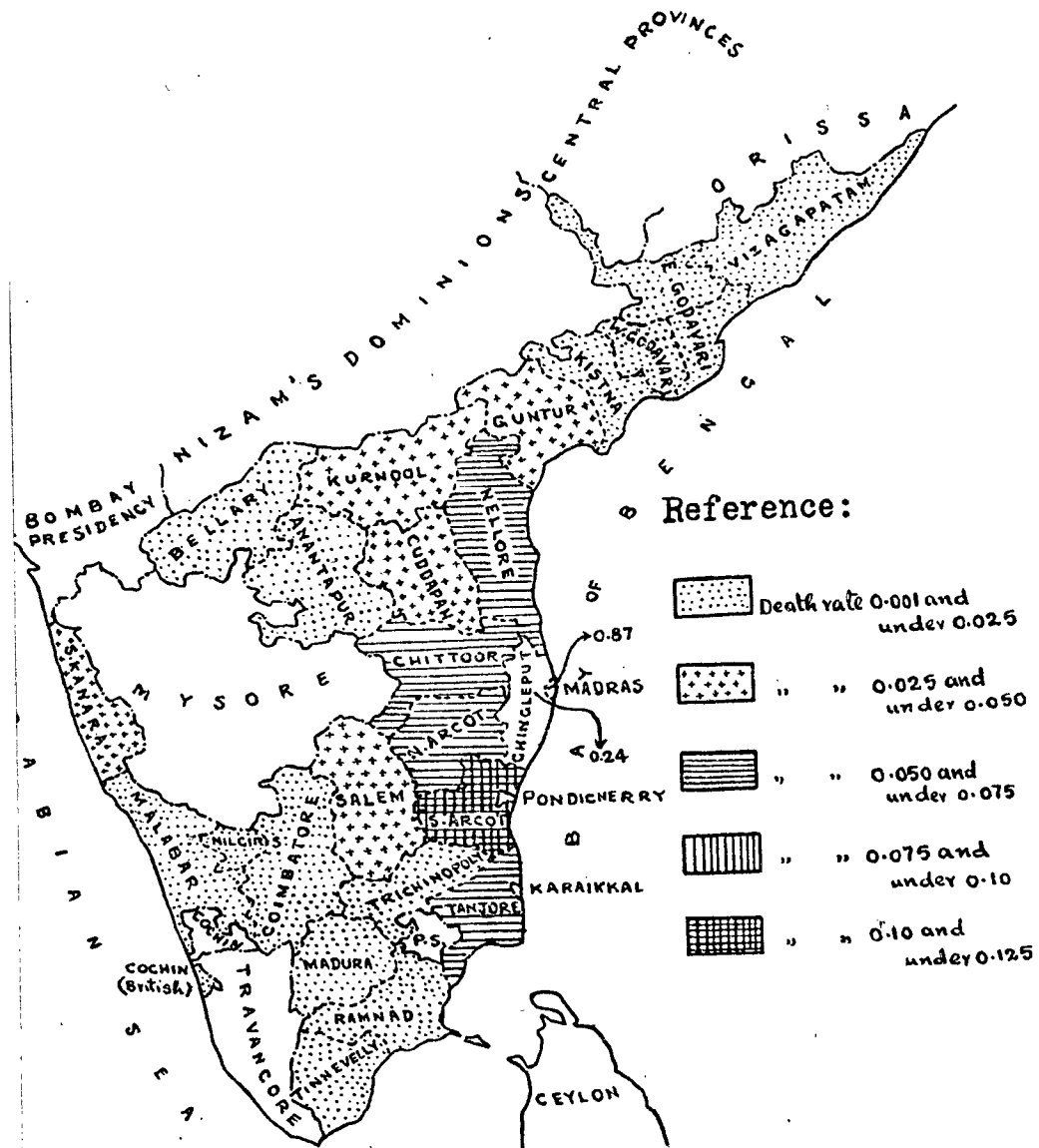
MADRAS PROVINCE.

Deaths from SMALLPOX during the years 1929 to 1938.

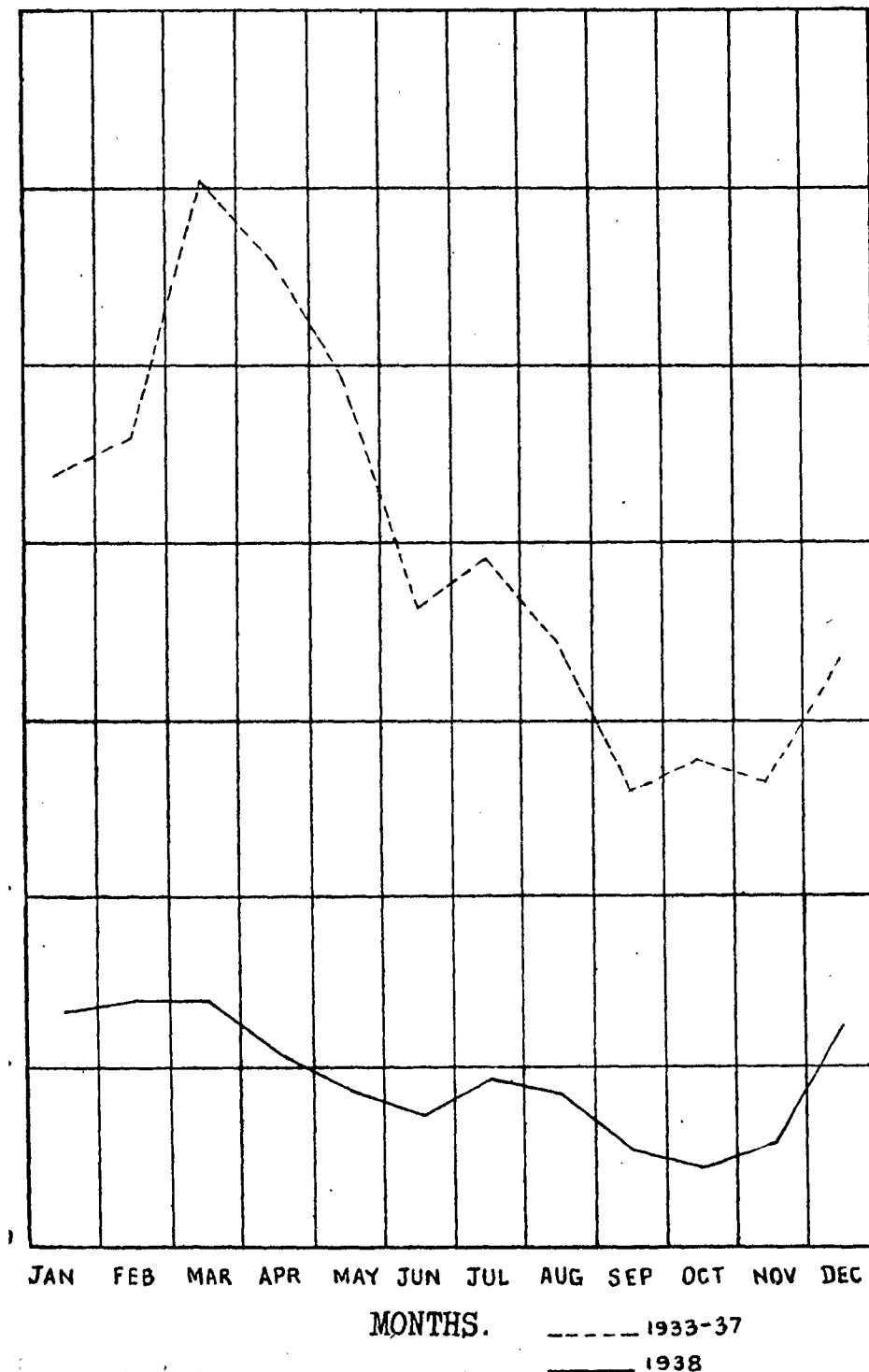


Map II

MADRAS PROVINCE.
MORTALITY FROM SMALLPOX.
1938.



MADRAS PROVINCE.
MEAN MONTHLY DEATHS FROM SMALLPOX IN 1933-1937
AND MONTHLY DEATHS IN 1938.



13

It will be observed from the above statement that the deaths from smallpox have been steadily decreasing since 1934. This decline is due to the intensive vaccination and revaccination campaign carried on from year to year and also due to the continuous propaganda work that is being done to keep the public informed in matters pertaining to the prevention of this disease.

Though all the districts were affected the districts of East Godavari (Plains and Agency), the Nilgiris, Bellary, Kistna and Tinnevely reported only stray cases. The mortality rates from smallpox were less than 0.10 per mille in all the districts except Chingleput and South Arcot which recorded death-rates of 0.24 and 0.12 per mille, respectively. The maximum number of deaths was recorded in the first quarter and the mortality gradually decreased in the subsequent quarters.

Thirty-one municipalities recorded 735 deaths from smallpox giving a death-rate of 0.20 per mille as compared with 0.11 in the previous year. Madras City alone accounted for about 76 per cent of the total smallpox deaths. The other municipalities which returned high mortality were Saidapet (23), Nellore (19), Salem and Kurnool (18 each).

41. The following statement sets forth the distribution of smallpox mortality in the different age periods during the past ten years:—

Year.	Under 1 year.		1 year and under 10 years.		Above 10 years.		Total number of deaths from smallpox.
	Number of deaths from smallpox.	Percent-age to total.	Number of deaths from smallpox.	Percent-age to total.	Number of deaths from smallpox.	Percent-age to total.	
1929 ...	3,431	35.3	2,917	30.0	3,360	34.7	9,708
1930 †	2,324	33.5	1,865	26.9	2,753	39.6	6,942
1931* ...	1,610	40.2	907	22.6	1,488	37.2	4,005
1932 ...	1,455	27.1	1,686	31.4	2,222	41.5	5,363
1933 ...	3,081	28.7	3,009	28.0	4,655	43.3	10,745
1934 ...	5,593	30.9	5,516	30.5	6,979	38.6	18,088
1935 ...	2,338	27.1	3,751	30.4	5,241	42.5	12,330
1936 ...	1,232	28.9	1,327	28.9	2,022	44.2	4,581
1937 ...	677	27.7	713	29.1	1,056	43.2	2,446
1938 ...	596	26.2	583	25.6	1,094	43.2	2,273

* The figures for this year are exclusive of those for five districts.

† Do. Do. Do. Do.

Since 1929 the proportion of deaths from smallpox under one year of age has steadily declined, while the proportion of deaths for ages of 10 years and above has steadily increased. The proportion of deaths in the age period one and under ten years having remained round about 30 per cent till 1935 is since showing a tendency to fall. While the considerable reduction in the mortality due to smallpox in all the age groups, is attributable to the intensive campaign of vaccination and revaccination carried on during the last few years, the incidence of the disease persisting in a larger degree in the older ages above 10 years, points out that, if the immunity of the population at all age groups is to be kept properly balanced and maintained at a satisfactory level, revaccination should be carried out from time to time with as much care, promptness and attention, as are bestowed in the case of infantile and primary vaccination. As the immunity to smallpox conferred by vaccination varies according to the time that has elapsed since the last vaccination, infantile vaccina-

tion should be followed by revaccination before school age and again between 10 and 20 years of age.

42. In accordance with the instructions issued by the Government of India, the details regarding the vaccinal conditions of smallpox cases treated in infectious diseases shed and isolation hospitals are furnished below :—

(a) Vaccinated in infancy as evidenced by one or more cicatrices...	1,405
(b) Stated to have been successfully vaccinated in infancy but no vaccination cicatrix present...	486
(c) Stated to be unvaccinated or unsuccessfully vaccinated and no vaccination cicatrix present	260
(d) Previously unvaccinated but vaccinated during the incubation period of smallpox	40
(e) Stated to have been successfully vaccinated	...
Total	2,191

PLAGUE.

43. A statement of comparative mortality from plague for each quarter during the past five years is furnished below :—

	1934.	1935.	1936.	1937.	1938.
First quarter. ...	1,077	276	136	302	435
Second quarter ...	55	17	29	120	91
Third quarter ...	622	92	205	298	301
Fourth quarter ...	604	260	245	407	328
Total ...	2,358	645	615	1,127	1,155

As usual the second quarter showed the lowest mortality.

1,155 deaths were recorded from plague during the year as against 1,127 deaths during the previous year. The death-rate from plague was the same (0.03) as in the previous year, the quinquennial average also being 0.03. The largest number of deaths was reported from Salem (540 deaths) and Madura districts (444 deaths). Thus these two districts were responsible for 85 per cent of the total plague mortality. Only a single death from plague was registered in Bellary district. Rat falls were reported from five villages, but the smears proved negative to plague. This is the first time for the last 11 years that this district has remained practically free from plague. In Salem, Hosur was the taluk worst affected. Infection spread also to Krishnagiri and Darmapuri taluks during the year. In Madura, the infection was confined to Cumbum valley where 35 villages reported infection during the year.

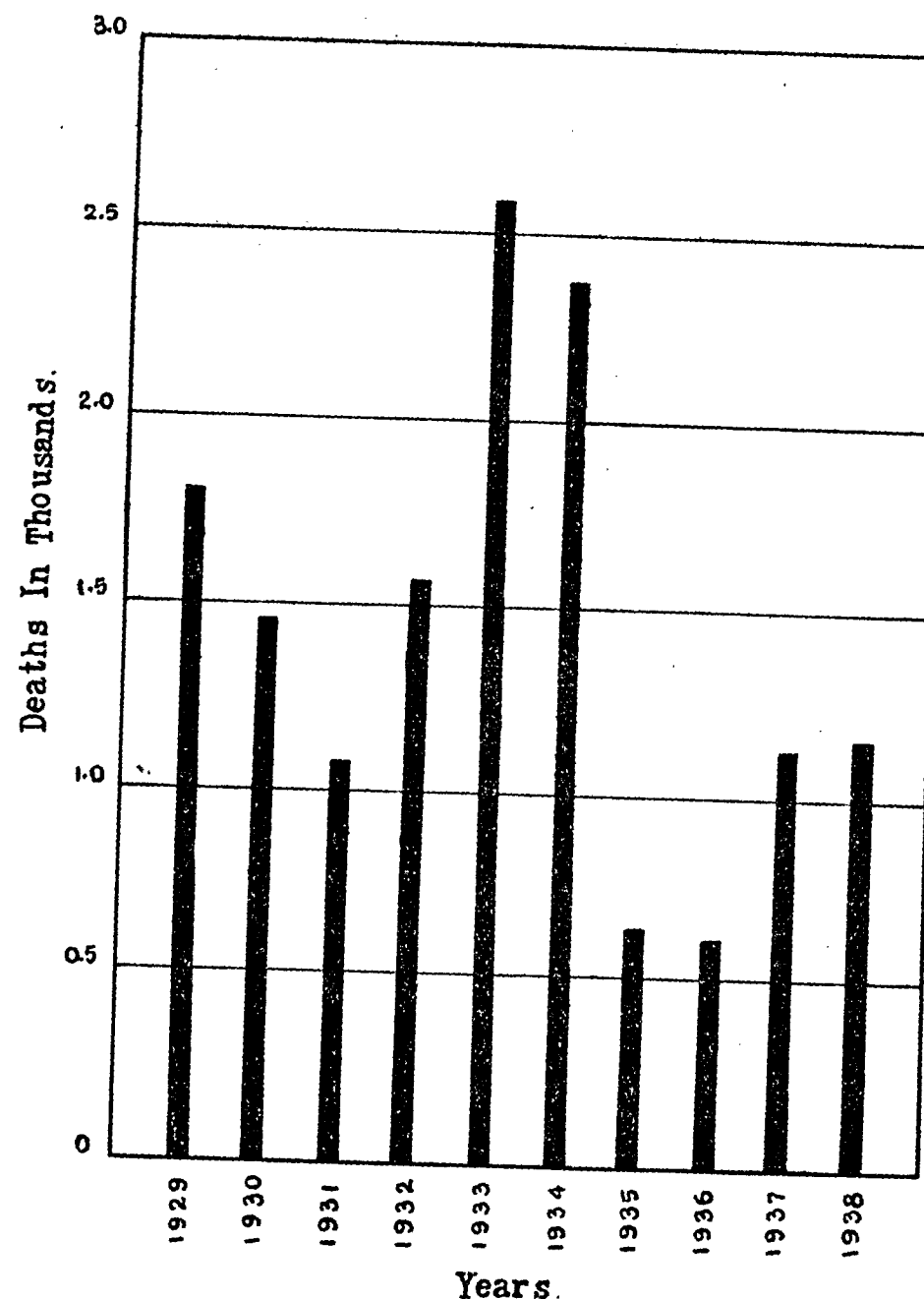
Seven municipalities reported plague. The total deaths recorded were 33. Periyakulam Municipality although in the midst of an endemic area of plague remained free from infection for 5 years ending with 1937. Plague broke out during the year under report, infection being first noticed in bandicoots. There were 19 attacks and 9 deaths in this municipality.

44. Plague control was as usual under the special staff appointed for the purpose in the infected area. The measures adopted were anti-plague

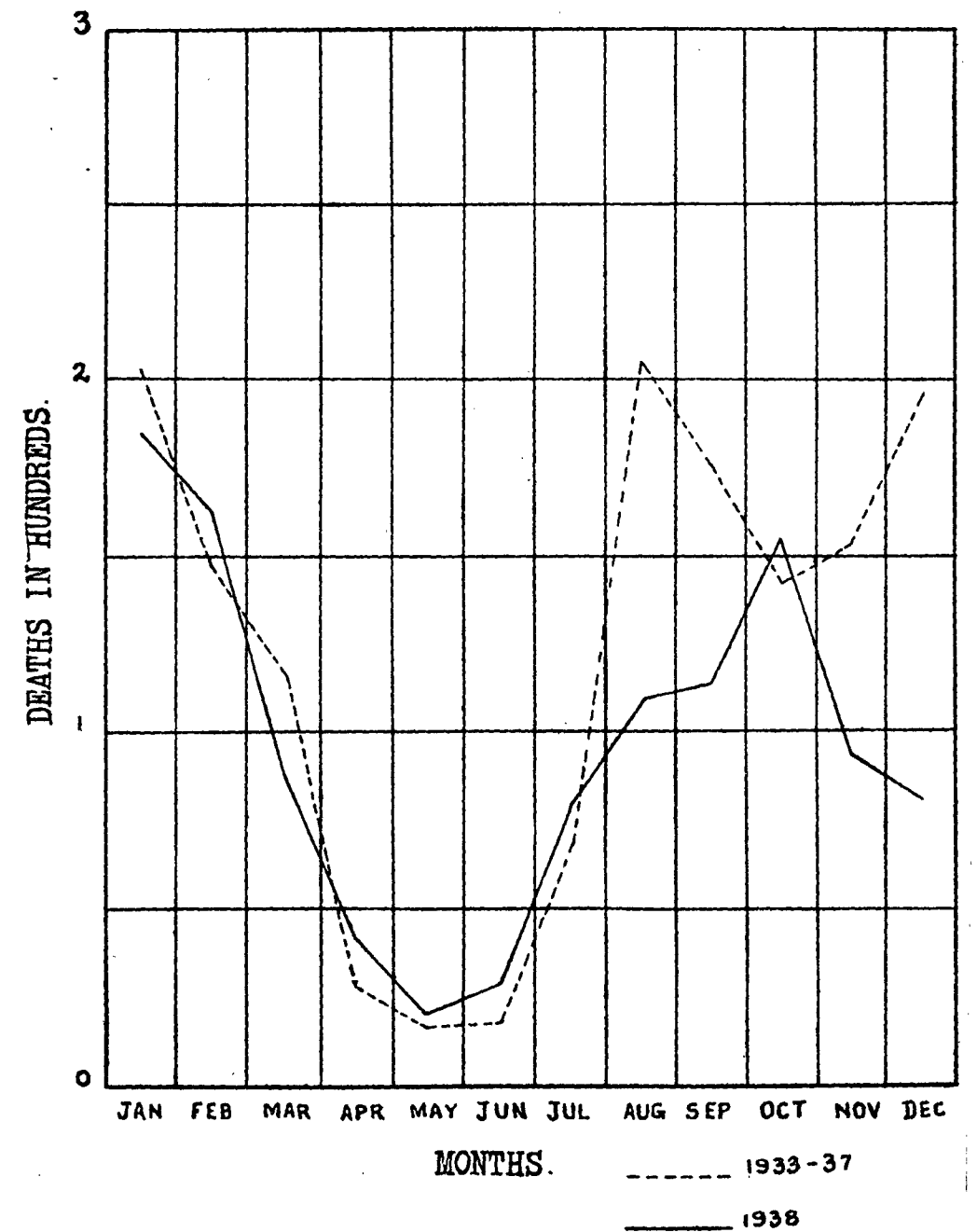
Graph III (a)

MADRAS PROVINCE.

Deaths from PLAGUE during the years 1929 to 1938.



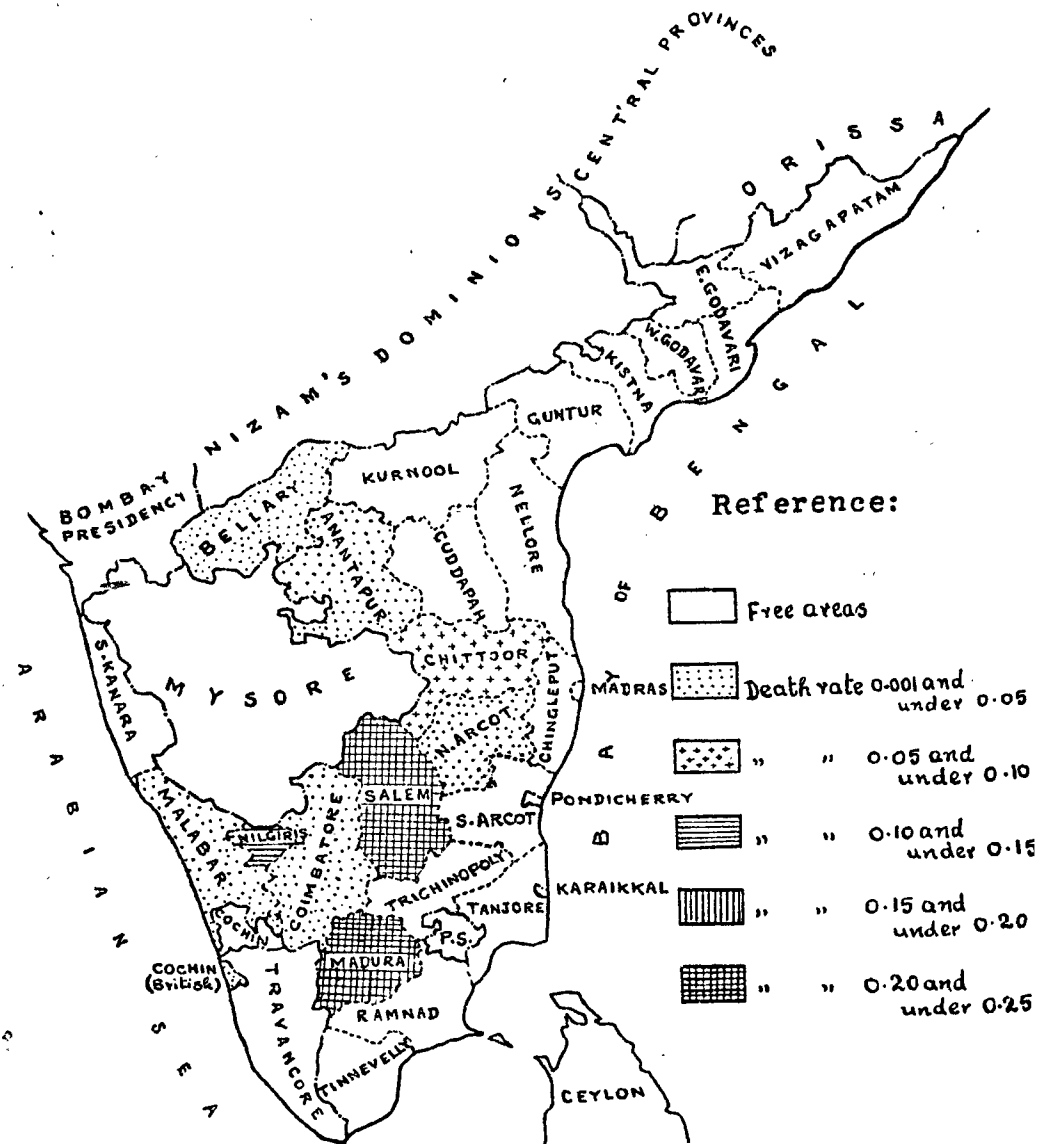
MADRAS PROVINCE.
MEAN MONTHLY DEATHS FROM PLAGUE IN 1933-37
AND MONTHLY DEATHS IN 1938.



M A D R A S P R O V I N C E.

MORTALITY FROM PLAGUE.

1938.

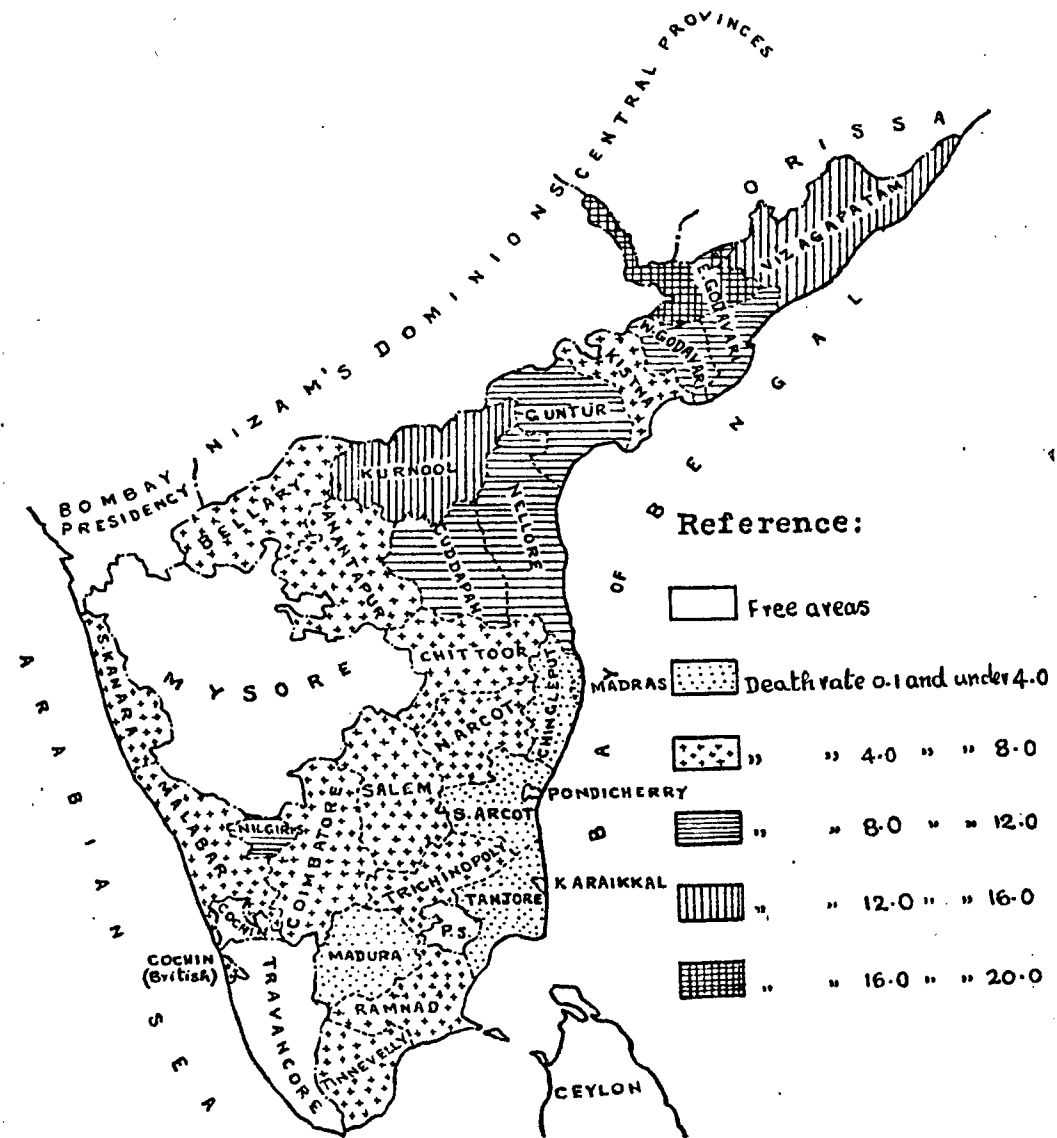


Map IV

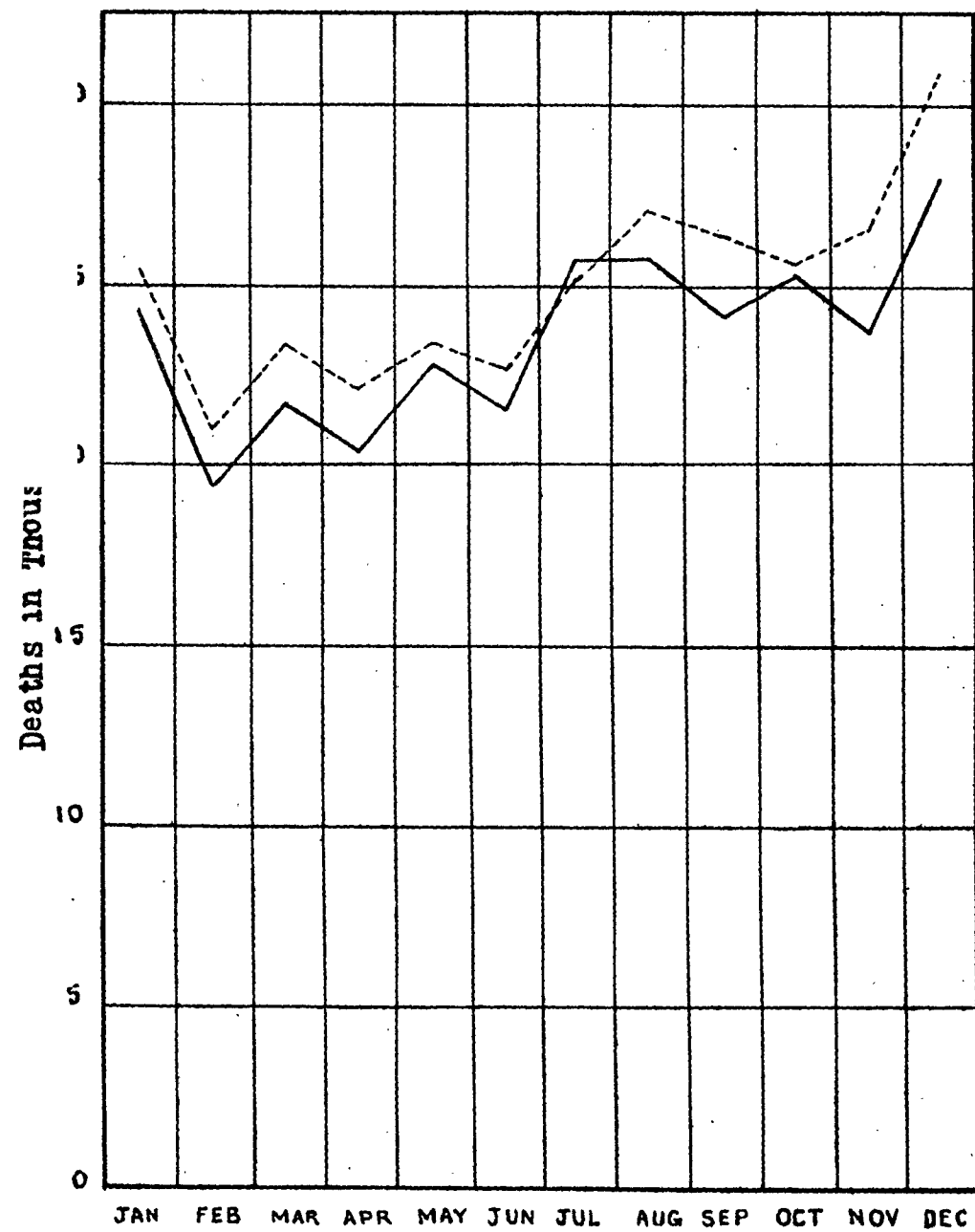
MADRAS PROVINCE.

MORTALITY FROM FEVERS.

1938.



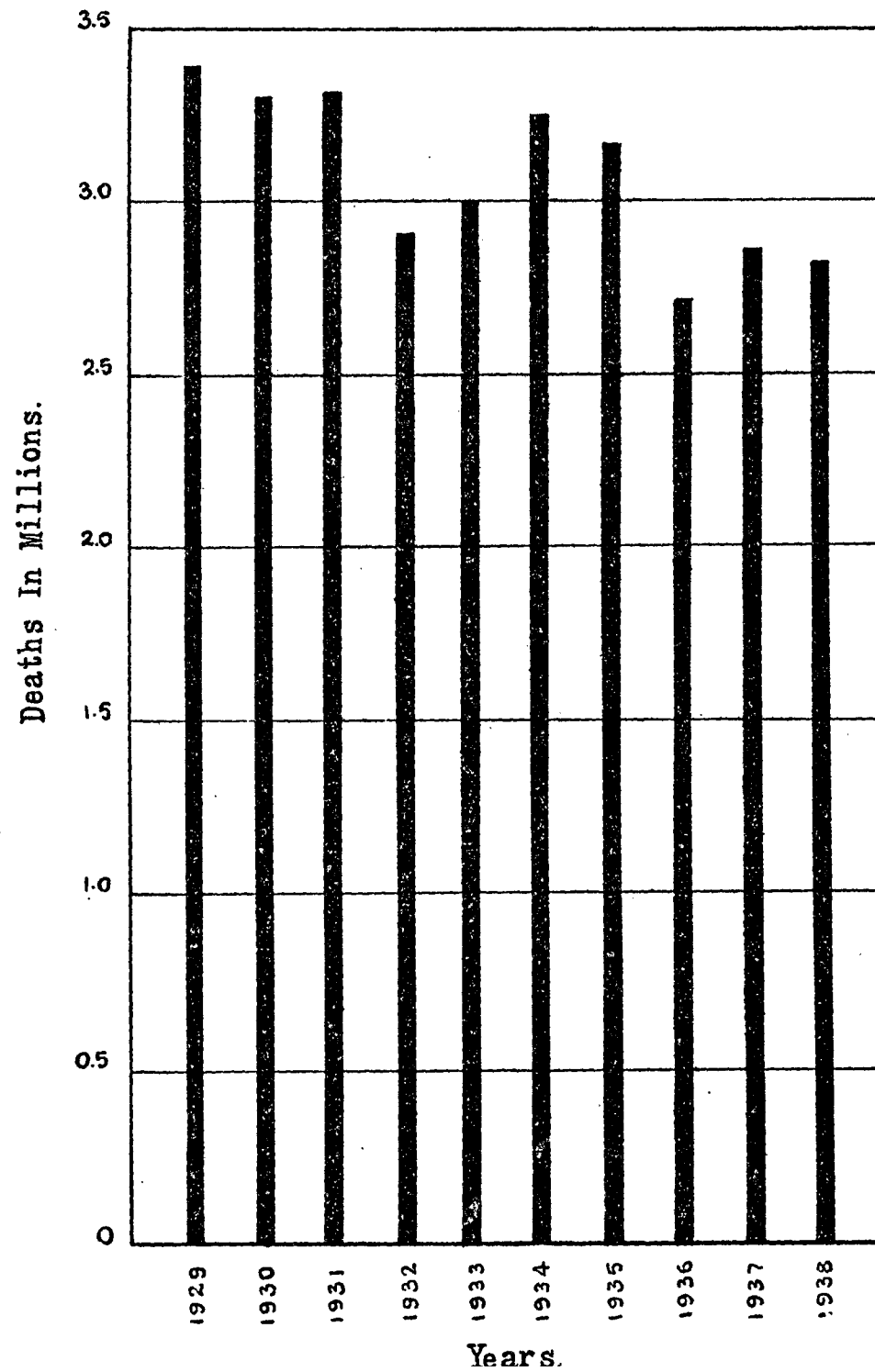
MADRAS PROVINCE.
 MEAN MONTHLY DEATHS FROM FEVERS IN 1933-37
 AND MONTHLY DEATHS IN 1938.



MONTHS. ----- 1933-37
 _____ 1938

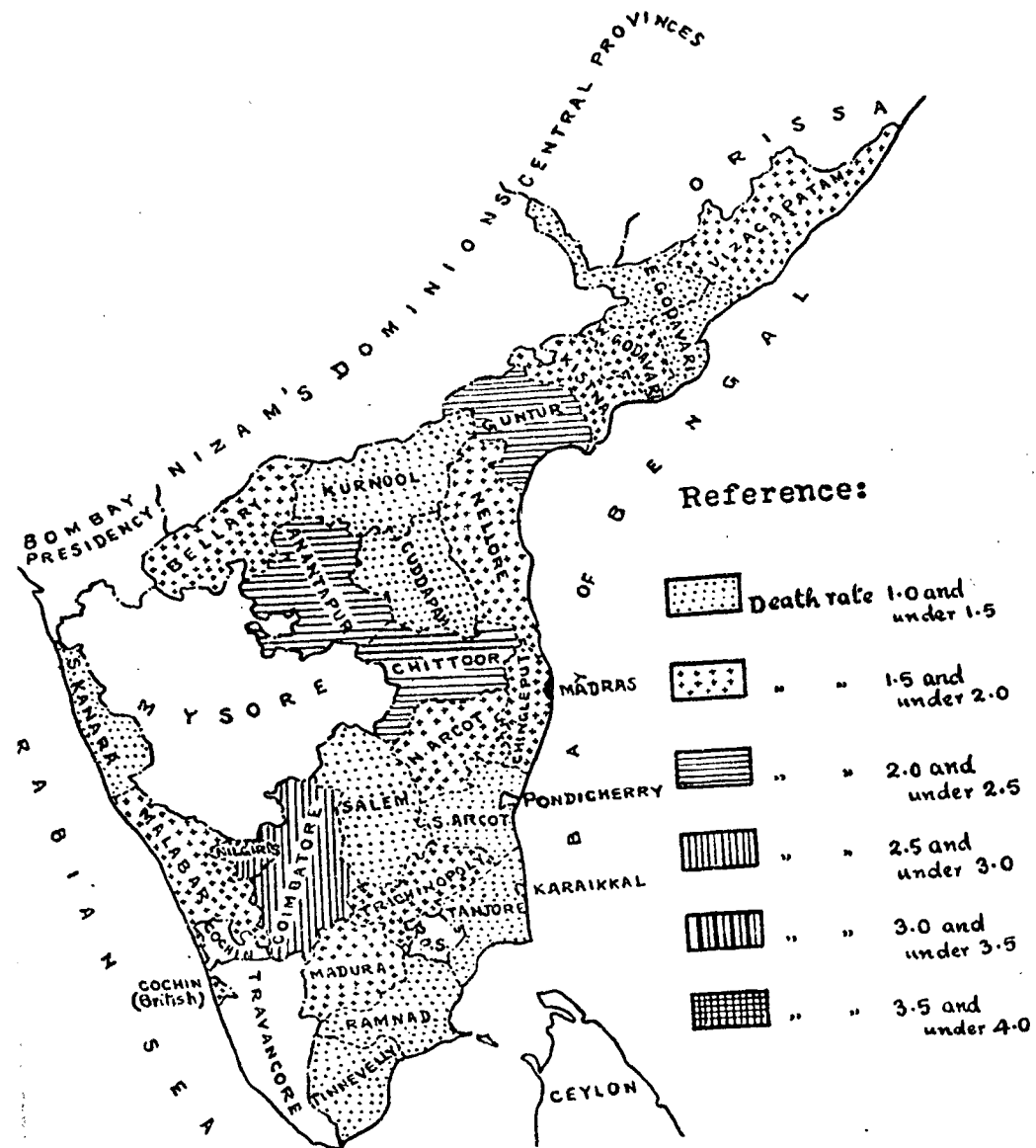
MADRAS PROVINCE

Deaths from FEVERS during the years 1929 to 1938.



MADRAS PROVINCE.
MORTALITY FROM DYSENTERY AND DIARRHOEA.

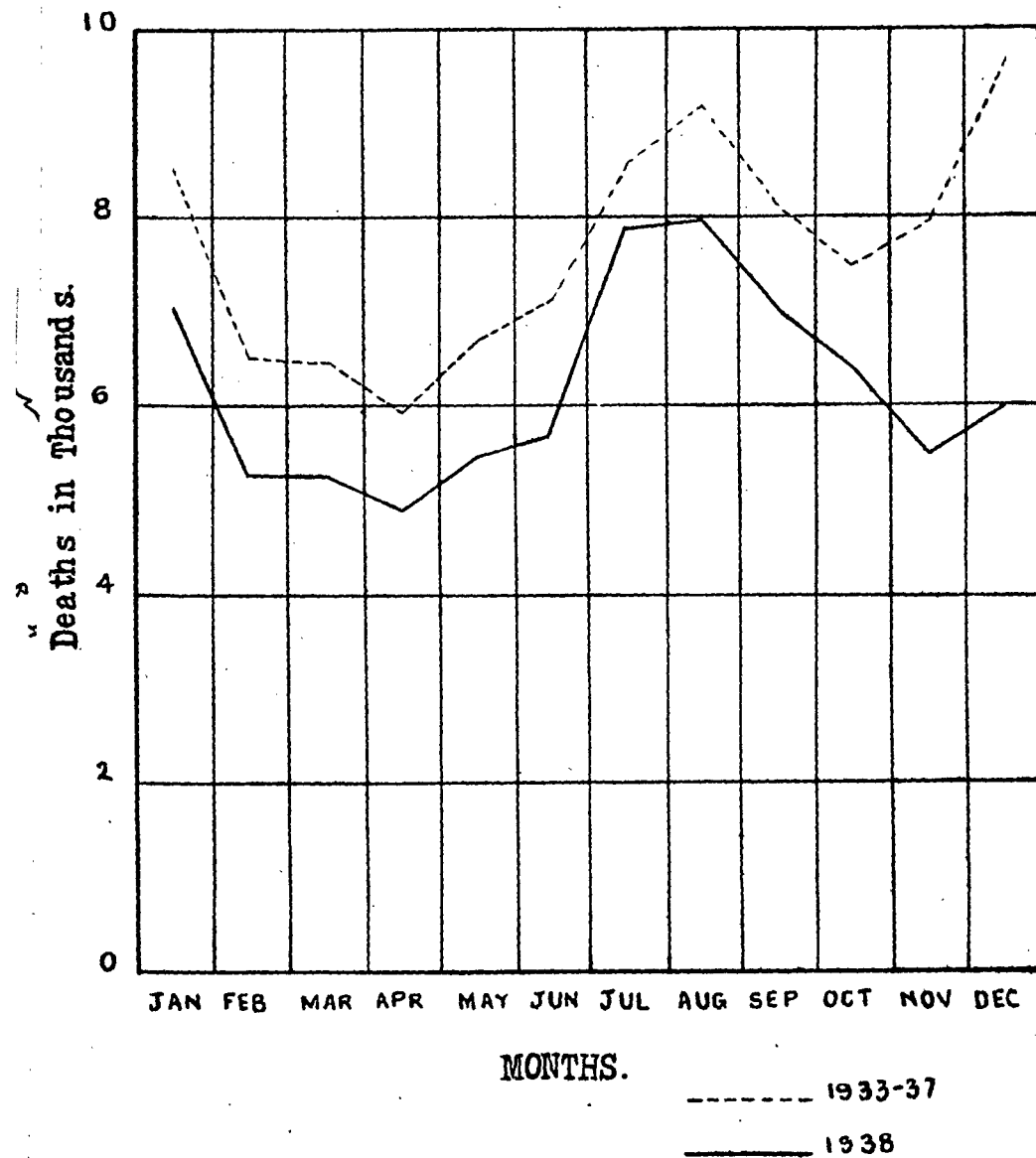
1938.



MADRAS PROVINCE.

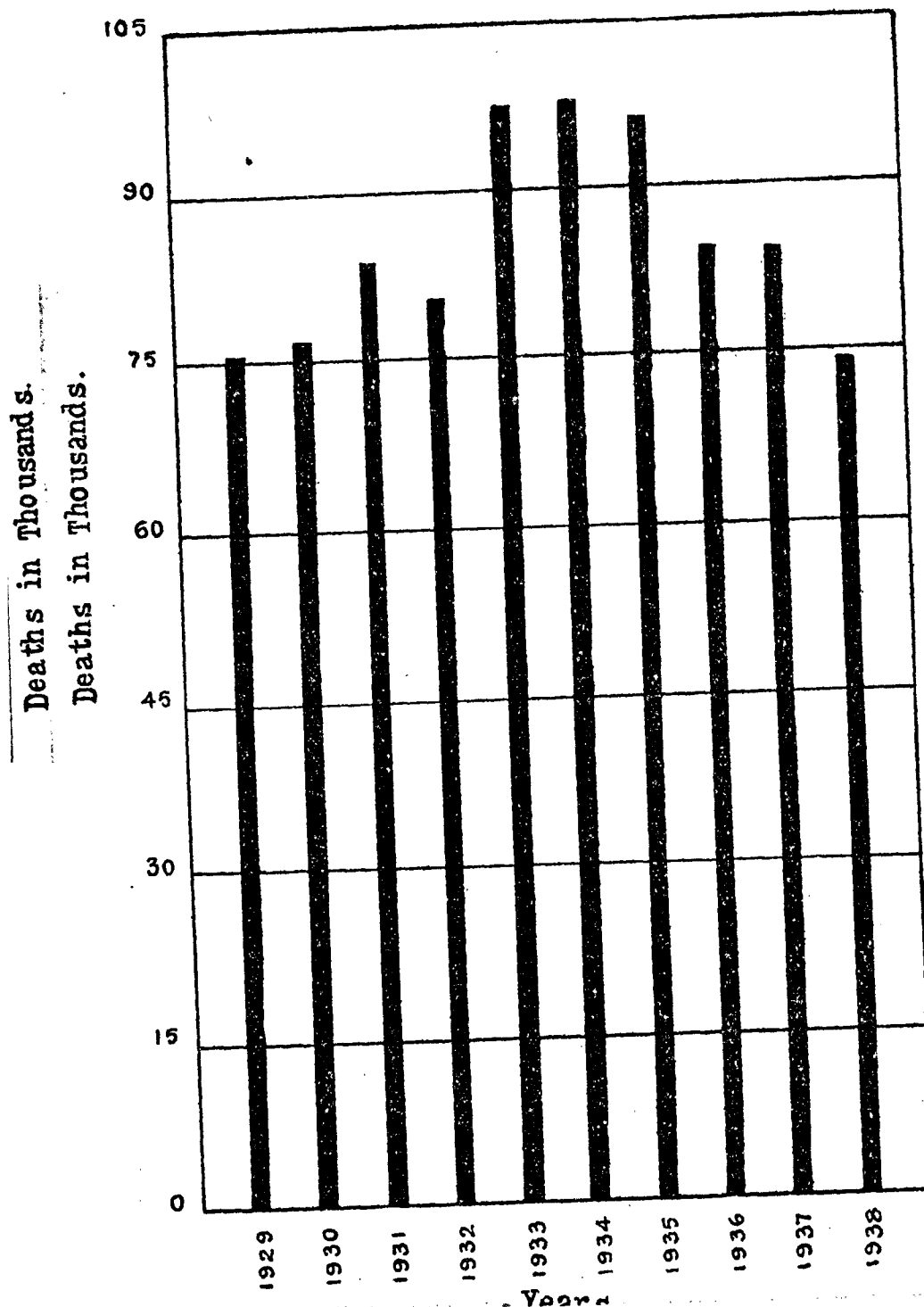
MEAN MONTHLY DEATHS FROM DYSENTERY AND DIARRHOEA
IN 1933-37

AND MONTHLY DEATHS IN 1938.



MADRAS PROVINCE
Deaths from DYSENTERY and DIARRHOEA
During the years 1929 to 1938.

15



inoculations on a mass scale, evacuation of infected localities whenever necessary and cyanogas fumigation of all residences. On the whole 159,510 anti-plague inoculations were done during the year as against 151,225 for last year. These measures proved effective in practice, in almost all the areas.

45. In G.O. Ms. No. 1625, P.H., dated 2nd May 1938, Government sanctioned experimental routine cyanogas fumigation scheme in seven districts, viz., Anantapur, Bellary, Coimbatore, Nilgiris, Salem, Madura, and North Arcot, and in six municipalities, viz., Bellary, Bodinayakanur, Calicut, Hospet, Tirupattur and Vaniyambadi. The cost of the scheme is shared equally by the local body and the Provincial Government. Very satisfactory results have been reported from the working of the scheme. It is said to have been specially responsible for the prompt control of plague in Periyakulam and Tiruppur municipalities.

FEVERS.

46. Statement IX of Appendix I gives number of deaths registered under fevers and the mortality rates in each district. During the year under report 282,708 deaths were recorded under this head, giving a death rate of 6.43 per mille as against 6.52 per mille in the previous year and the quinquennial rate of 6.74 per mille. Fevers accounted for nearly 27 per cent of the total number of deaths in the Province. The districts which recorded high fever mortality rates were East Godavari Agency (16.15), Kurnool (13.36), Vizagapatam (13.25), Cuddapah (11.36) and East Godavari, Plains (10.07). These districts have recorded high fever mortality rates in the previous years also and the high rates might be due to large areas in the districts being malarious. As in the previous year the districts of Tanjore (2.35), Madura (3.50), Chingleput (3.59) and South Arcot (3.64) returned low fever death-rates. The incidence of fever mortality reached its maximum in the last quarter.

10,294 deaths were registered under "fevers" in the municipalities giving a mortality rate of 2.79 per mille as against 2.90 per mille in 1937. The municipalities that recorded high rates were Narasaraopet (9.98), Guntur (6.75), Tadpatri (6.58), Nellore (6.06) and Karur (6.05), while thirteen municipalities returned rates less than 1.00 per mille.

In the rural towns, 15,114 deaths were recorded under "fevers", giving a death rate of 6.04 per mille as compared with 15,510 deaths in 1937, giving a rate of 6.19 per mille.

DYSENTERY AND DIARRHOEA.

47. There has been a considerable fall in the number of deaths recorded under "dysentery and diarrhoea" from 84,276 in the previous year to 74,064 during the year under report, giving mortality rates of 1.92 and 1.68 per mille, respectively. The maximum mortality was recorded in the third quarter and the minimum in the second. A close correspondence is observed in the increase and decrease in the monthly deaths from "cholera," and "dysentery and diarrhoea." The number of deaths and death-rates from dysentery and diarrhoea are furnished in Statement X of Appendix I. The districts that returned high mortality rates from these causes were the Nilgiris (2.98), Coimbatore (2.58), Chittoor (2.36),

Anantapur (2.10) and Guntur (2.06), while the districts of Salem and Cuddapah recorded the lowest rate of 1.05.

In municipalities 10,634 deaths from dysentery and diarrhoea were registered during the year, giving a mortality rate of 2.88 per mille as compared with a mortality of 11,327 giving a rate of 3.06 per mille in the previous year. Chicacole (8.99), Ongole (6.36), Vizagapatam (5.90), Tiruppur (5.87), Tiruvannamalai (5.44), Anakapalle (5.22) and Gudiyattam (5.02) recorded high mortality rates.

4,951 deaths were registered under dysentery and diarrhoea in rural towns giving a death-rate of 1.98 as against 5,627 deaths with a rate of 2.24 in the previous year.

RESPIRATORY DISEASES.

48. 96,420 deaths from respiratory diseases were recorded during the year giving a mortality rate of 2.19 per mille as against 95,906 deaths with a rate of 2.18 per mille in 1937, the quinquennial average rate being 2.26.

As in the previous year, 9 per cent of the total deaths were due to respiratory diseases. The maximum incidence was recorded in December and the minimum in April. The mortality rate from this group of diseases in urban areas was 4.60 per mille and that in rural areas was 1.80 per mille. The high rate in urban areas is in all probability due to overcrowding and congestion which favour the spread of respiratory diseases. Statement XI of Appendix I gives the total number of deaths and death-rates from respiratory diseases in each district. High mortality rates from this group of diseases were recorded in the districts of the Nilgiris (4.47), Madura (3.53) and Coimbatore (3.32). These districts reported high rates in the previous year also.

23,463 deaths from respiratory diseases were registered in the municipalities giving a rate of 6.36 per mille as compared with 23,600 deaths with a rate of 6.38 per mille in the previous year. The highest mortality rates under this head were recorded in Palni (13.18), Madras (11.42), Madura (10.26), Anakapalle (9.89), Bellary (9.48), Kodaikanal (8.43), Ongole (8.04) and Adoni (8.00). The municipalities which returned low rates were Chirala (0.95), Peddapuram (1.15) and Dindigul (1.97).

In the rural towns 5,001 deaths were recorded during the year under this head giving a rate of 2.00 per mille as against 4,870 deaths with a rate of 1.94 per mille in 1937.

PULMONARY TUBERCULOSIS.

49. Statistics of Pulmonary Tuberculosis are not available for non-municipal areas, as tuberculosis is not a separately registrable cause of death in non-municipal areas. In municipalities 6,929 deaths from Pulmonary Tuberculosis were registered, giving a mortality rate of 1.88 per mille as against 1.79 per mille in 1937. This disease was responsible for 6.4 per cent of the total number of deaths recorded in the municipalities.

RABIES.

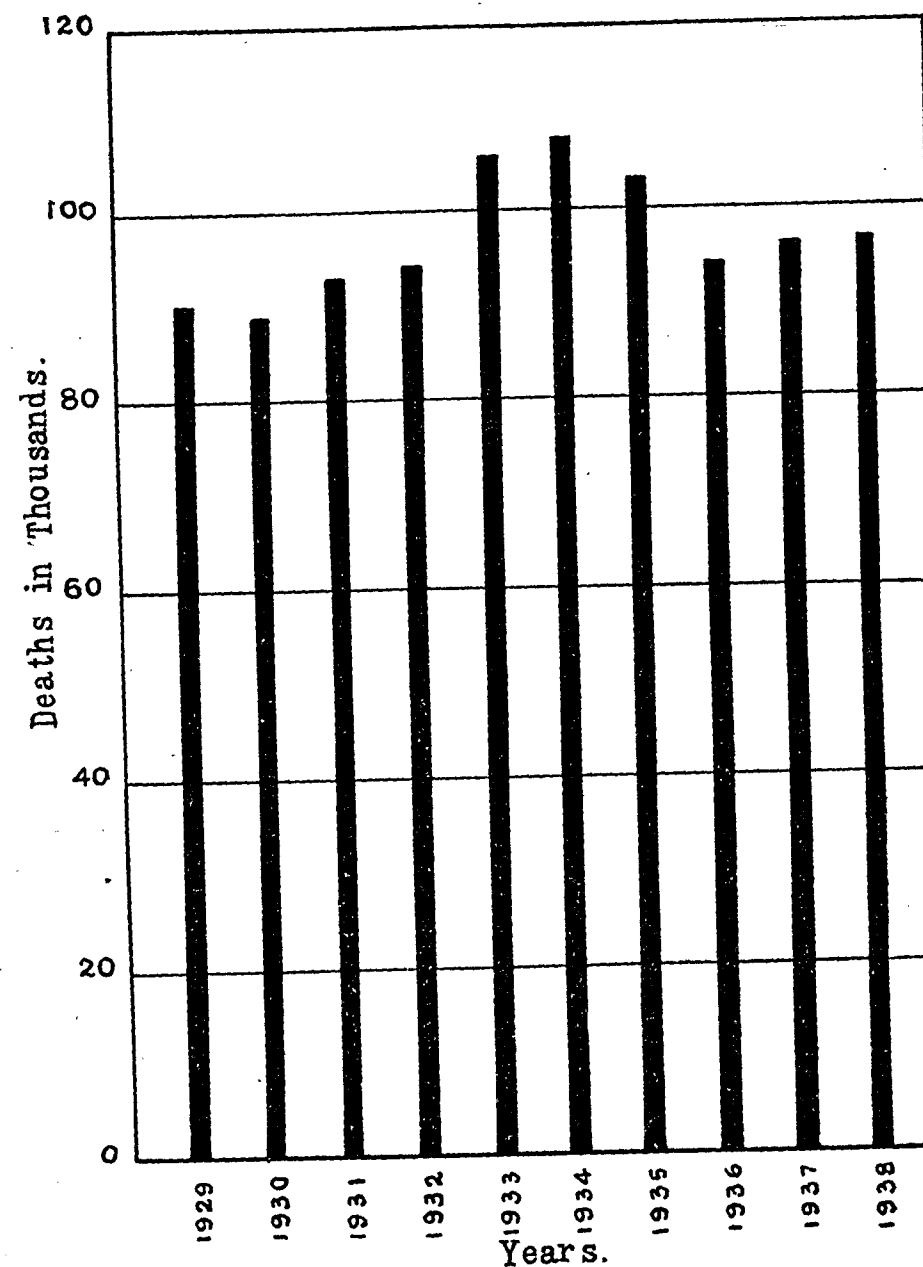
50. The number of deaths from rabies registered during the year was 1,109 (149 in urban areas, and 960 in rural areas) as against 826 in the previous year.

Graph VI (a)

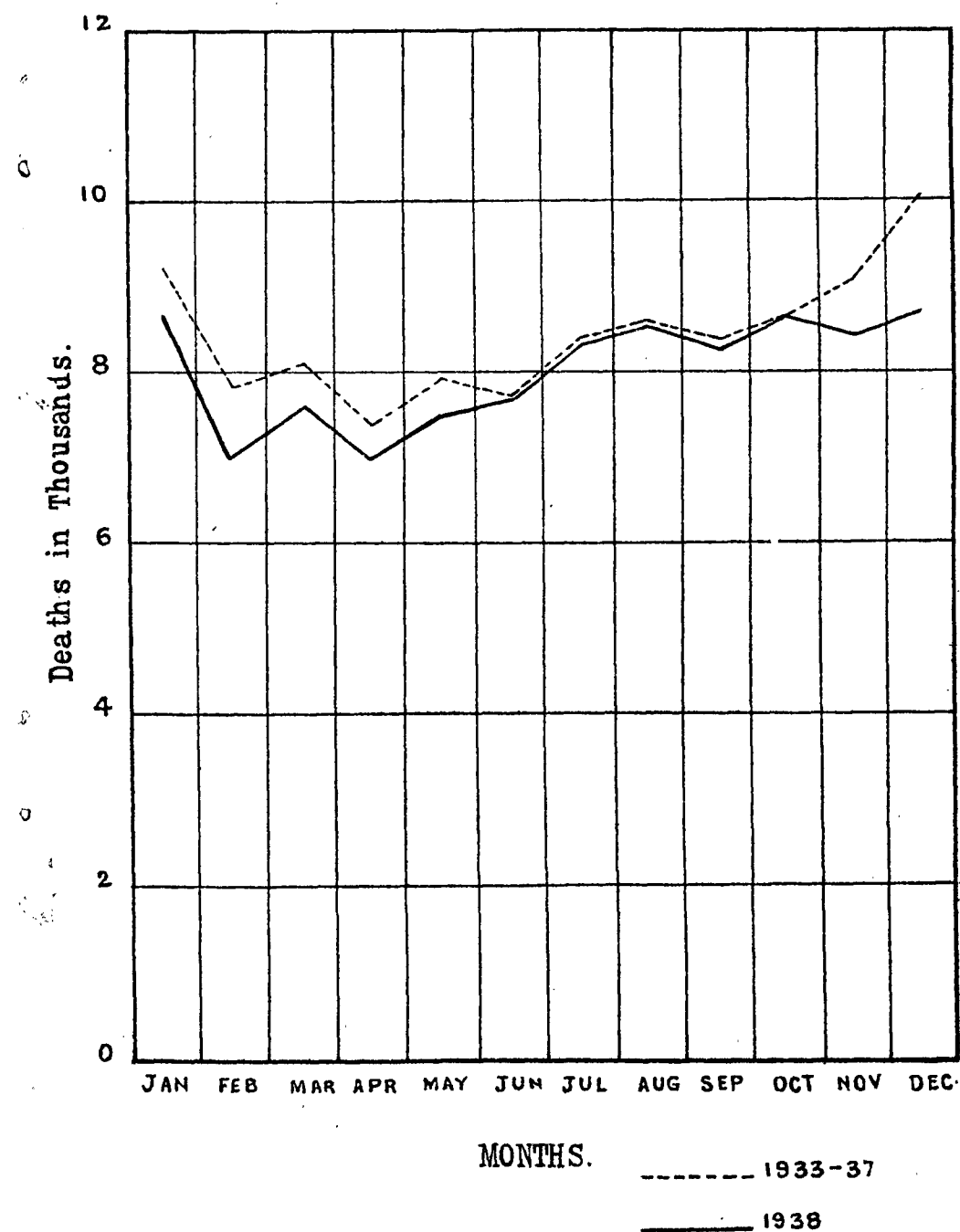
MADRAS PROVINCE.

Deaths from RESPIRATORY DISEASES

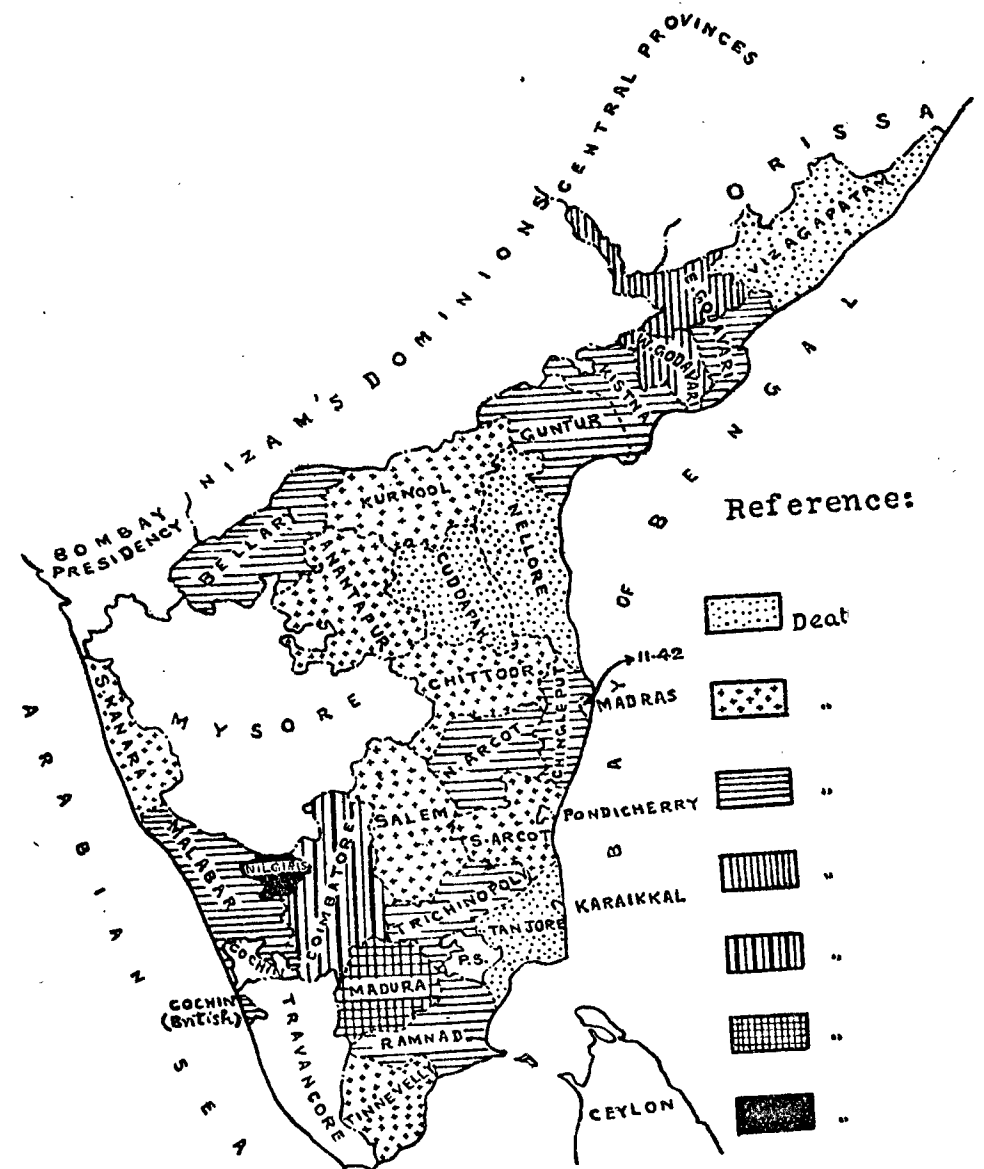
During the years 1929 to 1938.



MADRAS PROVINCE.
MEAN MONTHLY DEATHS FROM RESPIRATORY DISEASES
IN 1933-37
AND MONTHLY DEATHS IN 1938.



MADRAS PROVINCE. MORTALITY FROM RESPIRATORY DISEASES. 1938.



TYPHOID.

51. There is at present no record of the prevalence of this disease, especially in the rural areas. In Malabar district 585 attacks and 84 deaths were reported. The District Health Officer reports that the incidence increases with the onset of the monsoon and lasts till October. About 2,500 doses of anti-typhoid vaccine were supplied and mass inoculation of contacts was done free of cost. Similar protection of contacts was afforded in the case of some typhoid cases in some municipalities. In G.O. No. 3098, P.H., dated 31st August 1938, Government sanctioned the continuance of the supply of typhoid vaccine to local bodies on concessional rates for a further period of two years from March 1938.

DIPHTHERIA.

52. The occurrence of this disease is not often recognized as such, so that very few cases come to the notice of the Health Department. During the year there were 9 attacks and 1 death in Coonoor municipality. Throat swabs were taken from 490 contacts, 25 of whom were found to be carriers. All of them were isolated and treated. Three hundred and forty-eight contacts were given preventive inoculation. In Ootacamund municipality there were 13 attacks and 3 deaths. Throat swabs were taken from 187 contacts, 11 of them were found positive and given prophylactic serum.

CEREBRO-SPINAL MENINGITIS.

53. An epidemic of this disease broke out in the Egmore Division of Madras City in the second week of October 1938, resulting in 41 attacks and 22 deaths. Necessary preventive measures were taken promptly by the Corporation Health Department as soon as the nature of the disease was established. A bacteriological unit of the King Institute, Guindy, was detailed to work in the affected areas for a survey of contacts and rapid diagnosis of cases. The epidemic was soon brought under control.

YAWS.

54. The prevalence of this disease on a large scale was reported from the districts of Madura, Kurnool and Tinnevely. A few cases were noticed in Tiruppur, Tuticorin, Coonoor and Coimbatore municipalities.

In Madura district the disease was first noticed in Kachakatti village in July 1937. Eighty-nine cases were treated that year by special staff. In September 1938, there was a recrudescence giving rise to 40 cases till February 1939. Of these 19 were recurrence in treated cases and the rest new attacks. All these were given the full treatment.

In Kurnool, the disease is said to be prevalent among the Chenchus, an aboriginal tribe in the Nallamalai Hills.

In Tinnevely district the disease was noticed in T. Kallikulam village. About thirty cases were discovered, confined to fishermen. Most of the cases were in children. All the cases were given treatment by special staff.

ANTHRAX.

55. An outbreak of malignant pustular form of Anthrax was reported from Muttrampet village of Villupuram taluk, South Arcot district. The infection was confined to a cheri of 60 houses. There were 5 attacks and 3

deaths The source of infection was traced to the cutting up of carcasses of infected animals and a clear history of anthrax in cattle could be had. The Veterinary Department took necessary steps to prevent the spread of infection among animals. The skins of the carcasses were traced and the authorities duly informed.

OTHER CAUSES OF DEATHS.

56. As there are only a few specific causes of deaths provided for in the death registers maintained in the villages, more than half the total number of deaths (52 per cent) are classed under "Other causes of deaths." Five lakhs thirty-five thousand four hundred and forty-nine deaths were registered under this head. With the present agency for registration of births and deaths in villages it is not possible to secure a more accurate classification of causes of death in the immediate future, though efforts are being made to improve matters. An attempt has however been made to collect figures regarding detailed causes of deaths in fifteen municipalities with first-class Health Officers and the figures are consolidated in Annexure A. It is seen that only 6 per cent of the total number of deaths are classed under "Other causes of death."

PLAGUE RESEARCH.

57. Nineteen villages and hamlets around Cumbum town were fumigated during the year. Six of these places were fumigated when they were threatened with plague, two of which have since been free from plague for over a year, three for 8 to 10 months, and one for 2 months. Infected villages yielded varying results, in proportion to the extent of the spread of rat plague and the intensity of work. If it were possible to refumigate these villages every quarter continuously for a few years, there is reasonable prospect of eradicating the endemicity of plague.

Two lakhs five thousand nine hundred and ninety-eight rat holes and 6,372 cracks in walls in 25,471 houses were fumigated during the year. 5,963 house rats, 284 bandicoots, 8,876 house mice, 96 musk rats and 22 snakes were picked up dead or dying during these operations. Eleven thousand seven hundred and eighty-six rodents were examined in the laboratory, of which 42 proved positive to plague. Ninety-eight carcasses from various villages were examined and 57 were positive. Bone marrow material was employed for diagnosing infection in decomposed carcasses.

58. The problem of killing rats and fleas in thatch roofs was specially studied during the year. The usual type of mud houses in the Cumbum Valley can in no sense be rendered gas-tight, but the permeation of gas in the interstices of the thatch is enough to destroy the rats and fleas harboured therein. It is enough if the doors and windows are tightly closed, all small openings packed with wet mud and any gap between wall and roof stuffed with gunny rolls. A concentration of 3 to 4 oz. of HCN (12 to 16 oz. cyanogas) per 1,000 cubic feet and an exposure of 3 to 4 hours are found sufficient for fumigating these houses. To fumigate entire houses in this fashion is of course a rather costly procedure, but in all infected houses the method will amply repay the cost.

59. A small two-roomed, mud-walled house, incorporating certain devices to eliminate rat harbourages, has been constructed in the premises of the laboratory at Cumbum. The efficiency of the device

introduced is being observed by artificially introducing rats, and so far they have stood the tests.

60. Rat flea surveys of selected villages immediately before and after fumigation of rat holes, have shown that while rat densities were reduced by 40 to 80 per cent the flea indices showed no marked reduction. This is possibly due to the concentration of wild fleas from sources other than rat holes on the surviving rats.

61. Comparative studies of the nests of the different species of rats prevailing in the area, were continued during the year, and considerable useful data have been collected. This has helped to prove the preferential environments favouring the prolific breeding of the different species of fleas relative to their specific hosts. Thus while *astia* fleas preponderate in underground nests, *cheopis* fleas show no such preference at all or more often show a tendency to the reverse. Admixture of cotton in the nests of rats tends to favour the multiplication of *cheopis* fleas. Nests of bandicoots were found to contain 93 per cent *astia* and 7 per cent *cheopis* fleas, while those of other field rodents like gerbilles had only *astia* fleas.

Fumigation of rat nests under air-tight conditions effects thorough destructions of fleas from eggs to imago. Nests recovered from fumigated rat holes have however often yielded adult fleas on sufficient incubation showing thereby that the flea eggs are not all destroyed during routine cyanogas fumigation operations.

62. *Control of goods traffic from infected areas.*—All suspected goods from infected areas were as a routine submitted to cyanogas fumigation before being allowed to pass. These operations were done by the District Plague staff with the co-operation of the Research Unit. Such measures to control the spread of infection are now being generally attempted in other plague areas as well, but the experience in Cumbum Valley may still be stated for general information. The thoroughness of this measure depends to a large extent on continuous and efficient supervision, and where this is not always possible, attempt must really be made to fumigate as often as possible (weekly or at least fortnightly) all wholesale stores of grains, etc., within the infected zone, restricting the fumigation operations at the control gates to such consignments as have escaped treatment at their source and to personal effects of passengers.

FILARIASIS.

63. The filariasis survey of Saidapet was continued up to about the end of June 1938 when it was temporarily suspended. During this period 2,524 people belonging to 545 families residing in 247 houses were examined for clinical signs of filariasis. 178 persons had one or other of the more common manifestations of filarial disease. In addition to this, about 437 persons showed enlarged groin glands suggestive of filarial origin. 1,240 culex mosquitos from 316 houses were dissected and of these 345 (27.8 per cent) were found infected with the developmental stages of the larvæ of *Wuchereria bancrofti* (*filaria bancrofti*).

On the suspension of work at Saidapet, the Poonamalle Health Unit area, and later, the divisions in Madras City adjoining Saidapet were taken up for filarial surveys. These surveys are as yet incomplete to draw any comparative inferences, though a high degree of human and mosquito infection has been observed in the areas so far dealt with.

GUINEA-WORM.

64. During August-September of the year, the Research Health Officer was deputed to Mysore for training in guinea worm control and investigation methods in Chitaldrug district under the Director of Public Health, Mysore. On his return after the training, he made a survey of guinea-worm infection in the famine camps of Bellary district. One thousand and twenty-two persons representing a random sample of the population of 14 villages were examined at the various camps. 153 persons (15 per cent) composed of 95 males out of 508 and 58 females out of 514 were found either with present or recent infection.

LEPROSY CAMPAIGN.

65. The new phases of activity in the leprosy campaign during 1938 were the investigation of the factors contributing to the endemicity of the disease, and dietetic, therapeutic and animal inoculation experiments.

The areas selected for the investigation of endemicity were Cuddalore and Villupuram in South Arcot district, Virasettipalli in Chittoor district and Peddapuram and Cocanada in East Godavari district. In a preliminary survey conducted in a population of about 78,000 in 82 villages in the above areas, 1,503 cases of leprosy have been detected. An intensive survey will probably result in the discovery of an additional one thousand cases.

The dietetic experiments demonstrate that skimmed milk is a useful adjunct in the treatment of lepromatous type of cases in children. It has also been found that wheat diet is useful in relieving nerve pains in the great majority of cases in adults. Several new drugs were tested during the year but no conclusive results have been obtained. The results of the animal inoculation experiments which have been carried out in collaboration with the Director, King Institute, Guindy, will be embodied in his report. Besides the investigations referred to above, a centre for the study of the methods of leprosy control in a rural area was completed towards the close of the year.

66. In school surveys which form part of leprosy campaign 24,139 pupils were examined in 157 schools and nearly 400 cases of definite infection and 500 suspicious cases were detected.

67. Approximately 4,000 cases were treated in 1938 in the twelve leper asylums in the Province; 337 of these cases were discharged as "disease arrested." These figures are exclusive of statistics relating to Tirumani Leper Settlement. In view of the fundamental change ordered by Government in the matter of admissions in the asylum, admissions will in future be restricted to infectious cases amenable to treatment and this will be the basis of Government grants to the institutions.

As a result of intensive propaganda, there is increased recognition on the part of the public, of the value of treatment in the early stages of leprosy. The number of clinics functioning during the year and the number of fresh cases admitted for treatment were 456 and 33,500 respectively, the corresponding figures for the previous year being 442 and

33,038. The total number of injections administered during the year was nearly a million.

The Chief Leprosy Officer is maintaining records of non-infectious cases of leprosy who are permitted to continue in Government service provided that they are under treatment and surveillance.

68. Twenty-two Health Officers underwent post-graduate training in leprosy in 1938.

Progress in leprosy relief work has, to a large extent, been rendered possible through the assistance given by the British Empire Leprosy Relief Association.

MALARIA CONTROL.

69. A rapid malaria survey in Shevaroy (Salem district) was carried out during the year. It was felt that a detailed investigation by a special unit would be necessary for chalking out a systematic line of work. For the present an extension of the scheme of free distribution of quinine in this area was recommended, provided the supervising staff was employed by the local body.

A scheme of permanent anti-malarial measures for Uttangarai (Salem) was drawn up and discussed at the conference of the officers of the Revenue, Public Health, Public Works and Local Board Departments. The scheme is under the consideration of the Government.

70. *Anti-malarial measures*:—Anti-malarial measures in Krishna-devipeta (Vizagapatam Agency) were continued with good results. Necessary data are being collected for formulating a general scheme of anti-malarial work in the Agency. A very limited anti-malarial staff was sanctioned in the Papanasam Hydro-electric project scheme. The question of increasing the staff is under consideration.

Routine weeding of irrigation channels in Siruguppa (Bellary district) was carried on. An approved scheme of anti-malarial works was carried out in Hospet municipality and the results were satisfactory.

The anti-malarial works carried out from the Government of India grant in 1935-36 were maintained in Ramnad (Rameswaram), Nellore, and Chingleput districts. The special staff employed by the Chingleput District Board was recently abolished, and the work of maintenance suffers.

Oiling and filling up of ponds, pits and marshes were carried out in Vizagapatam municipality, Rameswaram Island (Ramnad) and Vriddhachalam (South Arcot). Anti-larval measures were started in Kodur and Kothakodur of Nellore district.

The Rockefeller Foundation Organization and the Malaria Institute of India unit in co-ordination with the Public Health Department carried out some preliminary investigations, and as a result an organized scheme of malaria investigation and control in three selected areas of the Province at Pattukkottai, Wynaad and Ennore with the aid of a half contributory grant from the Indian Research Fund Association, has been started.

(i) At Pattukkottai (Tanjore district), irrigation malaria is the problem. *A. culicifacies* seems to be the main carrier—the important breeding places being irrigation channels, burrow pits and wells. Fixing

of water-tight calco gates for the irrigation channels has been taken up. The Public Works Department has filled up or drained most of their burrow pits and issued orders for the prevention of formation of burrow pits in future. In a demonstration area irregular and badly aligned field channels have been properly realigned, with the hope of extending this work of water-tidiness to other localities and getting the co-operation of the ryots. A central larvicidal fish nursery is being constructed for rearing larvicidal fish required for distribution in wells.

(ii) In Wynaad, foot-hill malaria is the problem. *A. fluviatilis* appears to be the only carrier, the breeding places being paddy field drains and hill streams. Planting of *Tithonia diversifolia*, screw pine, etc., to give shade in the course of water channels has been started, on an experimental scale. Herbage packing has also been attempted in Sultan's Battery and Kalpatta.

(iii) In Ennore, *A. culicifacies* breeds in casuarina pits. Distribution of gambusia was started. Certain practical difficulties were noticed during the trials which have indicated that this method of control may not be enough by itself. Therefore, further study is being carried on to chalk out additional lines of attack.

71. *Quinine distribution*.—For the rural population scattered over a wide area, free quinine distribution scheme serves as the main relief. The coastal area of Vizagapatam district and parts of Nellore and Anantapur districts suffered from epidemic outbreaks in 1938. Free quinine distribution was extended in time. Nearly 1,500 villages are being benefited by the provincial scheme of free quinine distribution. A quantity of about 1,800 lb. of quinine was distributed during the year and about 140,000 persons actually received the treatment among over a million and a half benefited by the scheme. The Government of India free gift of quinine was also distributed. Quinine was also sold at reduced rates. New additional agencies, e.g., the village headmen and the Board or Government School-masters were appointed in some places for selling quinine. Yet the benefits of quinine distribution have not been fully availed of by the public and more propaganda is needed to make the drug popular.

72. *Anti-mosquito campaign*.—The "malaria sense or rather the mosquito sense" of the public has been awakened throughout the Province. A general note on the institution of anti-mosquito measures in municipalities was circularized. Successful results have accrued wherever anti-mosquito campaigns were organized and supervised properly.

FAIRS AND FESTIVALS.

73. There were 785 festivals during the year, of which 748 were major and 37 minor. Fifty-five festivals were celebrated in municipal areas and the rest in rural areas. The local bodies concerned undertook the responsibility for the sanitary arrangements which were carried out under the control and supervision of the respective health staff. In municipalities without Health Officers, District Health Officers were consulted.

The arrangements were entirely financed by local bodies out of their general revenues. In the case of cattle fairs, the local body concerned had a substantial income from the fairs. In the case of festivals, the

income was negligible, except in those instances where pilgrim-tax was levied. In 118 cases local bodies secured contributions from the temple authorities concerned towards the cost of the arrangements.

With the experience of the past 14 years, the sanitary arrangements on these occasions have become almost standardized. The health staff are able to deal with the large congregations in a satisfactory manner. In a few instances, local bodies did not carry out in full the recommendations made by the Health Department, on the usual plea of financial difficulties. The importance of attending to such gatherings has been stressed on them and they are being persuaded to sanction the recommendations in full. In one or two instances, delay in sanction handicapped the health staff in carrying out the arrangements in time. It is expected that with the passing of the Public Health Act, most of these defects will be rectified.

74. All the festivals have been conducted successfully and what is more important without epidemics, the solitary exception being Bhadrachallam. Cholera broke out at Bhadrachallam towards the close of the festival. Although it was brought under control in the festival area as quickly as possible, the returning pilgrims slowly spread the infection to East and West Godavari districts from where it travelled to the neighbouring districts also. To prevent a recurrence of such untoward developments, proposals have been made for more effective arrangements at this festival.

The great Mahodayam festival which generally comes off once in about 20 to 30 years took place on 31st January 1938 in several sea-side centres in the Province, the most important among them being Point Calimere in Tanjore district, Rameswaram and Dhanushkodi in Ramnad district, and Mahabalipuram in Chingleput district. Elaborate sanitary arrangements were made by the local bodies concerned under the control of the health staff. The festival passed off without any outbreak of cholera though the disease was prevalent in an epidemic form in Tanjore district at the time of the festival.

75. It is pleasing to record that there was the closest co-operation between the Police, the Railway Authorities and the health staff in all festivals. In almost all major festivals, the services of scouts and other volunteers were fully utilized by the health staff in the control of the sanitary arrangements.

RURAL SANITATION CAMPAIGN.

76. There are six rural sanitation units, four permanent and two temporary. The unit in Tinnevely district was transferred to Malabar in April 1938 and the unit in Ramnad district to Guntur in October 1938. At the end of the year, the six units were working in the districts of Tanjore, Malabar, Kurnool, Nellore, the Nilgiris and Guntur. The District Boards of Nellore, Kurnool and Guntur have appointed so sanitation maistris to assist the unit staff in the matter of construction of public and private latrines.

77. The activities of the Rural Sanitation Campaign were directed mainly towards the control of the hookworm infection and the prevention of soil pollution.

Hookworm survey.—Routine examination of stools was continued during the year under report. On the whole, 9,567 specimens were

examined, of which 3,702 specimens were positive to hookworm, giving an infection rate of 38.7 per cent, the rate in individual districts varying from 10.6 per cent in Nellore to 81.7 per cent in Tanjore.

Propaganda.—All the units except the one at Kurnool are equipped with portable cinema equipments and films. Ninety-six cinema shows, 671 magic lantern demonstrations and 1,195 talks with hookworm charts were conducted by the staff of the six units to a total audience of about 2½ lakhs. About 27,000 pamphlets also were distributed.

Mass treatment.—One hundred and ninety-seven thousand eight hundred and ninety-five treatments were given, of which 54,284 were given by the Rural Sanitation Health Officers and the rest by the Medical Officers in charge of hospitals and dispensaries.

Provision of latrines.—Five hundred and forty-four latrine seats were put up and 106 latrine seats were either repaired or reconstructed. Most of the work was done in the districts of Kurnool, the Nilgiris, Nellore and Ramnad. The local bodies in these districts co-operated with the units by providing necessary funds.

The units endeavoured their best in introducing borehole latrines in private premises. Squatting slabs for borehole latrines were given either at half-cost or at concession rates in the districts of Ramnad, Guntur, Malabar, Tanjore, the Nilgiris, Nellore and Kurnool; the other half of the cost of the slabs was met either by the local bodies or from the funds of the Government of India grant for Rural Development vested in District Collectors.

78. The activities in the Province during the year comprise 169,021 treatments, 10,194 lectures, 2,795 magic lantern demonstrations, 137 cinema shows and 388 exhibitions to a total audience of about 15 lakhs. 679 public latrine seats and 12,255 private latrine seats were constructed and 1,856 seats were either repaired or reconstructed during the year. The total amount allotted by all the local bodies for rural sanitation work was Rs. 1,32,342.

The interest evinced by the local bodies in the matter of soil sanitation work in the districts of Coimbatore, East Godavari and West Godavari as judged by the number of public and private latrines constructed is commendable. The local bodies in East Godavari district alone have spent Rs. 14,795-3-0 for this work.

79. Public latrines constructed from the Government of India grant for Rural Development during the years 1935-36 and 1936-37 were satisfactorily maintained in all the districts except Chittoor, North Arcot, Trichinopoly, Madurai, Kistna, Bellary, Vizagapatam and Kurnool. It need hardly be stressed that the local bodies in these districts should maintain them properly by appointing the requisite number of maistris and scavengers, and should also take steps to extend this scheme gradually throughout the district.

HEALTH PROPAGANDA.

80. The materials required for carrying out propaganda work are held in stock in the Propaganda section of the office of the Director of Public Health, and are supplied on indents from local bodies, health staff and others. The leaflets, pamphlets and posters are sold and magic lantern

slides and cinema films are lent out on hire. The temporary reduction in the hire charges of cinema films from Rs. 5 to Rs. 2 per reel per week has been made permanent with effect from 16th December 1938. This reduction, it is hoped, will be an inducement for the local bodies and voluntary agencies to utilize the cinema equipment to a greater extent in future.

81. One hundred and eleven leaflets and pamphlets and 24 posters on different subjects have so far been issued. During the year under report, new propaganda literature was prepared and issued as per details given below:—(1) A set of 37 posters on child welfare and maternity in the form of a story entitled "Sita and Nagamma" has been issued in English, Tamil, Telugu, Malayalam and Kanarese; (2) twenty-four Health Maxims in Tamil; (3) a set of three book-marks in cards and paper in different colours on "FOOD AND NUTRITION."

During the year, four cinema films, a set of magic lantern slides on rural reconstruction, and artistic models were purchased, added to the existing stock, and loaned to voluntary associations and local bodies. Sixty slides each of 6½" × 4½" on six different subjects, 10 in each subject were prepared, attractively coloured and were displayed in a special illuminated cabinet at the All-India Khadi and Swadeshi Exhibition, 1938-39, at Madras.

82. The District Boards of Nellore, Cuddapah, Chittoor, Coimbatore, Guntur, Godavari East, and Tanjore have mobile propaganda units equipped with cinema machines, magic lanterns, etc. The motor van in Nellore district was under repairs during the year. It is proposed to have an additional unit in Tanjore district and also to start similar units in the districts of Salem and South Kanara. Ballad singers for health propaganda were continued to be employed in Kistna district.

83. Since the opening of a Broadcasting station at Madras by the All-India Radio, the Public Health Department participated in the broadcasting programmes by contributing short talks on public health subjects. During the year, 27 talks on public health subjects were broadcast through the All-India Radio Station at Madras. Weekly bulletins on the public health conditions of the Province and special publicity as to the condition of public health at places where important festivals were held so as to warn intending pilgrims about the prevalence of any epidemic, were regularly published in the daily local newspapers and through the Broadcasting Station, Madras.

84. The health weeks were celebrated in most of the districts and municipalities in the Province. They afforded considerable opportunity to focus public attention and for carrying out intensive propaganda on public health matters. A separate report on the health weeks will be submitted to Government. The Public Health Department participated in the All-India Khadi and Swadeshi Exhibition at Congress House held from the middle of December 1938 to the middle of January 1939. The health show was very popular and educative.

The various activities under propaganda during the year were as follows:—29,115 lectures with magic lantern demonstrations, 26,462 lectures, 144,672 short talks, 1,737 cinema shows, 606 health dramas, and

1,919 health exhibitions. It was estimated that a total audience of 9,500,000 attended these functions.

The health propaganda work in municipal towns shows a general improvement, when compared with the previous year. It has, however, to be remarked that the outturn of propaganda work in the municipalities of Anantapur, Chicacole, Chirala, Chittoor, Narasaraopet, Ongole, Palamcottah, Tadpatri, Villupuram and Walajapet was poor. It is hoped that these municipalities will realize the importance of health propaganda and pay greater attention in future to this branch of public health work.

85. The financial statement required in G.O. Ms. No. 748, P.H., dated 20th March 1929, is furnished in Annexure C.

POONAMALLEE HEALTH UNIT.

86. The health unit which was sanctioned for five years from October 1935 has now completed the third year of its existence. It continues to do very useful work and the results obtained are satisfactory and encouraging. The villagers have now begun to realize the value of intensive health work done by the unit and are gradually becoming "health conscious." The cost of the unit is met partly from the Government of India grant for Rural Development and partly by the Rockefeller Foundation of America.

87. Maternity and child welfare work is an important branch of the health unit work and is very much appreciated by the public. In connection with ante-natal and infant welfare work, 314 clinics were held at six centres with an attendance of 1,982 ante-natal cases, 3,610 nursing mothers, 2,045 infants, and 2,875 pre-school children. During the year, 25,701 house visits were made by the woman medical officer and the health visitors. The health unit midwives conducted 1,352 deliveries, representing 70.1 per cent of the live births as against 67.4 in the previous year. Taking into consideration, the number of labour cases conducted by two other qualified midwives in the area, the percentage of cases that received skilled aid at birth comes to 80.7. Besides attending to confinements, the midwives made 17,839 ante-natal and 10,838 post-natal visits as compared with 17,110 ante-natal and 9,671 post-natal visits in the previous year.

88. With a view to educating the people in matters of health, the staff conducted 66 cinema shows, 281 magic lantern demonstrations, 466 lectures without lanterns, and 9,675 informal talks on various health subjects. The total attendance is estimated at 153,881. Thirteen health exhibitions were held in connection with Health Week celebrations and festivals and 24,950 leaflets on health subjects were distributed.

89. The health inspectors inspected 9,296 houses during the year and had 2,070 backyards cleaned, 973 fly-breeding places and 463 mosquito-breeding places cleared, 115 borehole latrines put up and 137 soakage pits constructed. As an off-shoot of this work, school boys were made to interest themselves in keeping their houses and backyards clean.

90. In order to provide wholesome drinking water to villagers six borewells were constructed during the year. There was great demand for such

borewells and the villagers offered their voluntary services for the construction of borewells. The cost of borewells was met from the contribution of Rs. 5,000 from the Chingleput District Board.

91. During the year hookworm treatment was given to 1,213 individuals by the health unit staff and 728 cases were referred for treatment at the dispensaries. The construction of borehole latrines in private houses was encouraged by selling concrete slabs at one-third cost.

92. The birth-rate based on estimated population was 40.48 per mille as against 39.53 in the previous year. There has been a definite fall in the death-rate from 26.05 per mille in 1937 to 23.51 in 1938, the quinquennial average rate being 24.89. The infantile mortality rate has also considerably decreased from 184.57 per 1,000 live births in the previous year to 159.75 during the year under report. There was a fall in the maternal mortality rate from 6.74 per 1,000 births in 1937 to 4.98 in 1938. The infantile and maternal rates are the lowest recorded since the health unit was started. The epidemic of cholera of the previous year continued during the year and caused 8 attacks and 4 deaths. Disinfection of houses, chlorination of all drinking-water sources and 508 anti-cholera inoculations were promptly done and the epidemic was soon brought under control. There were 42 cases of smallpox with 8 deaths, some being imported cases. Vaccination was carried out in an intensive scale, the total number performed during the year being 10,483.

93. The uniformly good work turned out by the health unit has begun to attract the attention of those interested in rural development and public health improvements. The unit is also serving a useful purpose as a demonstration centre and training ground for public health workers and for those who are being trained in public health work.

PORT HEALTH ADMINISTRATION.

94. On 1st April 1938, the Government of India took over direct control of the two other major ports of Cochin and Vizagapatam. The Public Health Administration of minor ports continued to be under the control of the Director of Public Health. The Assistant Directors of Public Health inspected the following ports in the course of their routine inspections: Vizagapatam, Cuddalore, Negapatam, Tuticorin, Calicut, Cannanore, Mangalore.

The condition of accommodation and other conveniences in ports with overseas passenger traffic was attended to and defects set right through the Municipal Health Officers concerned.

A brief summary of the health work at the ports is appended in Annexure H, as desired by the Public Health Commissioner with the Government of India.

RURAL WATER-SUPPLY.

95. During the previous year the Government announced their policy of giving protected water-supply to every village in the Province in the course of ten years. For this purpose, the Government have constituted a non-lapsing initial grant of Rs. 15 lakhs. A comprehensive programme indicating the order in which the villages have to be provided with protected water-supply within the ten year period has been drawn up for

approval of Government. In the classification of villages, priority has been given to villages which suffer from perennial or partial scarcity of water; next in order come villages which are centres of important fairs and festivals; next those in which water-borne diseases are endemic and epidemic and lastly those villages where the existing water-supplies, though sufficient, require protection. Orders approving the programme have been received in the case of five districts, viz., Tanjore, Trichinopoly, Ramnad, West Godavari and Anantapur districts. Government's approval is awaited as regards the programmes for the other districts excepting in the case of Malabar in respect of which the programme has, on account of the peculiar conditions of the district, been deferred pending the results of experimental investigation regarding the nature of protection of the water-supplies to be provided.

A disconcerting feature in giving protected water-supplies in certain districts, notably Nellore and some of the Ceded districts, is the presence of fluorides in toxic doses in ground water. Intensive investigation on this subject is being carried out by the Director of the King Institute.

In the execution of the programme of rural water-supplies, difficulty has been experienced on account of lack of equipment for the sinking of bore wells. Government have since sanctioned the manufacture of fifteen handboring sets and there is every reason to hope that when these are ready the work could be carried out more expeditiously than in the past.

MATERNITY AND CHILD WELFARE.

96. Maternity and child welfare work in this Province has again progressed steadily during the year under report.

Maternity and child-welfare services.—Forty women medical officers, 42 health visitors, and 439 midwives worked in approved schemes under local boards and municipalities as against 32 women medical officers, 17 health visitors, and 351 midwives in 1937. Seven women medical officers attended the post-graduate course held during the year.

The Corporation of Madras has accepted the proposals of the ad hoc committee appointed to reorganize its maternity and child welfare work. The step taken by them brings their work more into line with the policy adopted by Government and the increase in the strength of the medical and health visiting staff by 8 women medical officers and 12 health visitors is bound to improve results.

Uniformity in methods of work and in the maintenance of records, registers and returns would not only facilitate review of work undertaken and assessment of its value, but also render the centres of the Corporation which have extensive facilities for the purpose more suitable for the training of pupil-health visitors, and of women medical officers during their post-graduate course in maternity and child welfare.

The municipality of Ellore has not yet appointed a woman medical officer to a vacancy caused in 1936.

97. *Allotment by local bodies.*—Local boards and municipalities have allotted Rs. 1,06,947 and Rs. 3,12,460, respectively, for maternity and

child welfare work as against Rs. 99,931 and Rs. 2,92,646 in 1937, while the Corporation of Madras has increased its allotment to Rs. 1,51,967 from Rs. 1,51,616 in the preceding year. One hundred and eight thousand, seven hundred and twenty-one mothers, 8,731 ante-natal cases, 53,946 labour cases, 46,339 infants and 37,439 pre-school children came under the care of the staff. In all 9,257 clinics were held at which the attendance was 66,106 ante-natal cases, 83,638 infants, 96,981 pre-school children and 53,638 nursing mothers. Women medical officers, health visitors and midwives each paid 47,915, 304,707 and 756,362 home visits respectively. Health talks were given in 529 girls' schools at which the audience was 30,348.

98. *The training school for Health Visitors.*—An important step taken by Government during the year was the opening of a training school for health visitors, as the Madras Branch of the Indian Red Cross Society closed the institution they had for the same purpose. There is no doubt that work organized by the department can be improved by the employment of field workers specially trained to meet the purpose for which they are required. The course has been extended by two months and the curriculum of studies has been revised and includes three months' nursing practice at the Prince of Wales Children's Hospital, an experience and training much to be desired for health visitors. The pupils are also sent for practical work at the rural centres in the health unit at Poona-mallee and to the child welfare centres of the Madras Corporation. Seven pupils were admitted in July 1938 and all of them were granted Government stipends. They will complete their course in June 1939.

99. *Investigation of maternal mortality and morbidity.*—The recommendation of the Director of Public Health for the closer investigation of maternal mortality has been given effect to, and forms approved by the committee appointed by Government for the purpose, have been recommended for use in the large maternity hospitals in the City. Forms for use in child welfare centres, dispensaries and district hospitals have also been specified. The data which can thus be collected will be of great help for future investigations.

100. Briefly reviewing the work of this section for the past five years it is noted that not a single step taken by the department in a new branch of its activities has had to be retraced and that progress has been steady throughout. The care and foresight with which principles governing organization and administration were in the first instance laid down, and the consistency with which they have been later upheld have created confidence and stabilized work to a remarkable extent. The recommendations made by the Public Health Advisory Committee, 1939, follow closely the principles enunciated, and already followed, by this Government as regards organization, administration, staff to be employed in the services, and other matters relating to the conduct of child welfare work. It is thus clear that the time of experimentation is past, and that the existing policy should be implemented and pushed forward with all the means at the disposal of both Government and local bodies.

DEPUTATION OF RURAL MEDICAL PRACTITIONERS FOR PUBLIC HEALTH WORK.

101. In 1934, the Government sanctioned a scheme under which the services of Rural Medical Practitioners are to be utilized for public health work. This was put into force in all districts except Malabar and the Nilgiris, in the former case due to want of finance and in the latter case due to the absence of Rural Medical Practitioners. As a trial, two centres were selected for each district and the practitioners concerned were entrusted with public health work in their headquarters and in villages within 5 miles radius of it. In 1936, Government ordered the continuance of the scheme on trial for a further period of two years.

The Rural Medical Practitioners have been attending to Vital Statistics, Maternity and Child Welfare, Rural Sanitation, Festivals and Propaganda in their respective jurisdictions. In some cases they have attended to vaccination work also. On the whole, the results have proved fairly satisfactory. The question of putting the scheme on a permanent basis and extending it gradually to all the Rural Medical Practitioners in the Province is separately under the consideration of Government.

To enable the Rural Medical Practitioners to discharge their public health work more satisfactorily and in pursuance of a resolution passed at the Conference of Public Health Ministers, it was decided that they should be given a special course of training on public health. A syllabus is accordingly drawn up for giving the necessary training. The first batch is to be taken up early in January 1939. The scheme, if worked in a compact and workable jurisdiction with proper personnel who had the necessary training in public health work and who have the aptitude and enthusiasm for such work, will certainly enhance the quality of the public health in the rural areas.

MEDICAL INSPECTION OF SCHOOLS.

102. Except in Madras City, there was no organization for regular school medical inspection in the rest of the Province. Health Officers however inspect schools as part of their routine duties and in connexion with applications for sanitary certificates for purposes of recognition by the Education Department. A scheme for systematic school medical inspection including facilities for treatment was submitted to Government and is under their consideration.

FACTORIES.

103. The expansion of industries during the course of last two decades has brought an increase in the number of factories, workshops and work places in the Province. The development of electric power by giving scope for starting a number of large as well of small scale industries has contributed to the augmentation of the number of factories to a considerable extent. Hence the number of factories which come under the purview of the Health Officers has increased to a considerable extent during the course of a few years. While the number of registered factories during 1935 was about 1,500 it has increased to 1,774 during the year under report.

104. *The separation of industrial and residential areas.*—There are statutory provisions both in the Local Boards Act and in the District Municipalities Act to regulate the establishment of factories in order that such factories, workshops, or workplaces may not prove to be sources of nuisance to the neighbourhood. Local bodies have to permit the construction of factories, workshops or workplaces and before granting such permission have to consult the Inspector of Factories and also the Health Officer of the local area. The Government also have directed Municipal Councils and Panchayats to set apart industrial areas in their jurisdiction, in consultation with their Health Officers and the Director of Town Planning so as to check the indiscriminate growth of factories in the midst of residential areas.

These rules were not effectively enforced by local bodies. Hence power has now been taken under the Public Health Act for reservation of areas for residential purposes and for control of buildings erected therein. In these areas no fresh factory, workshop or workplace can come into existence and the operations of existing factories will be suitably controlled.

105. *Inspections and sanitary control.*—The health and safety of the workers in large factories which come under the scope of the Indian Factories Act are safeguarded by the provisions contained in the Indian Factories Act and the rules framed thereunder. The sanitary conditions of the factories, workshops and workplaces are receiving the constant attention of the provincial health staff. The Health Officers, who are additional Inspectors of Factories in their jurisdiction, inspect all the registered factories periodically and bring to the notice of the Factory Inspector any sanitary defects noticed and get matters rectified. The smaller factories which are administered by the Local Boards Act are also inspected by the health staff. During the course of their inspections, improvements are suggested and defects in sanitary conditions attended to through the Executive Officers of the respective Local Boards.

Out of a total of 1,774 factories the District Health Officers inspected 531 and the Municipal Health Officers 308 during the year.

MINES.

106. Mining was carried on in the districts of Anantapur, Chingleput, Coimbatore, Cuddapah, Kistna, Kurnool, Nellore, The Nilgiris, Salem, Trichinopoly and Vizagapatam. The District Health Officers of these districts inspected altogether 60 mines during the year and sent their inspection notes to the Collectors. The reports of the District Health Officers of Chingleput, Coimbatore, Kistna, Salem and Nellore, who are also ex-officio Inspectors of Mines, were sent to the Chief Inspector of Mines, Dhanbad. The sanitary defects pointed out in these reports are being gradually remedied by the owners of the mines.

FOOD ADULTERATION.

107. The Prevention of Adulteration Act was extended to 7 more municipalities and 4 more panchayats during the year, thus bringing the total number of local bodies working the Act to 93 including Madras

City. In this year, a large number of municipalities have sent samples in excess of their prescribed monthly quota; in particular, Madura has increased it to 50 samples. About 8,000 samples were analysed during the year and 35 per cent of which were found adulterated.

108. During the year, rules for the prevention of adulteration of coffee were issued in G.O. No. 3330, P.H., dated 19th September 1938. The most commonly sampled articles being as usual ghee, milk, butter and gingelly oil. Though gross adulteration continues in the first 3 commodities the percentage of adulteration is perceptibly less than it was in previous years. There was a general improvement in the average fine imposed.

HOUSING.

109. *Municipal areas.*—The construction and reconstruction of buildings in municipal areas are controlled by the provisions contained in the Madras District Municipalities Act and the Madras Town-Planning Act. The local Government have framed rules for the control of building sites and for the construction of buildings, wells, house drains, cesspools, septic tanks and latrines connected therewith. These rules are comprehensive enough to guide the local authorities in regulating the construction of buildings in the municipal areas in an orderly manner so as to ensure that the areas converted into buildings are developed in such a manner as to secure proper sanitary conditions, amenity and convenience to the present and future inhabitants of the place.

110. *Non-municipal areas.*—According to the provisions contained in the Local Boards Act and the Madras Town-Planning Act the local Government may extend any of the provisions of the Madras City Municipal Act, Madras District Municipalities Act or the Madras Town-Planning Act to any local area and may declare such extension to be subject to such restrictions and modifications as they think fit. Advantage has been taken of these provisions by some of the non-municipal local authorities and the provisions of the Madras District Municipalities Act in regard to buildings and the Madras Town-Planning Act have been extended to certain panchayats also. During the year 1937-38, the Town-Planning Act was in force in 139 towns.

111. But the progress so far made has touched only the fringe of the problem of housing in rural areas. Time has come for a bolder policy to be adopted to put a stop to the haphazard method of constructing houses to exercise effective control over insanitary buildings and to relieve congestion and overcrowding both in municipal and non-municipal areas.

Provision has been made in the Madras Public Health Act, 1939 (Madras Act III of 1939), for the improvement of housing conditions in the Province. The following are some of the important provisions: (1) Reservation of areas for residential purposes, (2) control over insanitary buildings, (3) abatement of overcrowding, (4) prohibition of occupation in urban areas of new buildings without adequate water-supply and sufficient means of drainage and (5) for provision of sanitary conveniences in buildings intended for human habitation.

112. *Co-operative building societies.*—The formation of co-operative building societies is being encouraged by Government by advancing loans and there are several such societies in existence at present.

FAMINE.

113. There was famine in the districts of Anantapur, Kurnool and Bellary. About 31 famine works were started in these districts for affording relief to the suffering poor. Temporary Health Inspectors were appointed in all the districts to supervise the sanitary arrangements in these areas. The Director of Public Health inspected the famine camps and gave necessary instructions to the Public Health and Medical staff. Though stray cases of cholera occurred in a few villages near some of the famine camps in Bellary and Anantapur districts, the vigilant and effective precautionary measures adopted by the staff prevented the spread of the disease into the camps. No abnormal mortality from any disease was reported from the famine-stricken areas. On the whole, the public health in the famine camps was satisfactory. The relief works were closed by the middle of October 1938.

SANITARY WORKS (CIVIL).

114. The following is a summary of a report furnished by the Sanitary Engineer to Government of Madras, regarding sanitary works in the Province:—

Water-supply—(i) *Municipalities.*—The water-supply scheme for Virudunagar came into operation during the year, bringing the total number of municipalities with protected water-supply to 43 from 42 in the previous year. New schemes for water-supply, improvements or extensions or both to the existing ones, were under execution in sixteen municipalities. The plans and estimates for the water-supply schemes in four municipalities were under preparation. The investigation of water-supply schemes for Tanjore was completed, while that for Tirupati-Tiruchanur was in progress.

(ii) *Rural areas.*—The water-supply schemes for Arkonam, Tiruvallur, Batlagundu, Manapparai, Karamadi and Sembiam were under execution. The investigation of the schemes for Arantangi, Sivaganga and Pithapuram was completed.

115. *Drainage.*—No new drainage scheme came into existence during the year. Drainage schemes for nine municipalities were under execution. Plans and estimates for drainage schemes in nine municipalities and in Madanapalle were being prepared. The investigation of the schemes for Chidambaram and Cocanada was completed, while that for Udumalpet, Calicut, Saidapet and Rasipuram was in progress during the year.

PUBLIC HEALTH ACT.

116. Statutory provisions relating to Public Health administration were vague and unsatisfactory and were embodied in more than one Act. They were also enacted at a time when the problem of public health was not so much to the forefront as at present. In the interests of efficient administration it was thought necessary that there should be a compact

Public Health Act embodying all the important public health provisions under the various Acts with suitable modifications and additions. Such a compact Public Health Bill was prepared by this office and after careful scrutiny by Government was published and introduced in the Madras Legislative Assembly. It has now been passed into law. The Madras Public Health Act, 1939 (Madras Act III of 1939), is a very important measure, the first of its kind in India. It contains several provisions as are considered essential for the advancement of public health in this Province.

VACCINATION.

117. The statistics of vaccinations done during the ten years period 1929-1930 to 1938-39 are given in the sub-joined statement.

Years.	Primary vaccination.			Re-vaccination.			Total.		
	Operations.	Successful.	Case success rate per cent.	Operations.	Successful.	Case success rate per cent.	Operations	Successful.	Case success rate per cent.
1929-30 ...	1,486,255	1,314,603	95.9	653,066	186,222	32.1	2,139,321	1,500,825	78.9
1930-31 ...	1,465,362	1,311,491	97.0	669,271	185,784	31.9	2,134,633	1,497,275	77.4
1931-32 ..	1,503,024	1,385,151	98.4	597,813	192,655	37.0	2,105,837	1,577,806	81.8
1932-33 ..	1,406,717	1,295,209	98.6	1,352,558	452,899	38.6	2,759,275	1,748,108	70.3
1933-34 ...	1,297,829	1,137,091	96.7	3,254,926	876,647	33.5	4,552,755	2,013,738	53.1
1934-35 ...	1,381,176	1,191,073	95.5	3,842,744	828,435	26.5	5,223,920	2,017,508	46.3
1935-36 ...	1,418,663	1,226,315	95.5	2,857,227	571,856	24.9	4,275,890	1,798,171	50.2
1936-37 ...	1,403,254	1,195,078	94.6	2,085,722	374,082	22.2	3,488,976	1,569,160	53.0
1937-38 ...	1,466,503	1,271,203	96.7	2,193,219	368,095	20.9	3,659,722	1,639,298	53.3
1938-39 ...	1,481,847	1,296,892	87.9	2,590,449	456,320	33.6	4,072,296	1,753,212	53.8

There was an increase of nearly 413,000 in the number of vaccinations done in 1938-39 as compared with the previous year. Although the increase was contributed mostly by re-vaccinations, the increase in primary and secondary vaccinations is not insignificant.

118. As in previous years, vaccination work was suspended during the hot months and this period was utilized by the health staff for intensive vital statistical work and the detection of unregistered unprotected cases.

119. *Vaccination in districts.*—The total number of vaccinations done in rural areas during 1938-39 was 3,154,847 which is made up of 1,320,089 primary vaccinations and 1,834,758 re-vaccinations. There was an increase of 155,459 in the total vaccinations compared with the previous year.

The number of children under one year of age successfully vaccinated was 561,872 as against 569,226 in the previous year. The ratio of successful infantile vaccination to total births varied from 27.1 in West Godavari district to 57.9 in Madura district.

The rate of successful vaccination per mille of population ranged from 29.0 in Guntur to 54.9 in the Nilgiris.

Vaccination is compulsory throughout the province, the only exceptions being the Agency areas and about 100 villages in Kallakurchi taluk of

South Arcot district and Attapadi valley in Walluvanad taluk in Malabar district.

120. *Vaccination in municipalities.*—The total number of vaccinations performed in municipal areas was 841,538 which is an increase of 232,688 compared with the corresponding figure of the previous year. Primary vaccinations done during the year amounted to 152,232 and re-vaccinations 689,306.

The number of children under one year of age successfully vaccinated was 94,270 against 92,224 in the previous year. The proportion of successful infantile vaccination to total births varied from 20.3 per cent in Tiruvannamalai to 98.5 per cent in Sivakasi.

The ratio of successful vaccinations to the total population ranged from 25.7 in Cannanore to 148.9 per 1,000 population in Udipi.

121. *General.*—The statistics of successful vaccinations are classified below according to the different agencies :—

Staff.	Number of successful vaccinations.		Total.	Percentage of success.	
	Primary vaccinations.	Re-vaccinations.		Primary vaccinations.	Re-vaccinations.
Vaccinators—					
Local Fund	1,133,030	316,584	1,449,614	97.7	24.1
Government	7,562	2,315	9,877	91.9	28.6
Municipal	147,005	116,938	264,843	99.4	21.1
Cantonment	4,553	12,242	16,795	94.2	39.7
Medical subordinates and Port Health Officers.	58	5,687	5,745	100.0	58.8
Railways	1,654	869	2,523	98.0	19.9
Poonamallee Health Unit	1,805	1,657	3,462	97.7	21.9
Cauvery-Mettur Project	226	14	240	98.3	4.8
Dispensaries	99	14	113	98.0	87.5
Total	1,296,892	456,320	1,753,212	97.9	23.6

It should not be inferred from the above statistics that, out of the total number of 4.07 million vaccinations done during the year, 1.75 million vaccinations only were successful and the remaining 2.32 million cases were failures. Cases of re-vaccinations done in floating populations and in persons who get themselves vaccinated shortly before embarking from the ports are not available for verification and are therefore to be necessarily excluded as the results of vaccination are not known. The statistics in the tabular statement relate only to those cases actually verified by the staffs.

There is a close approximation in the success rates among the primary vaccination done by the several agencies, the exception to this being the figures relating to Government vaccinators' work. These men work in the agency areas which do not have facilities of rapid postal communications; further the villages are in most instances very sparsely populated and situated at considerable distances from each other. Deterioration of the lymph to some extent is inevitable on account of the

above factors and this explains the lower success rate in the vaccination done by Government vaccinators.

Another feature noticed in the above table is the disparity in the success rate among the re-vaccinations done by the several agencies; in this connection, it may also be pointed out that similar disparities obtain in the re-vaccinations done in the same districts or towns and by the same vaccinators. The reasons for these are two fold, viz., first that the vaccinated persons already possess varying grades of immunity and secondly, that, in the existing circumstances, the verifying staffs are not in a position to examine the reactions within the first few days of re-vaccination; these reactions really indicate successful re-vaccination; but the duration of these being short, they disappear by the time the cases are verified. As a result, a large proportion of cases which should really be classified as successful is treated as failures.

122. A summary of the vaccination establishments in the different cadres is given below:—

Year.	Health Inspectors.	Vaccinators.			Total.
		I class.	II class.	Probationary.	
1937-38	266	267	554	1	822
1938-39	266	275	557	1	833
Increase	...	+8	+3	...	+11

It is gratifying that the recommendations repeatedly made from this office have resulted in the virtual extinction of the probationary grade of vaccinators and an increase in the establishment of first-class vaccinators.

123. A comparative statement of expenditure incurred on the several agencies relating to vaccination is given below:—

Establishment.	Expenditure 1937-38.	Expenditure 1938-39.	Average cost of each successful case.	
(1)	(2)	(3)	1937-38.	1938-39.
	RS.	RS.	RS. A. P.	RS. A. P.
Rural areas—				
Government establishments—				
Vaccinators and Health Inspectors.	1,80,800	1,84,900	...	...
Local Fund	4,15,600	4,11,600	...	...
Total for Rural areas ...	5,96,400	5,96,500	0 6 10	0 6 6
Municipal	1,06,500	1,15,100	0 7 8	0 8 11
Cantonment	5,300	4,900	0 7 1	0 4 9
Poonamalle Health Unit...	4,700	1,500	1 14 6	0 7 2
Total	7,12,900	7,18,000	0 7 0	0 8 7

One-third of the expenditure on the establishment of Health Inspectors is debited to vaccination.

The average cost of each successful case was lowest in Malabar (Re. 0-4-9) and highest in the Nilgiris (Rs. 1-2-4). In municipalities, it varied from Re. 0-1-11 in Kurnool to Rs. 1-6-6 in Coonoor.

124. *Vaccination Inspections.*—The number of cases inspected by the District Health Officers varied from 337 in Nellore district to 7,759 in Kurnool district. 25 Municipal Health Officers, 15 Medical Officers and 36 Health Inspectors failed to verify the prescribed minima.

125. An abstract of the information furnished by the Health Officers regarding the vaccinal condition of nearly 5,000 cases of smallpox reported in the year under review is given below:—

	Number of cases.	Number of deaths.	Mortality rate.
	(1)	(2)	(3)
			PER CENT.
Unvaccinated or unsuccessfully vaccinated	2,033	524	25.78
Successfully vaccinated	2,897	56	1.87

Further testimony of the advantage of vaccination against smallpox is unnecessary.

PUBLIC HEALTH ESTABLISHMENT AND PERSONAL PROCEEDINGS.

126. The strength of the Public Health Department on 31st December 1938 was:—

1. Director of Public Health ..	1	
2. Assistant Directors of Public Health	4	These include the post of the Professor of Hygiene.
3. Assistant Directress of Public Health	1	
4. First-class Health Officers ..	61	These include the two temporary posts of Health Officers sanctioned during the year for Anti-malarial operations at Pattukottai and Kalpatta, and the post of the Health Officer and the two Assistant Health Officers of the Madras Corporation, which are not included in the Madras Public Health Service.
5. Second-class Health Officers ..	58	These include the two posts of Municipal Health Officers for Vaniyambadi and Tiruppur and one post for Sembiam Panchayat sanctioned during the year on a temporary basis.
6. Health Inspectors	279	These include one permanent post of Health Inspector, Singara, two temporary posts of Health Inspectors at Papanasam, Hydro-electric Scheme, one temporary post at Mettur Township and three temporary posts of Health Inspectors sanctioned for anti-malarial work at Pattukottai, Kalpatta and Ennore.

7. Government Vaccinators	..	17	
8. Entomological Assistants	..	3	These include two temporary posts sanctioned for anti-malarial work.
9. Supervisor	..	1	Sanctioned for anti-malarial work.
10. Women Medical Officers	..	2	One as Warden of the Health Visitors' School and the other in the Poonamallee Health Unit.
11. Compounders	..	2	
12. Health Visitors	..	4	Employed in the Poonamallee Health Unit.
13. Midwives	..	9	

127. The posts of two first-class Health Officers, three Health Inspectors, two Entomological Assistants and one Supervisor were sanctioned on a temporary basis in connection with anti-malarial operations at Pattukottai, Kalpatta and Ennore. Three temporary posts of second-class Health Officers for the municipalities of Vaniyambadi and Tiruppur, and Sembiyam Panchayat were also sanctioned. Six posts of Assistant District Health Officers and of 6 peons which were on a temporary basis for a number of years were sanctioned on a permanent basis from 1st April 1938. All the other temporary posts were continued except the post of second-class Health Officer sanctioned for anti-malarial work in Bellary district. One first-class Health Officer who was on Rockefeller Foundation Fellowship finished his course of studies and returned to duty.

128. A Conference of Health Officers in the Province was held in Madras during March 1938 to discuss the various public health problems of the Presidency.

129. The combination of functional distribution of work with territorial jurisdiction for purposes of routine inspection for Assistant Directors of Public Health continued to be in force with gratifying results.

130. During the year one first-class Health Officer and seven Health Inspectors retired, two second-class Health Officers and three Health Inspectors died and one Assistant Director of Public Health, three first-class Health Officers and six Health Inspectors were punished.

131. Lieut.-Col. C. M. Ganapathy, M.C., I.M.S., was on leave from 29th March to 6th October 1938. During his absence the Surgeon-General with the Government of Madras was in charge till 31st August 1938, and Sri R. Adishesha Ayyar, Assistant Director of Public Health, acted as Director of Public Health from 1st September 1938.

CONCLUDING REMARKS.

132. The report reveals the attempt of the Public Health Department to help in the amelioration of the existing conditions and also its progressive realisation of the responsibility to the public for whose benefit it exists. What is being done now is not enough and the Public Health Department will have to work unceasingly until complete control of all avoidable and preventable diseases has been attained and kept up to that pitch for all time. Any beneficial improvement in the health of the people must necessarily depend on their full co-operation and the measure of success achieved will be in proportion to the amount of assistance that will be forthcoming.

133. In spite of the fact that the number of deaths from cholera for the year under review is the smallest during the last five years, the disease still remains the "*bete noire*" of the Public Health Department. With the present scheme for the provision of protected rural water-supply for the whole province and the growing consciousness of the public to health matters, it is hoped that the time is not far off when, short of complete eradication, cholera will be brought under controllable dimensions. It is now the aim of the Public Health Department that an outbreak of cholera among pilgrims should be treated as an exception during fairs and festivals.

134. Deaths from smallpox also indicate a progressive decline consequent on the introduction of compulsory vaccination and re-vaccination. Much leeway still remains to be made up before one can confidently assert that the whole population is immunized; and yet the figures for vaccination and re-vaccination, since their introduction as a compulsory measure, reveal that about a third of the population is protected. One of the reasons that can be put forward for a much larger number not being immunized is the diversion of the regular vaccination staff to epidemic work, which naturally interferes with their legitimate duties. Consequently it appears essential that the permanent vaccination staff should not be utilized for epidemic work for long periods and their return to their normal duties expedited by the entertainment of extra temporary staff to tackle epidemics as soon as convenient.

135. With regard to lack of accurate registration of vital statistics, the Public Health Department has to depend to a considerable extent in the rural areas on unqualified registering agencies. It is considered that with the newly introduced system of training of all Rural Medical Practitioners in Public Health and their consequent employment in health work, even though as part-time officers, would help to reduce the number of ill-defined, obscure and unscientific diagnoses now extant.

136. The Maternity and Child Welfare work, although progressing, requires considerable enlargement. It may be difficult for the local bodies to carry on this activity single handed and therefore some financial help from the Government would give the necessary impetus for its more rapid extension.

137. In spite of all the public health activities, unless and until the economic standard of the generality of people is raised, carrying with it the implication of improvement in their nutrition, the population at large specially the rural, will not be able to withstand the ravages of epidemic diseases. By scientific methods, the incidence of diseases can and will be reduced or controlled, but the improvement of human conditions for resisting them must go hand in hand with public health measures.

138. Experiments are under weigh for evolving methods of control of Malaria of different varieties, namely, the coastal type at Ennore, the irrigation type at Pattukottai, and the foothill type in Wynad.

139. As regards the Public Health Act, its successful administration will have necessarily to depend on two important factors:—

- (a) the willing co-operation of the public;
- (b) the manner in which the Public Health Department will work the Act.

It is unnecessary to emphasize that the present stage of development of the Public Health Department has been based practically on the methods of persuasion hitherto employed by its members. Now that the Public Health Act confers more powers, with their inevitable concomitant of greater responsibility on the officers and staff of the Health Department, it ought to be easy to develop further those very persuasive measures which have been the making of the department.

140. The members of the Public Health Department have carried out their duties satisfactorily.

MADRAS,
13th June 1939.

C. M. GANAPATHY, LIEUT.-COL., I.M.S.,
Director of Public Health.

ANNEXURE A.

Detailed Return of Births and Deaths in the 15 Municipalities of Bellary, Calicut, Cochin, Coimbatore, Cuddalore, Kumbakonam, Madurai, Mangalore, Negapatnam, Salem, Tanjore, Tinnevely, Trichinopoly and Vellore during the year 1938.

Age at the time of death.	(1)	(2)	Infectious diseases.								Fevers.						Respiratory diseases.
			Cholera.	Plague.	Smallpox.	Measles.	Chickenpox.	Typhoid or enteric fever.	Diphtheria.	Others.	Malaria.	Influenza.	Relapsing fever.	Kala Azar.	Rheumatic fever.	Other fevers.	
1	Under one year.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Not exceeding one month.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Over one month and not exceeding 6 months.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Over 6 months and not exceeding 12 months.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total under one year.	27,045	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	One year and under 5 years.	122,037	7	...	20	16	2	36	18	26	11	14	...	...	...	205	7
	5 years and under 10 years.	134,323	9	...	6	10	1	53	8	3	16	14	...	...	...	91	11
	10 years and under 15 years.	127,112	7	...	4	1	...	78	...	...	18	6	...	...	...	53	33
	15 years and under 20 years.	115,008	4	...	3	...	...	90	...	1	22	11	...	...	2	44	192
	20 years and under 25 years.	222,305	13	...	9	1	...	127	...	...	57	13	...	...	4	81	727
	25 years and under 30 years.	189,934	19	...	...	...	...	59	...	...	52	15	...	...	4	77	654
	30 years and under 35 years.	114,986	11	...	...	...	...	27	...	...	43	10	...	...	6	89	508
	35 years and under 40 years.	69,755	8	...	1	...	...	21	...	...	56	9	...	...	15	111	308
	40 years and under 45 years.	49,326	6	...	...	...	...	15	...	...	39	11	...	...	5	156	142
	45 years and upwards.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total for all ages.	1,152,231	84	1	56	39	5	508	28	47	306	111	...	...	39	1,114	2,588
	Rate per 1,000 of population.	...	0.07	0.001	0.005	0.003	0.004	0.44	0.02	0.04	0.27	0.10	...	...	0.03	0.97	2.25

ANNEXURE A—cont.

Detailed Return of Births and Deaths in the 15 Municipalities of Bellary, Calicut, Cocanada, Coimbatore, Conjeevaram, Ouddalore, Kumbakonam, Madura, Mangalore, Negapatam, Salem, Tanjore, Tinnevely, Trichinopoly and Vellore during the year 1938—cont.

Age at the time of death.	Respiratory diseases—cont.		Alimentary system.		Disease of the liver.		Circulatory system.			Genito-urinary diseases excluding venereal diseases.		Venereal diseases.		
	Others.		Dysentery.		Cirrhosis.		Heart disease.			Bright's disease.		Gonorrhoea.		
	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
1 Under one year ...	7	58	1	1	10	1	...	1	...	2	...	...	10	...
2 Not exceeding one month ...	11	79	1	13	31	1	...	...	...	5	...	1	4	...
3 Over one month and not exceeding 6 months ...	237	297	62	159	67	14	9	1	...	6	...	1	8	1
4 Over 6 months and not exceeding 12 months ...	320	210	161	217	23	26	24	1	...	7	1	...	1	5
Total under one year ...	575	644	224	390	131	42	34	3	...	20	1	3	23	1
One year and under 5 years	1,187	393	687	812	36	289	104	10	...	26	33	13	1	...
5 years and under 10 years	259	47	119	37	20	14	20	9	...	14	24	5	...	...
10 years and under 15 years	105	12	51	11	10	10	10	17	...	12	19	6	...	...
15 years and under 20 years	199	15	35	22	30	4	11	30	...	19	7	...	...	...
20 years and under 30 years	292	29	99	139	103	23	22	120	...	82	58	...	...	...
30 years and under 40 years	268	48	128	110	117	50	36	142	...	23	10	...	...	...
40 years and under 50 years	262	81	149	119	116	54	23	188	...	77	32	...	...	...
50 years and under 60 years	214	98	132	122	98	37	28	184	...	101	34	...	...	...
60 years and upwards	146	135	187	152	87	29	2	261	...	129	38	...	...	...
Total for all ages	3,567	1,472	1,791	1,414	748	552	290	964	2	535	185	67	17	14
Rate per 1,000 of population ...	3.10	1.28	1.55	1.23	0.65	0.48	0.25	0.84	0.002	0.46	0.52	0.16	0.08	0.01

ANNEXURE A—cont.

Detailed Return of Births and Deaths in the 15 Municipalities of Bellary, Calicut, Cocanada, Coimbatore, Conjeevaram, Ouddalore, Kumbakonam, Madura, Mangalore, Negapatam, Salem, Tanjore, Tinnevely, Trichinopoly and Vellore during the year 1938—cont.

Age at the time of death.	Diseases of the nervous system.					Accidents of pregnancy and child-birth.			Deficiency diseases.			Malignant diseases.				Diabetes.		
	Others.					Puerperal sepsis.	Abortion.	Other accidents and diseases of pregnancy and parturition.	Beri-Beri.	Rickets.	Others.	Alimentary tract.	Genito-urinary.	Breast.	Other regions.		Ankylostomiasis.	
	(33)	(34)	(35)	(36)	(37)													(38)
1. { Under one year. Not exceeding one month.	250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. { Over one week. Over one month and not exceeding 6 months.	454	...	1	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...
3. { Over 6 months and not exceeding 12 months.	938	...	...	...	2	...	...	...	...	6	26	...	...	1	...	...	...	...
4. { Under one year. Total under one year.	445	...	2	...	3	...	...	...	...	25	16	...	...	...	2	...	...	...
	2,087	...	3	...	6	...	...	...	...	31	45	...	...	1	3	...	...	...
One year and under 5 years	606	1	7	8	13	...	...	...	1	144	29	...	...	1	...	6	8	...
5 years and under 10 years	29	4	19	2	8	...	...	...	1	27	2	...	...	...	...	3	3	...
10 years and under 15 years	1	2	17	15	11	6	...	...	...	5	10	...	...	...	...	1	5	...
15 years and under 20 years	...	3	18	11	16	63	...	...	...	...	...	...	...	...	...	6	2	...
20 years and under 30 years	...	12	25	16	27	169	23	205	12	...	21	...	...	...	...	29	10	...
30 years and under 40 years	...	27	25	8	40	56	13	123	5	1	24	...	...	...	...	35	14	...
40 years and under 50 years	...	24	11	15	63	9	3	9	...	1	19	...	...	...	...	6	4	...
50 years and under 60 years	...	50	7	5	111	...	...	...	6	...	16	...	...	...	...	1	19	...
60 years and upwards	...	94	5	2	247	...	...	...	8	...	8	...	...	...	...	2	1	...
Total for all ages	2,725	227	137	82	542	303	49	429	36	209	176	37	16	8	153	64	272	...
Rate per 1,000 of population	2.37	0.20	0.12	0.07	0.47	0.26	0.04	0.37	0.03	0.18	0.15	0.03	0.01	0.01	0.13	0.06	0.24	...

Detailed Return of Births and Deaths in the 15 Municipalities of Bellary, Chikcut, Cocanadu, Coimbatore, Conjeevaram, Ouddalore, Kumbakonam, Madura, Mangalore, Negapatam, Salem, Tanjore, Tinnevely, Trichinopoly and Vellore during the year 1938—cont.

2018	...
------	-----

† Rate per 1,000 live-births.

* Total births and deaths exclude "still-births."

Statement showing the Number of Deaths and Death-rates from Cholera during 1938 in the Municipalities with and without protected Water-supply.

(a) *Municipalities with protected water-supply.*

Number.	Names of municipalities.	Number of deaths from cholera.	Rate per 1,000 of population.	Number.	Names of municipalities.	Number of deaths from cholera.	Rate per 1,000 of population.
1.	Adōni ...	2	0·66	25.	Nellore ...	10	0·22
2.	Anantapur ...	32	2·12	26.	Ootacamund ...	...	...
3.	Bellary ...	...	...	27.	Palni ...	...	...
4.	Bezvada ...	18	0·30	28.	Palacole ...	14	0·83
5.	Chidambaram ...	13	0·52	29.	Periyakulam ...	...	...
6.	Chingleput ...	...	...	30.	Proddatur ...	6	0·30
7.	Cocanada ...	5	0·08	31.	Rajahmundry ...	25	0·39
8.	Coimbatore ...	10	0·11	32.	Saidapet ...	21	0·64
9.	Conjeeveram ...	2	0·03	33.	Salem ...	2	0·02
10.	Coonoor ...	...	...	34.	Tadpatri ...	7	0·55
11.	Cuddalore ...	47	0·80	35.	Tanjore ...	2	0·03
12.	Cuddapah ...	12	0·53	36.	Tirupati ...	3	0·16
13.	Dindigul ...	...	...	37.	Tiruvannamalai ...	...	...
14.	Elore ...	6	0·10	38.	Trichinopoly ...	4	0·03
15.	Erode ...	...	...	39.	Tuticorin ...	...	...
16.	Gudiyattam ...	1	0·04	40.	Vellore ...	...	...
17.	Guntur ...	27	0·41	41.	Virudhunagar ...	...	...
18.	Kodaikanal ...	...	...	42.	Vizagapatam ...	1	0·02
19.	Kumbakonam ...	3	0·05	43.	Vizianagram ...	1	0·02
20.	Kurnool ...	17	0·48				
21.	Madras ...	36	0·06		Total ...	337	0·13
22.	Madura ...	3	0·02				
23.	Masulipatam ...	3	0·05		Mean rate for 5 years ending with 1937.		0·35
24.	Negapatam ...	4	0·08				

(b) *Municipalities without protected water-supply.*

1. Anakapalle ...	3	0'13	23. Palamcottah	..	..
2. Bimlipatam ...	...	...	24. Palghat	5	0'10
3. Bodinayakkannur.	...	...	25. Peddapuram	2	0'12
4. Calicut	...	...	26. Pollachi	...	...
5. Cannanore	...	...	27. Sivakasi	...	...
6. Chittoor	...	...	28. Srirangam	1	0'04
7. Chicacole	...	...	29. Srivilliputtur	...	...
8. Chirala	5	0'27	30. Tellicherry	...	...
9. Cochin	...	...	31. Tenali	2	0'06
10. Devakottai	...	...	32. Tinnevely	2	0'04
11. Dharmapuram	...	...	33. Tiruppattur	...	...
12. Gudivada	16	0'79	34. Tiruppur	...	...
13. Hindupur	...	...	35. Tiruvavur	...	...
14. Hospet	...	...	36. Udumalpet	...	...
15. Karaikudi	...	...	37. Udipt	...	...
16. Karur	...	...	38. Vaniyambadi	...	...
17. Mangalore	...	...	39. Villupuram	6	0'80
18. Mannargudi	5	0'22	40. Walajapet	...	...
19. Mayavaram	9	0'28			
20. Nandyal	38	1'68	Total	96	0'09
21. Narasaraopet	1	0'06			
22. Ongole	1	0'06	Mean rate for 5 years ending with 1927		0'50

N.B.—Only 11 out of 43 municipalities have the whole water-supply protected, while the remaining 32 have only partial schemes.

ANNEXURE C.

Financial Statement showing the Working of the Health Propaganda Section of the Office of the Director of Public Health during the year 1938.

Serial number.	Details.	Amount.		
		RS.	A.	P.
1.	Establishment charges (including pay of officers, establishment, allowances, honorarium, etc.) ...	1,342	0	0
2.	Cost of printing posters and leaflets ...	5,689	8	0
3.	Miscellaneous charges including repairs, renewals of equipment, slides, purchase of materials for artist, etc.	1,051	0	0
4.	Total cost ...	8,082	8	0
5.	Sale-proceeds of posters and leaflets ...	2,983	10	9
6.	Value of posters and leaflets unsold ...	20,810	4	6
7.	Receipts from loan of magic lanterns, slides, films, etc. ...	1,817	6	5
8.	Total of items 5 to 7 ...	25,611	5	8
9.	Net gain ...	17,528	13	8
10.	Net extra expenditure deducting Rs. 8,000 being the grant originally made to the Madras Health Council. No extra expenditure.			
11.	Net extra expenditure according to the sanctioned scheme ...			Nil.
12.	Capital expenditure (purchase of films, etc.) specially sanctioned from time to time ...	537	0	0

ANNEXURE D.
Maternity and Child-welfare in Rural Areas (Districts exclusive of Municipalities) during 1938.

Number.	Names of districts.	Area in square miles.	Total revenue of District Board.	Amount spent on Maternity and Child-welfare work.	Percentage of total amount spent on Maternity and Child-welfare work.	Maternity and Child-welfare centres.		Medical women.		Number of Health visitors.		Midwives.				In Rural medical relief dispensaries.
						Local boards.	Aided and managed by private bodies.	Appointed for Maternity and Child-welfare work.	Available as consultants.	Per 1,000 births.	Local boards.	Private.	In full time domiciliary service.	In private practice.	In hospitals and dispensaries (Govt., Local Fund and Private).	
1	Anantapur	6,741	4,40,900	2,800	0.64	2	..	1	1	0.04	..	..	..	..	13	7
2	Bellary	5,519	4,15,150	11,110	1.73	17	2	1	4	0.08	..	..	6	1	11	7
3	Chingleput	1,371	6,42,070	3,144	0.56	..	3	..	2	0.04	..	..	5	..	49	12
4	Chittoor	5,914	5,58,900	11,090	0.73	11	..	2	..	0.02	1	..	..	..	27	14
5	Coimbatore	7,044	16,13,165	535	0.14	..	..	..	..	0.05	..	..	..	..	24	11
6	Madurai	5,918	8,73,770	5,281	0.32	6	..	1	..	0.02	..	..	..	..	12	7
7	Godavari, East	2,527	16,52,545	8,902	1.18	9	..	1	..	0.02	..	..	..	..	32	28
8	Godavari, West	2,361	8,07,267	2,137	0.09	3	..	1	..	0.02	..	..	..	..	24	..
9	Guntur	5,757	23,87,605	6,781	0.01	8	..	1	..	..	1	..	..	..	31	11
10	Kistna	3,438	38,53,410	1,723	0.11	1	..	..	..	..	..	..	..	..	18	33
11	Kurnool	7,837	14,77,230	3,502	0.33	2	..	..	..	..	..	..	..	..	15	19
12	Madura	4,908	10,46,800	400	0.03	2	1	..	..	..	..	..	..	..	14	8
13	Malabar	..	..	409	0.34	2	..	..	..	..	..	..	..	..	..	7
14	Nellore	7,978	2,36,100	574	0.34	1	..	..	..	..	..	..	..	..	24	..
15	The Nilgiris	982	8,15,628	8,216	1.01	1	..	1	..	0.08	..	..	..	..	8	19
16	North Arcot	4,945	..	..	..	..	..	..	..	..	..	..	..	..	24	..

* From Dec. 1938.

† 6 (4) up to 31 Oct. 1938 and 2 throughout 1938.

† Up to June 1938.

ANNEXURE D—cont.

Maternity and Child-welfare in Rural Areas (Districts exclusive of Municipalities) during 1938—cont.

Number.	Names of districts.	Midwives.		(19)	(20)	(21)	(22)	Beds in hospitals.		(25)	(26)	(27)	(28)	(29)	(30)	(31)
		Total.	Per 1,000 births.					Number.	Per 1,000 births.							
1	Anantapur...	22	0.49	3,011	6.65	6	0.12	...	44,931	309	7,651	170.29	511	11.30	Maternal deaths.	Maternal mortality rate per 1,000 births.
2	Bellary ...	18	0.46	2,831	7.25	...	...	...	38,769	232	6,660	171.78	228	5.84		
3	Chingleput ...	85	1.44	6,929	11.76	44	0.75	12	53,223	726	10,198	175.16	471	7.99		
4	Chittoor ...	47	0.86	3,582	6.59	31	0.57	14	53,926	427	8,018	148.67	439	8.07		
5	Coimbatore ...	47	0.51	4,523	4.88	6	0.08	...	92,243	454	15,798	171.25	507	5.47		
6	Cuddapah ...	20	0.55	1,877	4.65	4	0.11	5	35,791	272	5,325	148.60	359	9.96		
7	Godavari, East ...	64	1.11	452	0.79	...	...	...	56,788	678	10,991	193.54	588	10.23		
8	Godavari, West ...	45	1.01	3,702	8.27	103	2.30	...	9,451	150	1,611	159.88	93	9.69		
9	Guntur ...	65	0.82	3,488	4.52	25	0.32	45	44,366	381	8,917	223.50	507	11.33		
10	Kistna ...	45	0.90	3,700	7.39	29	0.53	24	76,323	801	15,234	199.61	544	7.05		
11	Kurnool ...	33	0.72	1,226	2.66	...	...	...	49,575	494	10,140	204.52	487	9.73		
12	Madura ...	23	0.35	2,874	4.01	18	0.25	...	45,472	566	7,870	173.08	362	7.86		
13	Malabar ...	2	0.01	1,777	1.41	...	...	...	71,277	474	11,320	158.81	449	6.26		
14	Nellore ...	49	0.89	4,054	7.36	23	0.42	...	123,690	2,523	16,989	187.34	764	6.05		
15	The Nilgiris ...	11	2.66	505	12.21	4	0.97	...	54,731	336	8,886	162.36	428	7.77		
16	North Arcot ...	49	0.53	3,619	39.15	14	0.15	...	4,071	66	834	155.74	40	9.67		
									91,146	1,292	12,438	136.46	615	6.65		

48

ANNEXURE D—cont.

Maternity and Child-welfare in Rural Areas (Districts exclusive of Municipalities) during 1938—cont.

Number.	Names of districts.	Area in square miles.	(4) Total revenue of District Board.	(5) Amount spent on Maternity and Child-welfare work.	(6) Percentage of total amount spent on Maternity and Child-welfare work.	Maternity and Child-welfare centres.		Medical women.			Number of Health visitors.		Midwives.					
						(7) Local boards.	(8) Aided and managed by private bodies.	(9) Appointed for Maternity and Child-welfare work.	(10) Available as consultants.	(11) Per 1,000 births.	(12) Local boards.	(13) Private.	In full time domiciliary service.		(16) In private practice.	(17) In hospitals and dispensaries (Govt., L.F. and Private).	(18) In Rural medical relief dispensaries.	
													(14) Local boards.	(15) Private.				
17	Rannad ...	4,810	Rs. 11,00,000	Rs. 6,000	0.54	8	...	...	...	...	...	...	8	...	...	...	44	13
18	Salem ...	7,057	13,80,717	11,264	0.81	18	...	...	...	...	...	...	19	...	5	...	23	15
19	South Arcot ...	4,207	11,17,183	2,270	0.20	2	...	1	...	...	...	...	2	...	...	...	28	13
20	South Kanara ...	4,012	6,71,520	2,750	0.41	...	...	2	...	...	...	...	9	...	...	...	15	13
21	Tanjore ...	3,727	17,67,957	12,483	0.71	15	...	...	...	...	...	...	15	...	...	...	25	19
22	Tinnevely ...	4,042	10,03,464	615	0.06	2	1	...	...	...	...	...	2	...	1	...	32	10
23	Trichinopoly ...	4,814	9,52,502	4,981	0.52	3	...	1	...	...	...	...	8	...	...	...	18	24
24	Vizagapatnam ...	8,000	...	...	...	5	...	1	...	...	...	...	5	...	6	...	88	1
	Total for the Districts.	...	2,42,14,983	1,06,917	0.44	122	9	14	17	0.02	8	...	141	18	15	559	308	
	Total for the Municipalities.	...	2,61,86,919	3,12,460	1.20	78	20	26	81	6.27	34	6	298	26	191	211	...	
	Total for the Province.	...	5,03,51,902	4,19,407	0.83	200	29	40	98	0.08	42	6	439	44	208	770	308	

Note.—Where information is not available no figures are given.

49

ANNEXURE D—cont.

Maternity and Child-welfare in Rural Areas (Districts exclusive of Municipalities) during 1938—cont.

Number.	Names of districts.	Midwives.		Reds in hospitals.			Percentage of cases receiving skilled aid at child birth.	Percentage of cases receiving skilled aid at child birth.	Number of cases receiving skilled aid at child birth.	Live-births.	Still-births.	Number of infantile deaths.	Infantile mortality rate per 1,000 live births.	Maternal deaths.	Maternal mortality rate, per 1,000 births.
		Total.	Per 1,000 births.	Maternity.	Children's diseases.	Number.				(26)	(27)	(28)	(29)	(30)	(31)
		(19)	(20)	(23)	(24)	(25)	(22)	(21)	(22)	(26)	(27)	(28)	(29)	(30)	(31)
17	Rannad ...	65	1.07	...	0.10	...	60.29	3,669	60.29	80,235	625	7,792	129.35	493	8.10
18	Salem ...	62	0.69	9	0.10	...	6.61	5,982	6.61	90,007	441	13,929	154.75	663	7.33
19	South Arcot ...	43	0.53	4	0.05	7	4.38	3,265	4.38	79,752	692	11,229	140.80	718	8.93
20	South Kanara ...	37	0.72	...	0.05	...	6.36	5,007	6.36	50,082	1,252	7,507	149.90	590	11.49
21	Tanjore ...	69	1.06	24	0.37	...	7.66	4,761	7.66	64,202	1,159	10,719	166.96	1,045	15.99
22	Tinnevely ...	45	0.58	18	0.23	...	6.12	2,300	6.12	76,300	1,379	19,366	175.18	757	9.75
23	Trichinopoly ...	45	0.71	2	0.03	...	3.61	3,188	3.61	63,031	705	10,329	163.39	735	11.53
24	Vizagapatam ...	50	0.42	...	...	...	2.67	3,188	2.67	118,316	1,129	21,334	185.40	901	7.55
	Total for the Districts.	1,041	0.66	364	0.23	107	5.07	79,640	5.07	1,552,687	17,583	256,383	165.19	13,294	8.47
	Total for the municipalities.	726	3.59	955	6.09	364	34.97	57,458	34.97	156,821	7,484	27,547	175.68	2,088	12.77
	Total for the Province.	1,767	0.96	1,319	0.77	471	7.91	137,098	7.91	1,709,518	25,067	283,930	166.14	15,382	8.88

ANNEXURE E.

Maternity and Child-welfare—Municipalities in the year 1938.

Maternity and Child-welfare—Municipalities in the year 1938—cont.

18	Cuddapah district—	8	7-23	649	58-68	...	5-42	...	1,037	69	114	109-98	26	23-51
19	Cuddapah ...	2	2-36	301	35-45	...	...	...	828	21	109	131-48	14	16-49
20	East Godavari district—	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Cocanada ...	18	3-82	12	5-73	6	2-86	...	2,004	91	524	261-48	25	11-93
22	Rajahmundry ...	16	6-82	1,103	47-00	26	11-08	...	2,224	123	544	244-60	31	13-21
23	Peddapuram ...	2	3-06	243	37-21	...	...	...	625	28	92	147-20	10	15-31
24	West Godavari district—	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Ellore ...	4	1-63	720	29-26	8	3-25	...	2,424	37	252	103-96	28	11-39
26	Palacole ...	...	...	...	...	...	...	...	454	15	95	209-25	10	21-32
27	Guntur district—	65	16-20	2,525	62-92	64	20-93	72	3,724	289	818	219-66	80	19-94
28	Guntur ...	3	2-12	451	31-83	6	4-23	...	1,351	68	280	192-45	9	6-35
29	Tenali ...	2	2-72	345	44-88	4	5-13	2	700	36	84	120-00	16	21-74
30	Chirala ...	4	4-73	375	44-91	...	...	...	731	104	143	195-62	19	22-75
31	Ongole ...	3	4-86	223	36-14	5	8-10	...	572	45	155	270-98	6	9-72
32	Narasaraopet ...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	Kistna district—	8	2-90	408	15-26	24	8-98	...	2,582	91	515	199-46	28	10-48
34	Bezwada ...	9	3-42	1,337	50-84	20	7-80	16	2,805	125	531	211-98	32	12-17
35	Masulipatam ...	...	...	...	...	...	...	...	912	63	220	241-23	11	11-29
36	Guduwada ...	...	...	...	...	...	...	...	...	...	...	...	...	...
37	Kurnool district—	11	6-20	1,213	68-34	36	20-28	12	1,704	71	224	131-46	26	14-65
38	Kurnool ...	8	8-21	312	32-03	2	2-05	16	924	50	127	137-44	13	18-35
39	Nandral ...	82	...	...	...	...	...	...	80,985	1,321	6,881	222-11	284	8-79
40	Madras district Madras...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	Madras district—	46	4-80	5,043	52-64	110	11-47	55	9,029	551	1,686	186-73	136	14-20
42	Madura ...	9	4-15	1,006	46-42	4	1-85	...	2,105	62	347	164-85	24	11-08
43	Dindigul ...	1	0-48	187	17-89	...	...	...	1,043	2	153	146-69	13	12-44
44	Bodinayakanur ...	3	2-67	245	21-78	2	1-78	...	1,089	36	228	209-37	9	8-00
45	Periyakulam ...	...	...	...	...	...	...	...	781	17	151	193-34	14	17-64
46	Palni ...	...	...	...	...	...	...	...	360	15	55	152-78	2	5-33
47	Kodaikanal ...	7	18-67	394	81-07	...	...	...	...	...	...	...	...	...
48	Malabar district—	19	4-86	1,253	32-07	47	12-03	12	3,720	186	474	127-42	48	12-29
49	Calicut ...	8	3-76	373	17-53	11	5-17	...	2,046	83	292	142-72	18	8-45
50	Palghat ...	7	7-11	607	61-62	...	...	...	899	46	135	143-77	12	12-18
51	Cannanore ...	5	5-01	518	51-80	6	6-01	...	918	80	141	153-59	16	16-03
52	Tellicherry ...	12	12-23	645	65-75	4	4-08	...	943	38	128	135-74	11	11-21
53	Cochin ...	25	9-16	2,021	74-05	...	...	...	2,492	237	518	95-10	57	20-89
54	Nellore district Nellore ...	...	...	...	...	...	...	...	...	...	...	...	...	...
55	Nilgiris district—	10	9-16	800	73-32	33	30-21	6	1,037	34	147	139-07	8	7-33
56	Ootacamund ...	5	5-25	416	75-50	8	14-32	8	539	12	92	170-69	5	9-07
57	Coonoor ...	...	...	...	...	...	...	...	...	...	...	...	...	...
58	North Arcot district—	31	7-52	1,950	56-43	70	20-26	34	3,238	217	470	145-15	50	14-47
59	Yellore ...	2	1-48	345	25-57	...	...	...	1,291	68	169	155-35	14	10-38
60	Tiruvannamalai	...	...	...	...	...	...	...	...	...	...	...	...	...

ANNEXURE E—cont.

Maternity Relief and Child-welfare—Municipalities in the year 1938—cont.

Number.	Names of municipalities.	(1)	(2)	(3)	(4)	(5)	(6)	Maternity and Child-welfare Centres.		Medical women.		Number of Health visitors.		Midwives.			(17)
								Local Bodies.	Aided and managed by private bodies.	Appointed for Maternity and Child-welfare.	Available as consultants.	Per 1,000 births.	Local Bodies.	Private.	In full time domiciliary service.	In private practice.	In hospitals and dispensaries, Local Fund and private).
				Area in square miles.	Total revenue of Municipalities.	Amount spent on Maternity and Child-welfare.	Percentage of total amount spent on Maternity and Child-welfare.	Local Bodies.	Aided and managed by private bodies.	Appointed for Maternity and Child-welfare.	Available as consultants.	Per 1,000 births.	Local Bodies.	Private.	In full time domiciliary service.	In private practice.	In hospitals and dispensaries, Local Fund and private).
52	North Arcot district—cont.				Rs.	Rs.											
53	Gudiyattam	3.50	93,932	...	...	...	...	1	...	...	2	2.43	...	1	...	...	...
54	Vaniyambadi	1.75	1,78,230	...	230	0.13	...	...	...	...	2	2.18	...	...	...	...	...
55	Truppattur	1.02	40,000	...	324	0.81	...	...	...	...	...	...	...	...	...	...	...
56	Walajpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
57	Raunad district—	2.68	1,68,100	...	733	0.44	...	...	...	...	1	...	...	...	...	...	...
58	Virudhunagar	1.85	50,145	...	467	0.93	...	...	...	...	1	0.84	...	...	...	...	...
59	Srivilliputhur	6.49	...	...	...	...	...	...	...	...	1	2.49	...	...	...	...	...
60	Karaijadi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
61	Sivakasi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
62	Devakottai	5.00	4,13,957	...	9,667	2.33	...	...	...	...	1	...	...	...	...	...	...
63	Salem district—Salem	12.06	1,48,550	...	5,070	3.41	...	...	...	...	1	0.83	...	...	...	...	...
64	South Arcot district—	2.00	96,020	...	628	0.65	...	...	...	...	...	...	...	...	...	...	...
65	Cuddalore	2.33	83,846	...	375	0.45	...	...	...	...	1	1.51	...	...	...	...	...
66	Chidambaram	5.25	3,04,570	...	4,977	1.63	...	...	...	...	1	0.78	...	...	...	...	...
67	Villupuram	3.70	38,000	...	...	...	...	...	...	...	2	2.69	...	...	...	...	...
68	South Kanara district—	8.30	4,75,020	...	600	1.26	...	...	...	...	...	...	...	...	...	...	...
69	Mangalore	4.42	3,48,218	...	1,416	0.41	...	...	...	...	1	0.36	...	...	...	...	...
70	Udupi	5.44	1,90,210	...	1,464	0.77	...	...	...	...	3	1.64	...	...	...	...	...
71	Tanjore district—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
72	Tanjore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
73	Kumbakonam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
74	Negapatam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
75	Mayavaram	4.70	1,51,632	...	757	0.49	...	...	...	...	1	0.92	...	...	...	...	...
76	Tiruvavur	4.75	78,007	...	18	0.02	...	...	...	...	...	...	...	...	...	...	...
77	Mannargudi	4.20	60,290	...	1,050	1.74	...	...	...	...	1	0.98	...	...	...	...	...
78	Tinnevely district—	3.07	4,86,600	...	3,085	0.66	...	...	...	...	3	1.35	...	...	...	...	...
79	Tuticoria	3.58	2,56,654	...	2,312	0.90	...	...	...	...	1	0.92	...	...	...	...	...
80	Tinnevely	3.46	91,086	...	972	1.07	...	...	...	...	5	4.05	...	...	...	...	...
81	Palacottah	8.90	8,71,305	...	6,145	0.71	...	...	...	...	7	1.41	...	...	...	...	...
82	Trichinopoly district—	5.07	1,23,583	...	821	0.66	...	...	...	...	1	1.06	...	...	...	...	...
83	Srirangam	2.33	1,40,486	...	563	0.40	...	...	...	...	...	...	...	...	...	...	...
84	Karur	6.13	5,14,628	...	2,337	0.45	...	...	...	...	...	...	...	...	...	...	...
85	Vizagapatam district—	3.50	3,21,250	...	1,831	0.57	...	...	...	...	...	...	...	...	...	...	...
86	Vizagapatam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
87	Vizianagaram	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
88	Anakapalle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
89	Chitacole	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90	Bimlipatam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
91	Total for the Municipalities	...	2,61,36,919	...	3,12,460	1.20	...	78	20	26	81	...	34	6	268	191	211

ANNEXURE E—cont.

Maternity and Child-welfare—Municipalities in the year 1938—cont.

Number.	Name of municipality.	Midwives—cont.		(18)	(19)	(20)	(21)	Beds in hospitals, exclusively for		(24)	(25)	(26)	(27)	(28)	(29)	(30)
		Total.	Per 1,000 births.					Maternity.	Children's diseases.							
(18)		(19)		(20)	(21)	(22)	(23)	(24)		(25)	(26)	(27)	(28)	(29)	(30)	

ANNEXURE G—cont.

Details of Maternity and Child-welfare Work in Municipalities—cont.

Serial number and Names of Municipalities.	Brought under care.					Home Visits.			Clinics.				Mothers' classes.		Other activities.			
	Total number of cases.	Anti-natal morth-ers.	Labour cases.	Infants.	Pre-School.	Woman Medical Officers.	Health Visitors.	Midwives.		Number held.	Attendance.			Number held.	Attendance.	Number.	Attendance.	School visit-ed for health education.
								Ante-natal.	Post-natal.		Ante-natal.	Infants.	Pre-School.	Nursing mothers.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
32. Dindikul...	2,090	1,357	793	189	107	...	4,135	7,980	5,432	48	131	190	109	247	23	229	12	457
33. Bodinayakanur ...	There in no centre.	548	245	241	...	...	...	2,494	4,040	...	...	...	...	...	304	3,083	10	1,971
34. Periyakulam ...	618	...	456	...	...	...	...	2,322	4,893	...	122	1,295	7,874	...	...	...	9	545
35. Calicut ...	538	165	538	71	126	...	...	792	1,818	...	...	...	...	...	...	...	...	...
36. Cannanore ...	983	943	998	...	...	...	...	6,339	2,145	...	...	...	...	...	...	...	...	...
37. Tellicherry ...	981	943	164	...	...	...	...	1,989	1,625	...	...	...	...	...	...	...	...	...
38. Cochin ...	712	665	237	347	845	1,098	3,049	3,029	4,006	168	1,010	880	2,106	2,626	43	1,588	9	900
39. Ottacamund ...	376	338	168	64	103	672	...	1,015	1,467	...	...	...	...	...	72	1,149	17	505
40. Coonoor ...	1,600	837	663	218	63	...	...	1,015	1,467	...	...	...	...	...	...	...	...	...
1. Vellore ...	842	317	183	...	...	...	...	420	280	...	...	...	...	...	...	...	...	...
2. Tiruvannamalai ...	28	...	28	...	...	...	1,328	436	659	...	...	...	...	...	...	...	...	...
3. Tirupattur ...	474	411	63	...	...	...	1,710	2,707	1,197	82	1,401	300	460	371	65	561	20	8,065
4. Virudhunagar ...	807	756	217	202	...	451	...	1,312	1,312	...	...	...	...	...	...	...	...	...
5. Srivilliputtur ...	199	25	199	...	...	...	...	128	119	...	...	...	...	...	...	...	...	...
6. Karaikudi ...	2,750	2,327	1,419	539	515	...	4,645	10,336	10,410	254	1,338	1,347	4,439	1,792	129	1,334	...	...
7. Sivakasi ...	1,449	230	834	220	240	2,422	...	11,543	6,188	180	1,478	340	275	539	...	...	...	...
8. Cuddalore ...	419	419	243	...	...	...	...	963	2,551	...	...	...	...	...	...	...	...	...
9. Chidambaram ...	298	238	142	...	...	...	...	1,353	2,510	...	...	...	...	...	...	...	...	...
10. Villupuram ...	1,445	1,038	693	...	...	1,356	...	2,376	3,505	104	...	...	...	...	...	...	...	...
11. Mangalore ...	500	302	500	...	...	...	...	302	...	...	...	...	...	...	...	...	...	...
12. Udipi ...	140	150	82	650	650	...	...	150	720	...	...	...	...	...	...	...	...	...
13. Tanjore ...	...	903	668	...	...	...	...	908	2,080	...	...	...	...	...	...	...	...	...
14. Kumbakonam ...	...	361	175	...	...	...	...	2,127	3,120	...	...	...	...	...	...	...	...	...
15. Nagapattinam ...	...	511	249	...	...	...	...	2,706	1,324	...	...	...	...	...	...	...	...	...
16. Mayavaram ...	723	673	406	...	...	...	...	3,804	5,060	...	...	...	...	...	...	...	...	...
17. Mannargudi ...	585	585	585	...	...	...	...	3,192	6,108	...	...	...	...	...	...	...	...	...
18. Tuticorin ...	859	738	329	250	...	2,525	...	900	1,630	200	598	4,618	1,018	4,140	33	730	11	600
19. Palacottah ...	559	457	323	...	...	...	3.7	457	9,308	66	154	...	...	...	64	270	30	355
20. Trichinopoly ...	1,324	772	1,459	627	...	45	...	713	...	...	...	...	...	...	...	...	...	...

ANNEXURE H.

Summary of the working of the minor Ports in the Madras Province in 1938.

Serial Number.	Name of Port.	Incoming vessels.			Out-going vessels.			Infectious diseases.			Action taken.	Rats on steamers.
		Number.	Crew.	Passen- gers. inspected by P.H.O.	Number. inspected by P.H.O.	Number.	Crew.	Passen- gers. inspected by P.H.O.	Small- pox.	Cholera		
1	Barva	105	12,084	6,983	...	105	12,084	8,873	...	...	...	...
2	Calingspatam	115	12,463	3,196	...	115	12,463	2,845	...	...	...	...
3	Bimlipatam	33	2,116	22	...	32	2,116	23	...	...	...	...
4	Cocanada	243	18,143	13,406	...	241	18,199	8,033	...	...	...	...
5	Masilipatam	131	4,788	51	...	132	4,788	51	...	...	...	...
6	Cuddalore	169	19,551	262	...	169	19,606	92	...	...	...	...
7	Porto Novo	6	749	60	...	5	741	28	...	...	...	...
8	Tranquebar	18	510	...	...	26	555	...	...	...	...	...
9	Negapatam	139	18,898	44,603	22	138	17,110	31,108	...	...	4 chicken-pox cases landed and sent to Isolation Hospital	...
10	Tirumalavasi...	152	1,900	...	...	189	2,239	...	...	...	...	...
11	Toppothurai and Pt. Calimere.	...	...	...	...	...	...	...	...	...	...	...
12	Muthupet	...	...	...	...	...	...	...	...	...	...	...
13	Adirampatnam	...	...	...	...	...	...	...	...	...	...	...
14	Annampatnam and Krishna-rajapatnam.	25	136	...	...	29	140	...	...	...	...	...
15	Tondi	105	1,142	...	7	105	1,142	...	...	...	...	...
16	Devipatnam	60	417	17	...	58	362	25	...	...	...	...
17	Dhanushkodi	365	40	136,634	...	365	40	122,936	...	...	...	...
18	Kilakarai	210	1,794	97	24	216	2,091	25	...	...	...	...
19	Kulasekhara-patnam.	262	1,893	...	...	258	1,870	...	...	...	...	...
20	Tuticorin	981	35,636	43,710½	104	974	35,519	54,884	...	...	...	...
21	Calicut	...	487	28,381	87	5	487	28,389	177	5	1*	...
22	Beypur	...	47	587	...	47	587	...	...	...	...	...
23	Tellicherry	...	160	9,960	10	160	9,960	...	...	...	...	...
24	Cannanore	...	459	14,837	487½	463	14,089	407	...	...	...	...
25	Ponnani	...	119	7,394	...	119	7,394	1	...	...	...	...
26	Mangalore	...	3,067	32,800	7,469	3,092	32,800	8,968	...	...	...	...
27	Malpe	...	616	9,021	7,738	606	9,229	6,839	...	...	...	...
28	Hungercottah...	...	302	1,711	...	304	1,705	...	...	...	...	...
29	Gangoli	...	1,083	11,383	674½	1,071	11,531	780	...	...	...	...
30	Baidur and Shirur.	...	274	1,726	...	272	1,703	...	...	...	...	...

C7

ANNEXURE J.

ANNEXURE J.						Percentage of quarterly births to total.
				Number of births.		
First quarter (90 days)	..	January ..	..	125,255	359,751	21.04
		February ..	..	108,018		
		March ..	..	126,478		
Second quarter (91 days)	..	April ..	..	130,512	423,152	24.75
		May ..	..	142,940		
		June ..	..	149,700		
Third quarter (92 days)	..	July ..	..	162,398	479,078	28.02
		August ..	..	158,730		
		September ..	..	157,950		
Fourth quarter (92 days)	..	October ..	..	157,752	447,564	26.19
		November ..	..	147,762		
		December ..	..	142,050		
Total ..				1,709,545	1,709,545	100.00

APPENDIX I

No. I.—Statement showing the births registered in the Districts in the Province of Madras during the year 1938.

ANNEXURE K.

Age.	Rural areas.			Urban areas.			Total (Rural and Urban).		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
Under 1 week ..	33.98	26.90	60.88	29.45	22.21	51.69	33.32	26.21	59.53
1 week and under one month ..	17.87	14.42	32.29	15.52	11.85	27.37	17.52	14.05	31.57
1 month and under 6 months...	19.62	17.22	36.84	27.94	23.50	51.45	20.84	18.14	38.98
6 months and under 12 months.	18.36	16.85	35.21	21.24	19.09	40.33	18.79	17.17	35.96
Total under one year ..	89.83	75.38	165.21	94.16	76.69	170.84	90.47	75.57	166.04

Age.	Rural areas.			Urban areas.			Total (Rural and Urban).		
	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.	Males.	Fe- males.	Total.
1 year and under 5 years ..	29.83	29.07	29.45	33.10	33.02	33.06	36.30	29.61	29.96
5 years and under 10 years ..	7.68	7.65	7.67	7.37	7.37	7.37	7.64	7.61	7.63
10 do. 15 do.	4.65	4.76	4.70	4.52	5.37	4.93	4.63	4.84	4.74
15 do. 20 do.	6.10	7.80	6.98	7.85	11.53	9.73	6.35	8.32	7.37
20 do. 30 do.	7.37	9.64	8.58	11.10	13.99	12.62	7.90	10.24	9.15
30 do. 40 do.	10.17	11.51	10.84	14.23	14.61	14.44	10.75	11.94	11.35
40 do. 50 do.	16.92	14.25	15.63	23.02	16.56	19.94	17.80	14.57	16.24
50 do. 60 do.	29.44	24.16	26.81	37.21	26.12	31.78	30.54	24.44	27.51
60 years and above ..	104.10	103.95	104.05	116.07	119.46	117.77	105.81	106.11	105.97
Total ..	23.52	22.36	22.93	27.41	26.00	26.71	24.07	22.86	23.46

NOTE.—The death-rates for all periods under one year have been calculated per 1,000 live-births.

APPEN

VITAL STATISTICS OF THE

No. I.—Statement showing the Births registered in the

Number.	Population as per Census of 1931.			Districts.	Population for which Birth and Death returns were received.		
	Males.	Females.	Total.		Males.	Females.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	539,534	510,877	1,050,411	Anantapur ...	539,534	510,877	1,050,411
2	493,018	476,756	969,774	Bellary ...	493,018	476,756	969,774
3	837,161	817,954	1,655,115	Chingleput ...	835,961	817,815	1,653,776
4	738,325	708,778	1,447,103	Chittoor ...	738,325	708,778	1,447,103
5	1,218,224	1,220,840	2,445,064	Coimbatore ...	1,218,224	1,220,840	2,445,064
6	483,914	465,483	949,397	Cuddapah ...	483,914	465,483	949,397
7	828,489	851,564	1,680,053	Godavari, Plains. Agency.	828,489	851,564	1,680,053
8	120,795	119,734	240,529	Godavari, East. Agency.	120,795	119,734	240,529
9	602,327	620,729	1,223,056	Godavari, West ...	602,327	620,729	1,223,056
10	1,028,993	1,006,667	2,035,660	Guntur ...	1,028,993	1,006,667	2,035,660
11	635,704	618,504	1,254,208	Kistna ...	635,704	618,504	1,254,208
12	520,238	504,723	1,024,961	Kurnool ...	520,238	504,723	1,024,961
13	341,223	306,007	647,230	Madras ...	341,223	306,007	647,230
14	1,081,437	1,114,310	2,195,747	Madura ...	1,081,437	1,114,310	2,195,747
15	1,716,138	1,817,806	3,533,944	Malabar ...	1,716,138	1,817,806	3,533,944
16	744,322	741,900	1,486,222	Nellore ...	744,322	741,900	1,486,222
17	91,928	77,402	169,330	Nilgiris, The ...	90,824	77,193	168,017
18	1,131,610	1,135,379	2,266,989	North Arcot ...	1,131,610	1,135,379	2,266,989
19	872,177	966,778	1,838,955	Ramnad ...	872,177	966,778	1,838,955
20	1,211,743	1,222,229	2,433,972	Salem ...	1,211,743	1,222,229	2,433,972
21	1,225,072	1,229,435	2,454,507	South Arcot ...	1,225,072	1,229,435	2,454,507
22	663,950	708,291	1,372,241	South Kanara ...	663,950	708,291	1,372,241
23	1,143,738	1,242,182	2,385,920	Tanjore ...	1,143,738	1,242,182	2,385,920
24	987,159	1,059,748	2,046,907	Tinnevely ...	987,159	1,059,748	2,046,907
25	934,867	978,378	1,913,245	Trichinopoly ...	934,867	978,378	1,913,245
26	1,577,947	1,689,362	3,267,309	Vizagapatam ...	1,577,947	1,689,362	3,267,309
	96,801	97,367	194,168	Vizagapatam Agency.	...	...	...
	21,866,534	22,315,183	44,182,017	Grand total for the Province.	21,767,729	22,217,468	43,985,197
	3,108,112	3,082,597	6,190,709	Total of town circles in the Province.	3,108,112	3,082,597	6,190,709
	18,758,722	19,232,586	37,991,308	Total of rural circles in the Province.	18,659,617	19,134,871	37,794,488

DIX I.

GENERAL POPULATION.

Districts in the Province of Madras during the year 1938.

Number of births registered (exclusive of still-births).			Ratio of births per 1,000 of population.			Mean ratio of births per 1,000 during the previous five years.			Number.
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
23,799	22,948	46,747	22.66	21.85	44.50	21.09	20.15	41.24	1
22,022	21,418	43,440	22.71	22.09	44.79	20.58	19.68	40.19	2
31,999	30,884	62,883	19.35	18.67	38.02	18.88	17.98	36.86	3
28,437	27,241	55,678	19.65	18.82	38.48	18.14	17.56	35.65	4
51,830	49,509	101,339	21.20	20.25	41.45	19.54	18.53	38.03	5
19,109	18,547	37,656	20.13	19.54	39.66	18.85	18.04	35.89	6
31,646	29,995	61,641	18.84	17.85	36.69	19.46	18.57	38.02	7
4,767	4,684	9,451	19.82	19.47	39.29	19.83	18.91	38.75	8
24,292	22,952	47,244	19.88	18.77	38.63	21.56	20.45	42.06	9
42,824	40,577	83,401	21.04	19.93	40.97	19.83	18.81	38.65	10
23,533	27,041	50,574	22.75	21.58	44.31	21.91	20.92	42.84	11
14,538	23,562	38,100	23.94	22.99	46.93	21.33	20.65	41.96	12
16,001	14,984	30,985	24.72	23.15	47.87	23.56	22.50	46.05	13
43,633	42,051	85,684	19.87	19.15	39.02	18.73	17.79	36.52	14
67,425	64,831	132,256	19.08	18.55	37.42	19.19	18.32	37.52	15
29,320	27,903	57,223	19.73	18.77	38.50	18.68	17.57	36.18	16
2,861	2,806	5,667	17.03	16.70	33.73	17.30	16.68	33.98	17
50,436	48,578	99,014	22.25	21.43	43.68	20.47	19.59	40.06	18
33,045	31,645	64,690	17.97	17.21	35.18	16.54	15.85	32.39	19
48,050	46,052	94,102	19.74	18.92	38.66	18.47	17.69	36.16	20
42,529	40,953	83,482	17.33	16.68	34.01	16.70	15.84	32.54	21
27,135	26,154	53,289	19.77	19.06	38.83	19.54	18.50	38.00	22
37,957	35,847	73,804	15.91	15.02	30.93	15.78	15.01	30.80	23
41,735	39,938	81,671	20.39	19.51	39.90	20.05	19.16	39.26	24
36,072	34,120	70,192	18.85	17.83	36.69	17.96	17.12	35.08	25
63,714	60,618	124,332	19.50	18.55	38.05	20.26	19.34	39.64	26
...	...	...	...	...	...	...	...	...	...
873,709	835,836	1,709,545	19.86	19.00	38.87	19.18	18.29	37.47	
128,273	122,759	251,032	20.72	19.83	40.55	19.66	18.71	38.38	
745,436	713,077	1,458,513	19.72	18.87	38.59	19.16	18.22	37.33	

No. I (a) Statement showing the still-births registered according to classes and sex in the municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 1748, P.H., dated 18th July 1934).

Serial number.	Municipalities.	Still-births.										Percentage of total to live births.	
		Hindus.		Muham- madans.		Indian Christ- ians.		Other classes.		Total.			
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.		Total.
<i>Anantapur District.</i>													
1	Anantapur	15	12	3	5	...	...	...	...	18	17	35	5.4
2	Hindupur	11	5	2	3	...	...	...	...	13	8	21	3.2
3	Tadpatri	2	4	5	1	...	1	...	...	7	6	13	2.6
<i>Bellary District.</i>													
4	Bellary	39	28	13	13	1	3	...	1	53	45	98	4.8
5	Adoni	20	9	11	2	1	...	...	...	32	11	43	2.7
6	Hospet	11	7	5	4	...	...	...	...	16	11	27	3.0
<i>Chingleput District.</i>													
7	Conjeeveram ...	101	76	4	1	2	1	...	...	107	78	185	6.9
8	Saidapet	13	12	1	...	1	...	...	...	15	12	27	2.2
9	Chingleput	57	40	1	1	3	...	1	...	62	41	103	14.1
<i>Chittoor District.</i>													
10	Chittoor	55	45	4	3	...	...	...	...	59	48	107	10.5
11	Tirupati	29	22	...	2	...	...	...	2	29	26	55	7.5
<i>Coimbatore District.</i>													
12	Coimbatore	122	103	5	10	7	5	1	...	135	118	253	5.6
13	Erode	33	23	4	...	2	2	...	...	39	25	64	5.7
14	Dharapuram ...	3	3	1	...	...	...	...	...	4	3	7	0.9
15	Pollachi	18	11	4	2	1	...	...	...	23	13	36	3.8
16	Tiruppur	13	21	1	3	...	...	...	...	14	24	38	3.3
17	Udamalpet	7	1	1	2	2	...	...	...	10	3	13	2.3
<i>Cuddapah District.</i>													
18	Cuddapah	24	21	8	14	1	1	...	...	33	36	69	6.7
19	Proddatur	12	5	2	...	...	2	...	...	14	7	21	2.5
<i>East Gōdāvari District.</i>													
20	Cocanada	34	54	1	2	...	...	...	...	35	56	91	4.5
21	Rajahmundry ...	59	55	3	3	1	2	...	...	63	60	123	5.5
22	Peddapuram ...	14	12	1	1	...	...	...	...	15	13	28	4.5
<i>West Gōdāvari District.</i>													
23	Ellore	21	12	2	2	...	...	...	...	23	14	37	1.5
24	Palacole	8	6	...	...	1	...	...	...	9	6	15	3.3

No. I (a)—Statement showing the still-births registered according to classes and sex in the municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 1748, P.H., dated 18th July 1934)—cont.

Serial number.	Municipalities.	Still-births.										Percentage of total to live births.	
		Hindus.		Muham- madans.		Indian Christi- ans.		Other classes.		Total.			
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.		Total.
<i>Guntur District.</i>													
25	Guntur	109	100	22	20	18	20	...	...	149	140	289	7.8
26	Tenali	33	15	1	5	5	7	...	...	39	27	66	4.9
27	Ohirala	13	20	...	1	1	1	...	...	14	22	36	5.1
28	Ongole	46	35	6	2	7	7	1	...	60	44	104	14.2
29	Narasaraopet ...	17	14	6	3	1	4	...	...	24	21	45	7.9
<i>Kistna District.</i>													
30	Bezwada	45	26	6	3	6	5	...	...	57	34	91	3.5
31	Masulipatam ...	56	41	12	7	3	6	...	...	71	54	125	5.0
32	Gudivada	35	16	...	3	4	4	1	...	40	23	63	6.9
<i>Kurnool District.</i>													
33	Kurnool	29	19	18	10	...	...	...	...	42	29	71	4.2
34	Nandyal	16	15	10	6	1	2	...	...	27	23	50	5.4
<i>Madras.</i>													
35	Madras	616	468	81	76	25	24	5	6	727	594	1,321	4.3
<i>Madura District.</i>													
36	Madura	280	214	17	17	9	10	4	...	310	241	551	6.1
37	Dindigul	18	26	2	5	6	5	...	...	26	36	62	2.9
38	Bodinayakkanur ...	1	1	...	...	...	...	...	...	1	1	2	0.2
39	Periyakulam ...	14	13	2	1	4	2	...	...	20	16	36	3.3
40	Palni	8	8	...	1	...	...	...	...	8	9	17	2.2
41	Kodaikanal	1	3	...	...	6	4	1	...	8	7	15	4.2
<i>Malabar District.</i>													
42	Calicut	41	33	65	42	4	1	...	...	110	76	186	5.0
43	Palghat	35	32	6	10	...	...	...	...	41	42	83	4.1
44	Cannanore	9	9	14	13	1	...	...	...	24	22	46	4.9
45	Tellicherry	28	15	16	17	2	2	...	...	46	34	80	8.7
46	Cochin	6	6	4	3	6	11	...	2	16	22	38	4.0
<i>Nellore District.</i>													
47	Nellore	99	97	22	8	7	3	...	1	128	109	237	9.5
<i>Nilgiris, The.</i>													
48	Ootacamund	9	9	3	1	5	4	2	1	19	15	34	3.2
49	Coonoor	2	4	1	...	1	3	1	...	5	7	12	2.2
<i>North Arcot District.</i>													
50	Vellore	111	81	19	19	4	3	...	...	134	83	217	6.7
51	Tiruvannamalai ...	34	21	9	4	...	...	...	...	43	25	68	5.3
52	Gudiyattam	24	21	1	...	...	1	...	...	25	22	47	3.5
53	Vaniyambadi	6	12	12	11	...	...	...	...	18	23	41	5.2
54	Tiruppattur	26	20	6	6	1	1	...	...	33	27	60	7.0
55	Walajapet	8	3	2	1	1	...	...	...	11	4	15	3.9

No. I (a)—Statement showing the still-births registered according to classes and sex in the municipalities in the Province of Madras during the year 1938 prescribed in G.O. Ms. No. 1748, P.H., dated 18th July 1934)—cont.

Serial number.	Municipalities.	Still-births.										Percentage of total live births.	
		Hindus.		Muham- madans.		Indian Christi- ans.		Other classes.		Total.			
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.		Total.
	<i>Ramnad District.</i>												
56	Virudunagar ...	29	17	...	1	...	...	...	...	29	18	47	3.4
57	Srivilliputtur ...	9	14	...	...	2	...	...	...	13	14	27	2.8
58	Karaikudi ...	20	19	4	2	1	...	...	...	25	21	46	6.1
59	Devakottai ...	14	18	...	1	...	...	...	...	14	19	33	5.1
60	Sivakasi ...	5	2	...	...	1	...	...	...	6	2	8	1.5
	<i>Salem District.</i>												
61	Salem ...	79	63	7	6	1	...	...	...	87	69	156	3.8
	<i>South Arcot District.</i>												
62	Cuddalore ...	50	42	1	2	2	1	5	5	58	50	108	4.7
63	Chidambaram ...	29	24	2	...	...	1	...	...	31	25	56	7.2
64	Villupuram...	12	9	1	1	...	...	2	1	15	11	26	4.1
	<i>South Kanara District.</i>												
65	Mangalore ...	23	24	7	9	7	8	...	...	37	41	78	3.1
66	Udipi ...	17	12	3	...	5	2	...	...	25	14	39	5.5
	<i>Tanjore District.</i>												
67	Tanjore ...	72	67	2	1	8	4	...	...	82	72	154	5.7
68	Kumbakonam ...	111	87	6	5	10	2	...	...	127	94	221	8.6
69	Negapatam ...	34	33	8	11	...	3	...	...	42	47	89	5.1
70	Mayavaram...	20	22	1	...	...	...	...	...	21	22	43	4.1
71	Tiruvavur ...	12	9	1	...	...	...	...	...	13	9	22	2.3
72	Mannargudi ...	30	22	...	...	2	...	5	5	37	27	64	10.1
	<i>Tinnevely District.</i>												
73	Tuticorin ...	23	19	4	1	8	3	...	...	35	23	58	2.7
74	Tinnevely ...	47	24	7	7	1	...	...	...	55	31	86	4.1
75	Palamcottah ...	52	37	8	7	2	1	...	...	62	45	107	9.5
	<i>Trichinopoly District.</i>												
76	Trichinopoly ...	65	61	24	10	15	15	...	2	104	88	192	3.5
77	Srirangam ...	25	27	...	...	...	...	...	...	25	27	52	5.9
78	Karur ...	14	8	...	2	1	...	...	...	15	10	25	3.1
	<i>Vizagapatam District.</i>												
79	Vizagapatam ...	20	25	2	1	...	...	...	...	22	26	48	2.1
80	Vizianagram ...	24	22	2	...	...	...	...	...	26	22	48	2.6
81	Anakapalle ...	18	17	1	...	...	...	...	...	19	17	36	3.9
82	Chicacole ...	7	5	...	1	...	...	...	...	7	6	13	2.0
83	Bimlipatam ...	5	10	...	...	...	...	...	...	5	10	15	4.2
	Grand total ...	3,362	2,273	533	437	217	187	29	26	4,141	3,373	7,514	4.8

No. II.—Statement showing Deaths registered in the Districts in the Province of Madras during the year 1938.

Number. (1)	Districts. (2)	Area in square miles. (3)	Average popu- lation per square mile. (4)	Number of deaths registered.			Ratio of deaths per 1,000 of population from				
				Males. (5)	Females. (6)	Total. (7)	Cholera. (8)	Smallpox. (9)	Plague. (10)	Fevers. (11)	
1	Anantapur ...	6,741	155.8	13,752	13,822	27,574	0.22	0.02	0.04	6.23	
2	Bellary ...	5,713	169.7	12,595	12,203	24,798	0.80	0.01	0.66	6.63	
3	Chingleput ...	3,091	535.1	20,074	19,423	39,497	0.28	0.24	...	3.59	
4	Chittoor ...	5,901	245.2	15,356	15,005	30,361	0.19	0.06	0.01	5.82	
5	Coimbatore ...	7,085	345.1	26,615	25,246	51,861	0.08	0.04	0.04	4.30	
6	Cuddapah ...	5,919	160.4	11,372	11,553	22,925	1.19	0.04	0.002	11.36	
7	Godavari, { Plains East, Agency Godavari, West	2,544	660.0	22,630	22,272	44,902	0.47	0.003	...	10.07	
8	Godavari, West ...	3,675	65.4	3,473	3,340	6,813	1.31	0.01	...	16.15	
9	Guntur ...	2,861	518.0	17,421	16,713	34,137	0.54	0.02	...	8.46	
10	Kistna ...	5,757	353.6	27,030	25,231	52,261	0.35	0.03	0.002	8.59	
11	Kurnool ...	3,547	353.5	16,535	15,824	32,359	0.29	0.03	0.002	7.55	
12	Madras ...	7,581	135.2	15,506	14,793	30,299	1.16	0.03	0.001	13.36	
13	Madura ...	29	22,194.8	13,588	12,684	26,282	0.36	0.87	...	3.65	
14	Malabar ...	4,912	446.8	24,501	23,393	48,194	0.01	0.01	0.21	3.50	
15	Nellore ...	5,794	609.8	36,366	34,748	71,114	0.03	0.01	0.01	4.82	
16	Nilgiris, The ...	7,949	186.9	18,518	17,702	36,220	0.24	0.03	0.001	8.10	
17	North Arcot ...	982	169.1	2,057	1,775	3,832	0.01	0.01	0.10	8.03	
18	Ramnad ...	4,848	487.6	24,179	23,380	47,569	0.02	0.05	0.004	4.73	
19	Salem ...	4,819	381.5	18,558	18,789	37,347	0.005	0.01	...	6.43	
20	South Arcot ...	7,058	341.7	25,333	24,676	50,059	0.01	0.04	0.07	3.64	
21	South Kanara ...	4,208	583.3	24,668	23,792	48,460	0.65	0.12	...	7.46	
22	Tanjore ...	4,021	637.5	15,371	15,435	30,806	...	0.03	0.001	2.35	
23	Tinnevely ...	3,742	474.3	27,065	27,922	54,987	0.53	0.07	...	4.11	
24	Trichinopoly ...	4,315	443.4	25,303	24,299	49,602	0.02	0.01	...	4.02	
25	Vizagapatam ...	4,314	547.2	21,933	21,497	43,430	0.16	0.02	0.0002	13.25	
		5,998		43,916	42,517	86,433	0.05	0.01	...	18.25	
	Grand total for the Province ...	125,438	352	524,065	507,987	1,032,052	0.52	0.05	0.03	6.43	
	Total of town circles in the Province ...	...	...	85,199	80,135	165,334	0.16	0.14	0.03	4.10	
	Total of rural circles in the Province ...	...	...	438,866	427,852	866,718	0.24	0.04	0.03	6.81	

No. II.—Statement showing Deaths registered in the Districts in the Province of Madras during the year 1938—cont.

Number.	Districts.	Ratio of deaths per 1,000 of population from										Mean ratio of deaths per 1,000 during previous five years.			Number.
		Dysentery and diarrhoea. (12)	Respiratory diseases. (13)	Injuries. (14)	Deaths from child birth. (15)	All other causes. (16)	All causes. (17)		Total. (18)	Males. (19)	Females. (20)	Total. (21)	Total. (22)		
							Males. (17)	Females. (18)							
1	Anantapur ..	2.10	1.82	0.48	0.52	14.68	25.49	26.66	26.06	44.43	25.33	24.82	1		
2	Bellary ..	1.82	2.09	0.30	0.29	14.35	25.55	25.59	23.57	31.52	31.56	31.55	2		
3	Chingleput ..	1.65	2.14	0.31	0.34	15.34	24.01	23.75	23.88	23.83	23.06	23.45	3		
4	Chittoor ..	2.36	1.64	0.33	0.33	10.20	20.80	21.17	20.98	21.35	21.48	21.41	4		
5	Coimbatore ..	2.58	3.32	0.35	0.25	10.28	21.85	20.58	21.21	21.66	20.84	21.25	5		
6	Cuddapah ..	1.05	1.20	0.38	0.42	8.61	23.50	25.03	24.25	22.49	22.49	22.33	6		
7	Gōdāvari, { Plains Agency	1.42	2.30	0.28	0.39	11.79	27.31	26.15	26.73	23.72	23.72	23.20	7		
8	Gōdāvari, { East. Agency	1.45	2.76	0.24	0.39	6.02	28.75	27.90	28.33	26.64	25.35	26.00	8		
9	Guntur ..	1.98	2.57	0.27	0.45	13.62	28.92	26.93	27.91	28.03	24.77	25.38	9		
10	Kistna ..	2.06	2.86	0.32	0.33	11.64	26.27	25.06	25.67	24.93	23.87	24.42	10		
11	Kurnool ..	1.64	2.44	0.33	0.44	13.10	26.01	25.58	25.80	25.64	25.30	25.52	11		
12	Madras ..	1.48	1.82	0.39	0.39	11.13	29.80	29.31	29.56	28.35	27.57	28.46	12		
13	Madras ..	3.57	11.42	0.33	0.44	20.29	39.82	41.48	40.61	37.42	38.19	38.18	13		
14	Malabar ..	1.53	3.53	0.38	0.29	12.50	22.94	21.00	21.95	25.18	28.02	24.09	14		
15	Nellore ..	1.76	2.28	0.30	0.25	10.70	21.19	19.11	20.12	22.88	20.86	21.84	15		
16	Nilgiris, The ..	1.98	1.23	0.30	0.33	12.13	24.88	23.86	24.37	23.74	22.33	23.03	16		
17	North Arcot ..	2.98	4.47	0.23	0.32	6.66	22.65	23.00	22.81	22.59	23.63	23.02	17		
18	Rannad ..	1.87	2.05	0.45	0.32	11.50	21.36	20.61	20.98	23.61	23.10	23.37	18		
19	Salem ..	1.32	2.47	0.22	0.31	9.54	21.28	19.43	20.31	23.71	21.32	22.47	19		
20	South Arcot ..	1.05	1.52	0.41	0.29	10.83	20.94	20.14	20.57	20.71	20.37	20.55	20		
21	South Kanara ..	1.33	1.54	0.26	0.31	11.90	20.14	19.36	19.74	24.12	23.40	23.78	21		
22	Tanjore ..	1.30	1.67	0.37	0.47	11.17	23.15	21.79	22.45	23.25	21.43	22.32	22		
23	Tinnevely ..	1.08	1.12	0.31	0.51	17.08	23.68	22.48	23.05	25.62	24.42	24.99	23		
24	Trichinopoly ..	1.40	1.97	0.28	0.41	16.04	25.63	22.92	24.23	27.64	25.21	26.39	24		
25	Vizagapatam ..	1.65	2.11	0.35	0.43	13.96	23.46	21.97	22.70	24.94	23.76	24.30	25		
		1.70	1.42	0.27	0.29	9.46	27.83	25.19	26.46	27.94	26.44	26.66			
	Grand total for the Province ..	1.68	2.19	0.33	0.34	12.17	24.07	22.86	23.46	24.78	23.54	24.16			
	Total of town circles in the Province ..	2.52	4.60	0.44	0.50	14.22	27.41	26.00	26.71	27.58	26.55	27.08			
	Total of rural circles in the Province ..	1.55	1.80	0.31	0.32	11.84	23.62	22.36	22.93	24.32	23.06	23.68			

No. III.—Deaths Registered in districts, exclusive of Municipalities, and in the Municipalities in the Province of Madras during each month of the year 1938.

No. III.—Deaths registered in Districts, exclusive of Municipalities, and in the

Serial number.	Districts exclusive of municipalities.	January.	February.	March.	April.	May.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Anantapur	1,874	1,504	1,822	1,974	1,936
2	Bellary	1,509	1,356	1,702	1,686	1,465
3	Chingleput	4,027	3,149	3,049	2,490	2,731
4	Chittoor... ..	3,052	2,368	2,263	2,026	2,149
5	Coimbatore	4,291	3,155	3,422	3,430	3,661
6	Cuddapah	2,094	1,267	1,466	1,545	1,783
7	Gōdāvari, East { Plains	2,986	2,286	2,503	2,404	2,823
	Agency	524	362	430	517	517
8	Gōdāvari, West	2,579	1,724	2,016	2,294	2,512
9	Guntur	3,254	2,559	3,020	2,809	3,817
10	Kistna	1,848	1,556	1,742	1,821	2,097
11	Kurnool	1,853	1,584	2,144	2,080	2,116
12	Madura	4,090	3,066	3,061	3,063	3,234
13	Malabar	4,940	4,563	4,746	5,093	5,953
14	Nellore	3,005	2,436	2,543	2,268	2,854
15	Nilgiris, The	207	179	223	244	351
16	North Arcot	4,704	3,516	3,286	3,060	3,363
17	Ramnad	3,427	2,695	2,749	2,522	2,958
18	Salem	4,435	3,515	3,729	3,629	3,991
19	South Arcot	5,278	4,096	3,675	3,238	3,435
20	South Kanara	2,508	2,236	2,050	1,751	1,915
21	Tanjore	4,488	4,055	3,854	3,562	3,745
22	Tinnevely	4,875	3,598	3,457	3,426	3,541
23	Trichinopoly	3,653	2,829	2,873	2,813	3,249
24	Vizagapatam	6,615	5,247	6,398	5,562	5,939
	Total for districts exclusive of municipalities.	82,116	64,901	68,223	65,287	72,135
	* Rate per 1,000 of population.	23.99	21.00	19.93	19.71	21.08

* The rates were calculated with reference

Municipalities in the Province of Madras during each month of the year 1938.

June.	July.	August.	September.	October.	November.	December.	Total.	Serial number.
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
1,949	2,282	2,292	2,267	2,829	2,627	2,954	26,310	1
1,815	2,192	2,210	1,977	2,102	1,810	1,988	21,812	2
2,467	3,015	3,049	2,799	3,162	3,238	3,487	36,643	3
2,089	2,361	2,361	2,300	2,801	2,770	2,771	29,311	4
3,535	4,008	4,445	4,640	4,020	3,935	4,159	46,701	5
1,428	1,740	1,832	2,249	2,349	2,065	2,218	22,036	6
3,461	4,497	4,710	3,989	3,692	3,443	3,816	40,610	7
435	592	720	667	663	640	746	6,813	8
2,417	3,302	3,371	3,052	2,895	2,523	3,891	32,576	9
4,082	5,033	5,149	4,957	4,454	3,732	4,640	47,506	10
2,304	2,946	3,075	3,105	2,478	2,397	3,074	28,441	11
2,147	3,306	3,287	2,757	2,634	2,400	2,402	28,660	12
2,963	3,089	3,323	3,257	3,292	3,369	3,408	39,215	13
6,455	7,463	6,382	5,153	5,075	4,575	4,542	64,940	14
2,562	2,908	2,859	3,259	3,182	2,934	3,563	34,353	15
304	302	225	220	220	214	224	2,913	16
3,173	3,673	3,624	3,475	3,684	3,629	4,013	43,200	17
2,538	2,638	2,794	2,905	3,109	3,030	3,102	34,465	18
3,646	3,819	4,117	4,234	4,581	3,965	4,119	47,780	19
3,325	3,656	3,740	3,775	3,831	3,850	4,273	46,172	20
2,578	3,259	2,767	2,726	2,437	2,234	2,600	29,061	21
3,378	3,822	4,127	4,176	4,176	4,389	4,299	48,073	22
3,260	3,559	3,441	3,432	3,708	4,487	4,970	45,754	23
2,539	3,040	3,241	3,589	3,904	3,297	3,655	38,712	24
6,913	8,513	7,766	6,505	7,039	7,221	8,104	81,822	
71,761	85,015	84,907	81,467	82,295	78,774	86,998	923,879	
21.66	24.84	24.81	24.59	24.05	23.78	25.42	22.93	

to the number of days in each month.

No. III.—Deaths registered in the Districts, exclusive of Municipalities and in the

Serial number.	Municipalities.	January.	February.	March.	April.	May.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Anantapur District.</i>						
1	Anantapur	49	26	32	21	24
2	Hindupur	31	22	26	18	31
3	Tadpatri	26	15	19	37	18
<i>Bellary District.</i>						
4	Bellary	124	114	129	127	86
5	Adoni	72	69	73	58	64
6	Hospet	56	49	60	53	33
<i>Chingleput District.</i>						
7	Conjeevaram	141	126	132	98	118
8	Saidapet	83	55	61	52	58
9	Chingleput	50	41	30	31	35
<i>Chittoor District.</i>						
10	Chittoor	59	41	51	38	51
11	Tirupati	47	36	38	38	43
<i>Coimbatore District.</i>						
12	Coimbatore	235	189	192	228	205
13	Erode	35	52	58	44	44
14	Pollachi	65	49	42	39	54
15	Dharapuram	39	32	29	29	38
16	Tiruppur	72	39	62	52	50
17	Udumalpet	28	19	34	21	23
<i>Cuddapah District.</i>						
18	Cuddapah	50	38	58	29	49
19	Proddatur	30	25	32	24	29
<i>Giddavari East District.</i>						
20	Cocanada	180	150	146	143	150
21	Rajahmundry	139	111	142	144	136
22	Peddapuram	24	20	17	29	26
<i>Giddavari West District.</i>						
23	Ellore	95	89	120	67	87
24	Palacole	28	19	18	27	29
<i>Guntur District.</i>						
25	Guntur	181	153	199	167	168
26	Tenali	30	80	105	54	66

Municipalities in the Province of Madras during each month of the year 1938—cont.

June.	July.	August.	September.	October.	November.	December.	Total.	Serial number.
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
15	29	47	50	49	40	37	419	1
20	24	37	38	35	25	37	344	2
23	26	25	41	27	23	21	301	3
106	138	170	152	165	136	113	1,560	4
62	90	73	71	68	66	71	825	5
44	45	69	50	60	46	36	601	6
132	126	133	135	126	162	153	1,582	7
58	97	77	71	70	73	70	825	8
35	36	48	45	30	22	44	447	9
48	33	39	40	42	40	47	529	10
49	49	40	53	47	39	42	521	11
199	201	256	195	200	215	182	2,497	12
33	46	60	53	49	50	56	580	13
48	60	61	66	59	52	47	642	14
30	33	50	49	44	33	42	443	15
48	59	74	61	48	59	67	691	16
26	19	28	19	30	25	37	307	17
43	45	57	47	72	63	34	585	18
26	26	32	32	35	26	85	404	19
153	238	220	203	171	170	149	2,073	20
129	156	247	191	174	142	165	1,876	21
35	33	40	37	26	30	26	343	22
92	96	112	109	102	110	129	1,208	23
23	33	35	30	43	37	31	353	24
189	273	327	248	239	222	216	2,582	25
61	97	72	59	60	58	83	815	26

No. III.—Deaths registered in the Districts, exclusive of Municipalities and in the

Serial number.	Municipalities.	January.	February.	March.	April.	May.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Guntūr District—cont.</i>						
27	Chirala	26	27	28	29	31
28	Ongole	47	31	61	38	60
29	Narasaraopet	29	12	29	20	32
<i>Kistna District.</i>						
30	Bezawada	122	130	152	146	142
31	Masulipatam	120	108	123	107	128
32	Gudivada	30	24	39	47	46
<i>Kurnool District.</i>						
33	Kurnool	66	63	86	78	91
34	Nandyal	33	30	41	47	37
<i>Madras.</i>						
35	Madras	2,574	2,281	2,264	1,927	2,086
<i>Madura District.</i>						
36	Madura	553	442	533	491	606
37	Dindigul	131	82	93	88	99
38	Bodinayakanur.	47	39	28	32	33
39	Periyakulam	61	45	63	43	53
40	Palni	53	33	44	46	44
41	Kodaikanal	12	6	22	8	17
<i>Malabar District.</i>						
42	Calicut	191	152	240	237	266
43	Palghat	103	83	98	111	110
44	Cannanore	69	66	62	43	59
45	Tellicherry	50	72	82	64	87
46	Cochin	48	40	33	40	45
<i>Nellore District.</i>						
47	Nellore	154	144	162	145	177
<i>Nilgiris District.</i>						
48	Ootacamund	41	45	36	47	66
49	Coonoor	34	26	30	38	37
<i>North Arcot District.</i>						
50	Vellore	149	147	169	143	147
51	Tiruvannamalai	101	67	69	53	70
52	Gudiyattam	97	70	63	60	65
53	Vaniyambadi	54	33	32	37	39
54	Tiruppattur	36	21	34	29	34
55	Walajapet	18	22	17	14	22

Municipalities in the Province of Madras during each month of the year 1938—cont

June.	July.	August.	September.	October.	November.	December.	Total.	Serial number.
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
28	41	25	32	32	34	40	373	27
45	58	52	54	42	43	54	585	28
80	41	47	45	45	36	34	400	29
127	182	200	186	172	135	154	1,848	30
126	141	149	151	127	133	110	1,523	31
41	56	85	59	48	32	40	547	32
80	105	140	98	71	87	91	1,056	33
46	64	85	58	55	46	41	583	34
1,886	2,242	2,078	1,929	2,383	2,232	2,400	26,282	35
473	467	453	500	439	528	470	5,955	36
80	81	110	99	125	100	99	1,187	37
34	34	26	32	52	35	50	442	38
53	56	57	72	74	73	74	724	39
49	40	37	63	48	44	86	532	40
14	8	11	12	9	14	6	139	41
235	295	294	236	194	172	196	2,708	42
96	123	125	104	80	69	98	1,200	43
64	78	67	59	50	52	48	717	44
101	125	97	75	73	64	52	942	45
39	59	72	66	43	53	69	607	46
140	157	158	133	157	176	900	1,867	47
53	44	61	56	45	42	38	574	48
24	17	25	47	20	28	19	345	49
134	152	145	126	128	159	164	1,763	50
49	51	45	53	59	51	59	727	51
68	67	78	94	70	56	58	846	52
31	38	34	38	27	28	25	416	53
32	29	28	44	28	35	33	381	54
17	17	19	22	25	26	17	236	55

No. III.—Deaths registered in the Districts, exclusive of Municipalities and in the

Serial number. (1)	Municipalities. (2)	January. (3)	February. (4)	March. (5)	April. (6)	May. (7)
<i>Ramnad District.</i>						
56	Virudhunagar	95	71	83	70	97
57	Srivillipattur	59	56	55	53	61
58	Karaikudi	51	39	44	37	49
59	Devakottai	51	34	36	38	37
60	Sivakasi	33	25	17	18	27
<i>Salem District.</i>						
61	Salem	210	145	195	203	148
<i>South Arcot District.</i>						
62	Cuddalore	117	109	144	126	113
63	Chidambaram	72	57	66	51	48
64	Villupuram	30	41	40	34	38
<i>South Kanara District.</i>						
65	Mangalore	101	98	102	100	100
66	Udipi	19	28	23	27	27
<i>Tanjore District.</i>						
67	Tanjore	188	170	193	174	195
68	Kumbakonam	143	142	113	130	121
69	Negapatam	122	102	125	108	130
70	Mayavaram	80	75	72	69	56
71	Mannargudi	57	49	47	39	61
72	Tiruvarur	49	40	41	33	49
<i>Tinnevely District.</i>						
73	Tuticorin	219	128	139	127	135
74	Tinnevely	138	89	135	107	130
75	Palamcottah	86	56	58	67	67
<i>Trichinopoly District.</i>						
76	Trichinopoly	373	286	353	336	312
77	Srirangam	64	46	63	66	73
78	Karur	57	46	49	32	51
<i>Vizagapatam District.</i>						
79	Vizagapatam	157	146	144	132	154
80	Vizianagram	106	105	112	91	76
81	Anakapalle	72	41	51	50	53
82	Chicacole	25	31	30	24	26
83	Bimlipatam	24	24	23	17	13
Total for municipalities ...		9,816	8,279	9,191	8,233	8,886
* Rate per thousand of population for municipalities.		31.33	29.26	29.34	27.15	28.36
Total for the province ...		91,982	73,180	77,414	78,520	81,021
* Rate per thousand of population for the province.		24.61	21.69	20.72	20.34	21.69

* The rate were calculated with reference

Municipalities in the Province of Madras during each month of the year 1938—cont.

June. (8)	July. (9)	August. (10)	September. (11)	October. (12)	November. (13)	December. (14)	Total. (15)	Serial number. (16)
80	64	84	117	96	79	73	1,009	56
50	43	51	56	74	66	48	672	57
41	49	38	34	50	45	39	519	58
37	30	35	26	26	33	43	426	59
23	11	18	19	23	26	16	256	60
153	168	201	216	209	218	213	2,279	61
89	96	106	88	116	97	112	1,313	62
46	50	36	36	49	56	52	619	63
21	40	12	21	23	30	20	356	64
99	157	123	127	134	127	120	1,388	65
40	40	33	41	26	24	29	357	66
154	145	154	157	144	184	171	2,029	67
118	106	114	129	137	173	153	1,577	68
107	81	103	96	113	137	184	1,408	69
62	57	58	56	51	62	95	793	70
46	40	46	51	66	52	44	598	71
42	33	50	46	41	49	36	509	72
98	88	127	125	104	128	215	1,633	73
90	102	134	97	132	200	123	1,477	74
63	50	56	54	51	69	61	738	75
281	227	219	282	248	254	304	3,547	76
51	48	45	51	53	60	51	671	77
32	38	50	43	31	36	35	500	78
167	232	231	170	167	141	165	2,006	79
113	174	145	102	98	88	105	1,315	80
62	92	81	54	55	52	57	700	81
30	43	32	37	26	34	39	377	82
23	19	24	21	22	14	19	243	83
8,141	9,281	9,700	9,065	9,126	9,062	9,393	108,173	
26.85	29.62	30.96	29.90	29.13	29.89	29.98	29.33	
79,902	94,296	94,607	90,582	91,421	87,836	96,391	1,032,052	
22.10	25.24	25.33	25.04	24.47	24.30	25.80	23.46	

to the number of days in each month.

R..

No. IV.—Deaths registered according to Age in the Districts exclusive of in the Province of Madras during the year 1938 (compiled with

No. 17.

in the Province of Madras during the year

Serial number. (1)	Districts exclusive of Municipalities and rural towns. (2)	Not exceeding one month.						Total of columns 5 and 8. (9)
		Males.			Females.			
		Under one week. (3)	Over one week. (4)	Total. (5)	Under one week. (6)	Over one week. (7)	Total. (8)	
1	Anantapur	1,228	783	2,011	997	614	1,611	3,622
2	Bellary	1,013	596	1,609	817	481	1,298	2,907
3	Chingleput	1,578	996	2,574	1,190	867	1,997	4,571
4	Chittoor	1,639	760	2,399	1,375	620	1,995	4,394
5	Coimbatore	3,985	1,713	5,698	3,256	1,314	4,570	10,268
6	Cuddapah	810	481	1,291	730	420	1,150	2,441
7	Godavari, Plains	2,245	710	2,955	1,639	547	2,186	5,141
8	Godavari, East, Agency	221	134	355	162	125	287	642
9	Godavari, West	1,917	659	2,576	1,355	539	1,894	4,470
10	Guntur	3,207	1,551	4,758	2,720	1,258	3,978	8,736
11	Kistna	2,722	1,923	4,645	2,063	890	2,953	7,598
12	Kurnool	1,480	923	2,403	1,197	781	1,978	4,381
13	Madura	2,308	1,349	3,657	1,784	1,010	2,794	6,451
14	Malabar	3,952	1,846	5,798	3,152	1,551	4,703	10,501
15	Nellore	1,811	891	2,702	1,604	732	2,336	5,038
16	Nilgiris, The... ..	67	57	124	68	35	103	227
17	North Arcot	1,961	1,408	3,369	1,516	1,087	2,603	5,972
18	Ramnad	1,073	1,009	2,082	902	732	1,634	3,716
19	Salem	3,097	1,564	4,661	2,621	1,240	3,861	8,522
20	South Arcot	1,130	3,099	4,229	1,535	943	2,477	6,706
21	South Kanara... ..	1,960	707	2,667	1,032	609	1,641	4,309
22	Tanjore	1,202	1,132	2,334	1,698	1,200	2,898	5,232
23	Tinnevely	2,263	1,470	3,733	1,726	1,039	2,765	6,502
24	Trichinopoly	2,326	1,265	3,591	1,582	1,603	3,185	6,776
	Vizagapatam	2,118	1,892	4,010	2,621	1,603	4,224	8,234
	Total for districts exclusive of municipalities and rural towns ...	40,580	26,067	66,647	39,242	21,045	60,287	126,934
	Total population according to the census of 1931	...	...	...	...	...	...	...
	Ratio per 1,000 of births for age periods under 1 year and per 1,000 of population and for age periods 1 year and above.	33.98	17.87	51.85	26.90	14.42	41.32	98.17

Municipalities and rural towns and in the Municipalities and rural towns reference to G.O. Ms. No. 602, P.H., dated 30th March 1931).

reference to G.O. Ms. No. 602, F.H.L., and

Over one month and not exceeding six months.			Over six months and not exceeding twelve months.			Total.			One and under five years.		Serial number.
Males.	Females.	Total.	Males.	Fe- males.	Total.	Males columns (5), (10) and (13).	Females columns (8), (11) and (14).	Total.	Males.	Females.	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
973	868	1,841	848	931	1,779	3,832	3,410	7,242	2,313	2,395	1
976	756	1,732	818	727	1,545	3,403	2,781	6,184	1,941	2,085	2
1,243	1,140	2,383	1,156	1,118	2,274	4,973	4,255	9,228	2,392	2,392	3
968	884	1,852	823	775	1,598	4,190	3,634	7,844	1,901	2,004	4
1,432	1,215	2,647	1,295	1,082	2,377	8,425	6,867	15,292	3,080	3,103	5
691	647	1,338	673	617	1,290	2,655	2,414	5,069	1,519	1,496	6
1,495	1,221	2,716	1,316	1,225	2,541	5,766	4,632	10,398	2,503	2,662	7
261	221	482	188	199	387	804	707	1,511	610	594	
1,493	1,152	2,645	1,178	1,047	2,225	5,187	4,093	9,280	2,200	2,152	8
1,742	1,432	3,174	1,237	1,147	2,384	7,737	6,557	14,294	3,417	3,146	9
722	623	1,345	584	792	1,376	5,451	4,368	9,819	1,877	1,938	10
946	850	1,796	888	805	1,693	4,237	3,633	7,870	2,731	2,741	11
1,062	928	1,990	1,032	989	2,021	5,641	4,711	10,352	2,733	2,822	12
1,496	1,301	2,797	1,825	1,655	3,480	9,119	7,659	16,778	4,805	5,021	13
993	817	1,720	1,008	901	1,909	4,618	3,954	8,567	2,527	2,513	14
86	69	155	85	98	183	295	270	565	332	279	15
1,432	1,397	2,829	1,341	1,252	2,593	6,142	5,262	11,394	3,510	3,677	16
720	673	1,393	698	722	1,420	3,500	3,029	6,529	2,282	2,384	17
1,382	1,244	2,626	1,204	1,125	2,329	7,247	6,230	13,477	3,185	3,072	18
1,276	1,191	2,466	1,303	1,232	2,535	5,677	4,900	10,577	3,018	3,393	19
1,049	993	2,042	934	821	1,755	3,892	3,455	7,347	1,710	1,930	20
1,114	983	2,097	1,024	897	1,921	5,583	4,447	10,010	2,656	2,453	21
1,104	958	2,062	1,045	978	2,023	5,954	4,892	10,846	3,034	3,170	22
964	842	1,806	1,048	929	1,977	5,395	4,392	9,787	2,708	2,622	23
3,165	2,715	5,880	2,842	2,513	5,355	11,366	9,452	20,818	5,430	5,335	24
28,624	25,120	53,744	26,793	24,577	51,370	131,064	109,984	241,048	64,914	65,410	
...	...	...	...	...	...	519,110	537,690	1,056,800	2,175,338	2,250,069	
19.02	17.22	36.84	18.36	16.85	35.21	89.83	75.38	165.21	29.83	29.07	

No. IV.—Deaths registered according to Age in the Districts exclusive of Municipalities during the year 1938 (compiled with reference to

Serial number.	Districts exclusive of Municipalities and rural towns—cont.	Five and under ten years.		Ten and under 15 years.		15 and under 20 years.		20 and under 30 years.	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
		(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
1	Anantapur ...	609	642	315	300	208	442	518	991
2	Bellary ...	533	555	232	218	179	288	491	739
3	Chingleput ...	814	722	421	430	374	487	878	1,319
4	Chittoor ...	532	518	338	311	302	485	692	1,276
5	Coimbatore ...	872	850	463	450	540	619	1,108	1,720
6	Cuddapah ...	503	522	291	292	210	379	494	996
7	Godavari, Plains ...	841	845	625	493	467	648	1,109	1,713
8	Godavari, East, Agency ...	231	247	136	117	97	141	269	358
9	Godavari, West ...	831	802	425	431	363	532	829	1,255
10	Guntur ...	920	900	489	524	468	650	1,112	1,711
11	Kistna ...	571	610	324	398	328	503	714	1,098
12	Kurnool ...	854	783	400	370	288	374	1,043	1,452
13	Madura ...	736	717	425	414	469	521	2,002	2,329
14	Malabar ...	1,371	1,459	655	653	696	728	826	1,163
15	Nellore ...	763	695	479	490	385	500	136	185
16	Nilgiris, The ...	95	63	43	30	41	43	927	1,467
17	North Arcot ...	879	582	443	428	484	715	805	1,284
18	Ramnad ...	603	517	288	291	308	424	1,295	1,923
19	Salem ...	916	969	609	597	514	738	1,250	1,829
20	South Arcot ...	1,005	936	487	459	470	800	799	1,146
21	South Kanara ...	512	555	315	298	265	491	1,168	2,189
22	Tanjore ...	764	803	495	481	555	877	803	1,300
23	Tinnevely ...	724	653	317	334	385	510	901	1,440
24	Trichinopoly ...	632	631	397	449	426	706	2,205	2,943
	Vizagapatam ...	1,672	1,552	1,040	914	981	1,090		
	Total for districts exclusive of municipalities and rural towns ...	18,833	18,428	10,433	10,172	9,903	13,689	23,091	34,912
	Total population according to the census of 1931 ...	2,450,568	2,409,271	2,245,685	2,139,279	1,623,394	1,754,859	3,134,629	3,622,423
	Ratio per 1,000 of births for age periods under 1 year and per 1,000 of population and for age periods 1 year and above.	7.68	7.65	4.65	4.76	6.10	7.80	7.37	9.64

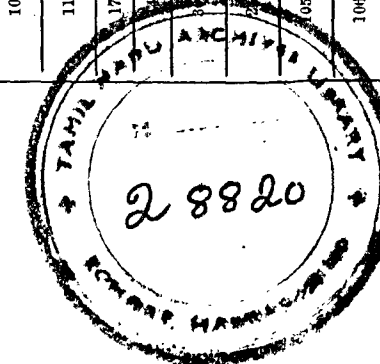
and rural towns and in the Municipalities and rural towns in the Province of Madras G.O. Ms. No. 602, P.H., dated 30th March 1931)—cont.

Serial number.	30 and under 40 years.		40 and under 50 years.		50 and under 60 years.		60 years and upwards.		Total of all ages.		Serial number.
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	
1	581	761	828	674	862	624	2,327	2,080	12,456	12,319	1
2	636	665	779	547	689	520	1,438	1,525	10,301	9,923	2
3	965	1,103	1,146	862	1,173	1,017	3,730	3,617	16,766	16,204	3
4	858	1,004	1,082	893	1,195	930	3,324	2,997	14,414	14,132	4
5	1,190	1,450	1,367	1,094	1,293	1,073	4,708	4,719	23,045	21,945	5
6	671	817	879	713	948	755	2,146	2,252	10,316	10,636	6
7	1,140	1,255	1,284	966	1,310	1,017	4,156	4,757	19,201	18,989	7
8	343	282	293	189	257	224	443	481	3,473	3,340	8
9	792	909	889	702	884	778	2,895	3,203	15,235	14,857	9
10	1,167	1,273	1,302	994	1,458	1,059	4,931	4,684	23,001	21,495	10
11	648	812	720	605	726	652	2,631	2,571	13,990	13,443	11
12	936	997	1,107	827	1,021	834	2,382	2,333	14,670	13,990	12
13	1,185	1,290	1,363	1,082	1,360	1,080	3,452	3,455	18,407	17,574	13
14	2,207	2,400	2,448	1,842	2,634	1,832	6,536	7,560	32,533	31,481	14
15	986	1,132	1,175	993	1,292	959	3,782	3,779	16,808	16,078	15
16	163	126	88	64	91	74	138	123	1,417	1,207	16
17	1,052	1,165	1,192	937	1,294	989	4,125	3,908	20,047	19,420	17
18	1,058	1,218	1,303	1,109	1,321	1,204	3,018	3,342	14,484	14,802	18
19	1,498	1,656	1,725	1,338	1,757	1,460	4,628	4,726	23,374	22,739	19
20	1,608	1,613	1,802	1,507	1,893	1,696	4,332	4,126	22,142	21,259	20
21	1,122	1,184	1,299	836	1,298	1,032	2,729	3,163	14,011	14,210	21
22	1,628	2,180	1,910	1,770	2,123	1,886	5,162	6,838	22,024	22,954	22
23	972	1,134	1,114	929	1,383	1,074	4,244	4,267	18,933	18,220	23
24	1,102	1,347	1,254	980	1,323	1,160	4,355	4,492	18,496	18,220	24
	2,695	2,768	3,246	2,485	3,335	3,063	7,352	8,747	39,322	38,399	
	27,156	30,602	31,565	25,068	33,000	26,912	88,867	92,675	438,866	427,852	
	2,670,751	2,657,642	1,864,842	1,758,686	1,121,443	1,113,458	863,865	891,494	18,659,617	19,134,871	
	10.17	11.51	16.92	14.25	29.44	24.16	104.10	103.95	23.52	22.37	

*No. IV.—Deaths registered according to Age in the Districts exclusive of Municipalities
during the year 1938 (compiled with reference to*

Serial number.	Municipalities and rural towns.	Not exceeding one month.							Over one month and not exceeding six months.			Over six months and not exceeding twelve months.			Total.		
		Males.			Females.			Total of columns (5) and (8).	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
		Under one week.	Over one week.	Total.	Under one week.	Over one week.	Total.										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Kistna District.																	
03	Bezawada	63	33	96	50	22	72	163	119	107	226	65	56	121	280	235	515
04	Masulipatam	107	40	147	82	27	109	256	107	81	188	46	41	87	300	23	531
05	Gudivada	24	15	39	19	16	35	74	62	41	103	18	25	43	119	101	220
06	Nuzvid	12	6	18	8	5	13	31	14	11	25	3	3	6	35	27	62
07	Jaggayyapeta	8	12	20	6	14	20	40	14	5	19	3	4	7	37	29	66
08	Valluru	17	9	26	7	4	11	37	5	6	11	9	5	14	40	22	62
09	Pedana	12	4	16	9	9	18	34	11	6	17	7	5	12	34	29	63
10	Vayyuru	12	4	16	16	8	24	40	9	8	17	7	4	11	32	36	68
Kurnool District.																	
11	Kurnool	39	10	49	21	6	27	76	39	39	78	34	36	70	122	102	224
12	Nandyal	34	11	45	21	7	28	73	16	12	28	13	13	26	74	53	127
Madras.																	
13	Madras	845	533	1,378	602	407	1,009	2,387	1,306	1,097	2,403	1,114	977	2,091	3,798	3,083	6,881
Madura District.																	
14	Madura	301	191	492	232	169	401	893	250	188	438	187	168	355	929	757	1,686
15	Dindigul	63	43	111	51	34	85	196	57	48	105	37	29	66	185	162	347
16	Bodinayakanur	51	11	62	48	9	57	119	11	4	15	11	8	19	84	69	153
17	Periyakulam	66	24	90	49	19	68	158	17	13	30	19	21	40	126	102	228
18	Palni	41	14	55	44	6	50	105	14	10	24	15	7	22	84	67	151
19	Kodaikanal	8	4	12	6	6	12	24	7	12	19	5	7	12	34	31	65
20	Kambam	34	5	39	28	10	38	77	21	9	30	10	5	15	70	52	122
21	Gudalur	17	13	30	27	14	41	71	21	16	37	8	8	16	59	65	124
22	Tevaram	26	18	42	14	14	28	70	15	11	26	16	13	29	73	62	125
23	Chinnamanur	14	5	19	9	7	16	35	13	12	25	19	6	25	51	34	85
24	Tirumangalam	10	10	20	9	7	16	36	5	3	8	12	9	21	37	28	65
25	Uttamapaliyam	25	8	33	14	3	17	50	14	10	24	6	8	14	53	35	88
26	Allinagar	8	7	15	11	2	13	28	9	8	17	8	3	11	32	24	56
27	Sholavandan	16	8	24	14	2	16	40	9	11	20	9	3	12	42	30	72
28	Usilampatti	7	5	12	10	5	15	27	3	4	7	5	3	8	20	22	42
29	Kombal	27	7	34	13	13	26	60	7	8	15	3	6	9	44	40	84
30	Melur	5	12	17	4	1	5	22	2	4	6	4	9	13	23	18	41
31	Nattam	9	6	15	4	3	7	22	6	3	9	6	4	10	27	14	41
32	Tiruparankundram	5	2	7	1	3	4	11	4	2	6	2	4	6	13	10	23
Malabar District.																	
33	Calicut	71	61	132	52	34	86	218	84	71	155	54	47	101	270	204	474
34	Palghat	62	35	97	45	16	61	158	47	38	85	25	24	49	169	123	292
35	Cannanore	27	10	37	18	11	29	66	32	15	47	11	11	22	80	55	135
36	Tellicherry	20	16	36	17	9	26	62	29	21	50	18	11	29	83	58	141
37	Cochin	23	11	34	19	8	27	61	24	20	44	12	11	23	70	58	128
38	Ponnani	15	16	31	9	12	21	52	15	9	24	19	11	30	65	41	106
39	Badagara	12	9	21	8	3	11	32	7	3	10	8	8	16	36	22	58
40	Tanur	6	8	14	4	5	9	23	3	3	6	11	7	18	28	19	47
Nellore District.																	
41	Nellore	116	41	157	81	38	119	278	77	71	148	42	52	94	276	242	518
42	Venkatagiri	7	2	9	3	1	4	13	10	10	20	6	3	9	25	17	42
43	Alluru	6	5	11	7	4	11	22	7	9	16	8	4	12	26	24	50
44	Kavali	6	2	8	1	1	2	10	6	4	10	6	8	14	20	14	34
45	Gudur	6	2	8	13	1	14	22	8	7	15	6	7	13	22	28	50
46	Kovuru	6	1	7	7	1	8	15	1	2	3	6	2	8	14	12	26
47	Kandukur	11	5	16	5	1	6	22	4	6	10	4	2	6	24	14	38
48	Nayadupet	2	4	6	5	...	5	11	5	5	10	3	2	5	14	12	26
49	Kanigiri	11	2	13	13	1	14	27	5	2	7	10	9	19	28	25	53

Municipalities and rural towns.	Not exceeding one month.							Over one month and not exceeding six months.			Over six months and not exceeding twelve months.			Total.		
	Males.			Females.			Total of cols. (5) and (8).	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
	Under one week.	Over one week.	Total.	Under one week.	Over one week.	Total.										
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
<i>Vizagapatam District</i>																
<i>—cont.</i>																
Tekkali	6	5	11	5	2	7	18	12	11	23			12	32	25	57
Sompeta	6	5	9	6	4	10	19	6	7	13	9	5	9	19	26	39
Srungavarapukota.	10	6	16	4	10	14	30	9	6	15	6	5	11	31	23	54
Viraghattam	9	8	17	11	4	15	32	4	4	10	6	5	11	31	24	55
Narasannapeta	6	3	9	4	4	8	17	8	6	16	6	5	11	22	26	48
Chodavaram	6	3	9	3	2	5	14	10	5	15	5	5	10	14	25	39
Modugula	6	1	7	7	7	14	15	11	6	17	5	5	10	4	20	35
Chinnamerangi	4	3	7	5	6	11	15	5	7	12	5	5	10	7	17	25
Rajani	6	5	11	5	5	10	21	6	11	17	3	6	9	20	27	47
Total for Municipalities and Rural Towns	7,393	3,896	11,289	5,583	2,974	8,557	19,846	7,013	5,901	12,914	5,331	4,791	10,122	23,633	19,249	42,882
Total population of Municipalities and Rural Towns according to the census of 1931	...	...	...	...	...	...	...	...	...	...	...	...	...	86,463	86,621	173,089
Ratio per 1,000 of births for age periods under 1 year and for 1,000 of population for age periods above 1 year.	29.45	15.62	44.98	22.24	11.85	34.09	79.07	27.94	23.50	51.45	21.24	19.09	40.33	24.16	76.69	170.84
Total for the province	56,973	29,963	86,936	44,825	24,019	68,844	155,780	55,637	31,021	86,658	32,124	29,363	61,487	154,697	129,933	283,430
Total population of the province according to the census of 1931	...	...	...	...	...	...	...	...	...	...	...	...	...	605,578	624,311	1,229,889
Ratio per 1,000 of births for age periods under 1 year and per 1,000 of population for age periods above 1 year.	33.32	17.62	50.84	26.21	14.05	40.26	91.10	29.84	18.14	38.98	18.79	17.17	35.96	90.47	75.57	166.04

[illegible]

No. IV (a).—Infantile Deaths according to Communities in the Municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 196, P.H., dated 24th January 1936).

Municipalities.	Mortality under one year among							
	Hindus.		Muhammadans.		Indian Christians.		Others.	
	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.
<i>Anantapur District.</i>								
Anantapur	52	112.55	20	111.73	...	...	...	...
Hindapur	78	172.57	14	70.71	1	76.92	...	...
Tadpatri	48	150.00	22	130.18	...	...	...	...
<i>Bellary District.</i>								
Bellary	244	177.97	142	192.15	5	79.37	...	...
Adoni	132	134.83	65	107.08	...	...	1	250.00
Hospet	132	193.55	23	111.65	...	...	...	...
<i>Chingleput District.</i>								
Conjeevaram	353	137.89	15	133.92	3	166.67	...	...
Saidapet	212	184.03	8	137.93	1	38.46	...	...
Chingleput	81	121.99	8	250.00	2	57.14	...	...
<i>Chittoor District.</i>								
Chittoor	118	133.94	9	500.00	1	55.56	...	...
Tirupati	118	175.08	6	115.38	...	...	...	...
<i>Coimbatore District.</i>								
Coimbatore	562	141.99	25	106.38	25	71.85	1	58.82
Erode	108	121.21	5	41.32	9	138.36	3	66.67
Pollachi	184	219.31	16	207.79	1	41.67	...	...
Dharapuram	84	144.83	13	109.24	5	102.04	...	...
Tiruppur	176	170.54	12	129.03	5	142.86	...	...
Udamalpet	80	164.61	5	64.10	1	100.00	...	...
<i>Cuddapah District.</i>								
Cuddapah	56	108.53	56	113.36	2	76.92	...	...
Proddatur	78	140.79	26	114.54	5	106.38	...	...
<i>East Godavari District.</i>								
Cocanada	506	273.81	13	116.07	4	105.26	1	125.00
Rajshundry	519	257.31	10	104.16	14	157.30	1	454.55
Peddapuram	83	143.60	8	258.06	1	62.50	...	...

No. IV (a).—Infantile Deaths according to Communities in the Municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 196, P.H., dated 24th January 1936)—cont.

Municipalities.	Mortality under one year among							
	Hindus.		Muhammadans.		Indian Christians.		Others.	
	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.
<i>West Godavari District.</i>								
Ellore	209	101.01	40	144.40	3	38.46	...	...
Palacole	91	205.42	1	1000.00	3	300.00	...	...
<i>Guntur District.</i>								
Guntur	576	228.75	154	233.33	88	161.76	...	...
Tenali	211	122.17	30	193.55	19	193.88	...	...
Chirala	78	132.43	4	86.95	2	30.77	...	...
Ongole	108	199.63	12	200.00	20	194.17	3	111.11
Narasaraopet	127	316.71	18	148.76	10	204.09	...	...
<i>Kistna District.</i>								
Bezwada	413	206.09	63	163.63	39	203.12	...	...
Masulipatam	459	217.43	62	215.28	10	95.23	...	...
Gudivada	171	222.37	29	376.62	16	280.70	4	444.44
<i>Kurnool District.</i>								
Kurnool	99	155.52	124	154.81	1	21.74	...	...
Nandyal	82	165.99	30	103.81	9	87.38	6	157.89
<i>Madras District.</i>								
Madras	5,587	218.67	933	281.01	312	188.18	44	102.33
<i>Madura District.</i>								
Madura	1,514	193.66	118	182.38	47	90.21	7	162.79
Dindigul	255	174.42	36	149.38	55	137.16	1	1000.00
Bodinayakanur	144	147.84	7	134.61	2	117.65	...	...
Periyakulam	183	216.82	25	190.84	18	185.57	2	117.47
Palni	134	190.61	16	253.97	1	66.67	...	...
Kodaikanal	16	173.91	3	333.33	29	151.04	7	104.48
<i>Malabar District.</i>								
Calicut	231	114.58	223	150.37	19	88.79	1	142.86
Palghat	229	143.31	59	143.61	4	78.43	...	...
Cannanore	52	120.93	75	163.76	8	156.86	...	...
Tellicherry	70	146.14	64	164.10	7	148.93	...	...
Cochin	36	165.90	31	158.16	59	124.21	2	36.36
<i>Nellore District.</i>								
Nellore	387	199.48	105	238.64	24	220.18	2	666.67

No. IV (a).—Infantile Deaths according to Communities in the Municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 196, P.H., dated 24th January 1936)—cont.

Municipalities.	Mortality under one year among							
	Hindus.		Muhammadans.		Indian Christians.		Others.	
	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.
<i>Nilgiris, The.</i>								
Ootacamund	89	156.67	14	105.26	38	123.76	6	122.45
Coonoor	61	195.51	11	207.55	18	110.43	2	181.82
<i>North Arcot District.</i>								
Vellore	339	135.01	118	194.08	13	113.04	..	...
Tiruvannamalai	161	155.41	36	171.43	2	60.61	..	...
Gudiyattam	213	192.76	29	139.42	..	...	..	...
Vaniyambadi	44	121.88	74	178.31	2	333.33	..	...
Tiruppattur	65	109.89	33	129.92	..	...	..	...
Walajapet	39	120.00	9	155.17	..	...	..	...
<i>Ramnad District.</i>								
Virudunagar	225	196.22	13	196.97	10	123.46	..	...
Srivilliputtur	179	163.47	6	260.87	3	69.77	..	...
Karaikudi	113	164.01	5	116.28	3	115.38	..	...
Devakottai	70	118.04	4	133.33	..	...	..	...
Sivakasi	40	82.30	4	210.53	..	...	..	...
<i>Salem District.</i>								
Salem	523	140.02	20	46.37	8	95.24	..	...
<i>South Arcot District.</i>								
Cuddalore	262	141.16	19	179.24	5	87.72	47	157.72
Ohidambaram	125	175.07	5	87.72	1	142.86	..	...
Villupuram	45	89.29	8	142.86	2	111.11	12	210.53
<i>South Kanara District.</i>								
Mangalore	171	102.89	26	96.65	51	91.07	2	666.67
Udipi	63	112.50	7	162.79	8	86.02	2	222.22
<i>Tanjore District.</i>								
Tanjore	369	162.56	21	123.53	29	122.88	..	...
Kumbakonam	305	130.85	11	94.01	5	44.24	..	...
Negapatam	198	157.77	109	307.04	17	133.86	..	...
Mayavaram	117	116.42	1	83.33	..	...	..	...
Mannargudi	104	118.32	5	161.29	1	58.33	1	52.63
Tiruvarur	95	170.56	6	82.19	1	250.00	..	...
<i>Tinnevely District.</i>								
Tuticorin	339	221.57	18	178.22	83	156.31	..	...
Tinnevely	411	229.24	45	187.50	6	115.38	..	...
Palamcottah	156	168.52	6	139.53	15	120.97	..	...

No. IV (a).—Infantile Deaths according to Communities in the Municipalities in the Province of Madras during the year 1938 (prescribed in G.O. Ms. No. 196, P.H., dated 24th January 1936)—cont.

Municipalities.	Mortality under one year among							
	Hindus.		Muhammadans.		Indian Christians.		Others.	
	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.	No.	Ratio per 1,000 live births.
<i>Trichinopoly District.</i>								
Trichinopoly	530	137.48	118	145.11	93	121.73	2	55.56
Srirangam	124	140.75	..	...	..	...	..	...
Karur	136	191.82	12	187.50	2	62.5	..	...
<i>Vizagapatam District.</i>								
Vizagapatam	534	256.12	7	56.45	8	181.82	2	74.04
Vizianagram	351	203.12	15	187.50	4	333.33	..	...
Anakapalle	213	235.88	2	153.85	..	...	..	...
Ohicacole	101	163.43	5	250.00	..	...	..	...
Bimlipatam	75	224.55	3	375.00	3	272.73	..	...
Total	22,451	179.46	3,613	177.54	1,321	131.97	162	120.09

No. V.—Deaths registered according to Classes in the Districts in the Province of Madras during the year 1938.

Number of deaths registered.									
Number. (1)	Districts. (2)	Indian Christians.		Muhammadans.		Hindus.		Other classes.	
		Males.		Males.		Males.		Males.	
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Anantapur	49	54	1,129	1,092	12,582	12,461	12	15
2	Bellary	72	52	1,315	1,187	11,193	10,944	15	16
3	Chingleput	873	384	465	418	19,218	18,609	18	12
4	Chittoor	74	78	808	789	14,473	14,137	3	2
5	Coimbatore	330	314	542	563	25,740	24,367	3	2
6	Cuddapah	487	453	1,339	1,368	9,544	9,831	2	2
7	Godavari, East { Plains.	242	193	371	350	22,015	21,727	5	9
8	Godavari, East { Agency.	55	49	59	80	3,354	3,202	2	1
9	Godavari, West	788	788	371	316	16,282	15,611	5	7
10	Guntur	2,792	2,608	2,079	1,817	22,154	20,799	4	6
11	Kistna	1,220	1,154	844	808	14,487	13,558	1	1
12	Kurnool	1,074	1,070	1,988	1,942	12,444	11,780	...	105
13	Madras	608	603	1,757	1,589	11,078	10,397	145	...
14	Malabar	846	788	917	937	23,037	21,668	1	...
15	Nellore	611	594	12,407	11,783	23,339	22,364	9	7
16	Nilgiris, The	636	662	1,176	1,115	16,657	15,924	...	1
17	North Arcot	168	160	170	153	1,709	1,455	10	7
18	Ramanad	333	317	1,426	1,353	22,290	21,598	130	122
19	Salem	717	785	1,061	1,091	16,780	16,912	...	1
20	South Arcot	227	218	563	587	24,592	23,871	1	...
21	South Kanara	552	539	828	593	23,271	22,464	219	196
22	Tanjore	1,028	1,013	1,832	1,741	12,418	12,600	93	81
23	Tinnevely	927	928	1,468	1,662	24,664	25,325	6	9
24	Trichinopoly	2,512	2,493	1,506	1,379	21,285	20,428	...	1
25	Visagapatnam	1,054	1,008	788	766	20,087	19,730	4	3
		1,104	129	356	389	43,395	42,031	6	48
	Total, Madras Province	17,296	17,432	37,363	35,808	468,028	454,093	748	654

No. V.—Deaths registered according to Classes in the Districts in the Province of Madras during the year 1938—cont.

Ratio of deaths per 1,000 of population.											
Number.	Districts.	Indian Christians.		Muhammadans.		Hindus.		Other classes.			
		Males. (11)	Females. (12)	Males. (13)	Females. (14)	Males. (15)	Females. (16)	Males. (17)	Females. (18)		
1	Anantapur	14.26	17.34	22.34	22.54	25.91	27.14	19.32	28.79		
2	B. Illy	20.22	14.64	24.27	23.93	25.77	25.88	16.06	3.13		
3	Chingleput	17.98	19.23	23.85	23.89	24.18	23.88	22.30	27.21		
4	Chittoor	13.85	14.71	19.38	20.58	20.84	21.26	62.50	100.00		
5	Coimbatore	13.65	13.86	18.47	20.83	22.11	20.70	22.06	35.09		
6	Cuddapah	28.22	25.04	20.86	22.68	23.79	25.40	41.67	111.11		
7	Godavari, East { Plains.	19.30	15.24	28.28	25.81	27.43	26.33	8.00	38.86		
8	Godavari, East { Agency.	24.97	22.66	35.56	53.12	29.37	28.24	1.81	3.40		
9	Godavari, West	25.71	24.56	28.68	25.04	29.11	27.11	16.67	8.86		
10	Guntur	23.15	22.27	25.68	23.69	26.79	25.59	17.24	59.32		
11	Kistna	23.44	23.44	26.19	26.25	26.25	25.74	13.84	60.00		
12	Kurnool	28.57	29.20	26.58	27.44	30.52	29.66	...	62.50		
13	Madras	22.30	22.47	45.83	50.14	40.47	42.18	74.36	107.80		
14	Madura	20.38	18.65	20.40	20.53	23.16	21.12	31.25	...		
15	Malabar	18.55	18.03	21.80	19.82	20.95	18.79	18.11	20.23		
16	Nellore	21.07	20.01	22.63	21.76	25.25	24.22	...	33.33		
17	Nilgiris, The	12.18	12.50	25.38	35.90	24.45	24.31	22.78	25.03		
18	North Arcot	15.29	14.87	21.10	19.77	21.49	20.75	26.83	25.58		
19	Rannad	15.41	15.27	21.22	15.31	21.63	20.04	...	90.90		
20	Salem	19.19	18.43	17.54	19.70	21.07	20.23	17.24	...		
21	South Arcot	15.72	15.01	16.26	15.79	20.29	19.48	87.49	78.47		
22	South Kanara	17.41	16.03	20.79	18.90	22.29	22.98	20.83	19.45		
23	Tanjore	20.90	19.57	22.86	20.42	23.85	22.75	18.40	30.20		
24	Tinnevely	23.34	20.79	28.19	20.61	25.77	23.40	...	33.33		
25	Trichinopoly	21.06	18.92	21.98	20.62	23.87	22.21	14.76	54.55		
	Visagapatnam	15.56	20.87	27.60	26.10	28.05	25.30	5.60	5.04		
	Total, Madras Province	20.76	19.79	22.94	21.42	24.33	23.12	22.86	23.76		

and Towns in the Province of Madras during the year 1938--cont.

Injuries.					Ratio of deaths per 1,000 of population.															
Females.	Wounds and accidents.	Snake-bite and killed by wild beasts.	Rabies.	Total.	Deaths from child births.	All other causes.	Total deaths from all causes.	Cholera.	Smallpox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	Deaths from child births.	All other causes.	For the year.	Mean for the previous 5 years.	Number.	
(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)		
3 3 1	19 3 2 ... 1 1 3	6 ... 2 1 ...	3	33 7 6 5 1 1 2 4	57 6 2 5 1 2 6 ...	1,142 90 132 82 102 42 129 68 75	1,867 231 224 172 242 116 153 183 146	0·22 ... 0·19 ... 1·53 2·71 ...	0·41			6·06 5·59 6·08 3·99 6·70 8·00 1·60 9·23 5·32	3·33 1·63 0·45 2·47 2·30 1·53 0·49 1·22 4·22	3·81 1·11 0·94 0·86 0·10 0·22 0·19 1·36 2·75	0·72 0·46 0·58 0·48 0·10 0·32 0·12 0·25 0·73	1·24 0·39 0·19 0·48 0·48 4·58 0·25 0·51 ...	24·88 5·85 12·34 7·79 9·76 4·58 15·90 9·23 13·76	40·67 15·03 20·95 16·35 23·16 12·66 18·85 24·38 26·79	39·88 18·80 17·67 18·19 22·12 16·96 24·47 23·04 26·50	141 142 143 144 145 146 147 148 149
... 																				

No. VI.—Births and Deaths from Different Causes registered in the Districts

Number.	Districts and towns.	Population for which returns were received.	Births.				Cholera.	Smallpox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Males.
			Males.	Females.	Total.	Birth-rate per mille of population.							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
B.—TOWNS—cont.													
MUNICIPALITIES AND RURAL TOWNS—cont.													
Ramnad—cont.													
196	T.C. Tondi ...	6,837	82	105	187	27.35	...	...	...	16	10	8	...
197	T.C. Kandaur ...	6,732	67	69	136	20.20	...	...	...	...	...	...	...
198	T.C. Pallattur ...	6,671	52	54	106	15.89	...	...	...	...	...	...	...
199	T.C. Kilakkurai ...	6,576	176	132	308	51.40	...	...	...	25	8	3	...
200	T.C. Pandalgudi ...	6,248	119	154	273	43.69	...	...	...	60	46	20	...
201	T.C. Emaleswaram ...	5,829	129	123	252	43.23	...	...	...	46	30	8	...
202	T.C. Nattarasankottai ...	5,668	95	95	190	33.53	...	...	...	18	7	79	...
203	T.C. Puliampatti ...	5,554	126	142	268	48.25	...	...	...	22	25	4	...
204	T.C. Kottayur ...	5,293	59	46	105	19.83	...	...	...	54	36	19	...
Salem.													
205	M.T.C. Salem ...	102,179	2,071	2,024	4,095	40.10	2	18	...	136	253	552	8
206	T.C. Dharmapuri ...	14,815	287	247	534	36.05	2	...	...	...	...	...	...
207	T.C. Rasipuram ...	14,438	269	254	523	36.24	...	1	...	66	18	17	...
208	T.C. Krishnagiri ...	12,850	261	241	502	39.07	...	...	...	93	12	38	...
209	T.C. Tiruchengodu ...	12,322	298	290	588	47.73	...	...	5	41	35	25	...
210	T.C. Attur ...	11,697	220	250	470	40.21	...	...	...	50	28	24	...
211	T.C. Sendamangalam ...	11,254	145	148	293	26.04	...	5	...	66	12	19	...
212	T.C. Namakkal ...	9,306	179	173	352	37.82	...	...	...	22	9	3	...
213	T.C. Hosur ...	6,071	118	135	253	41.67	...	...	15	52	9	...	...
South Arcot.													
214	M.T.C. Cuddalore ...	59,057	1,185	1,132	2,317	39.23	47	1	...	152	182	161	1
215	M.T.C. Chidambaram ...	25,084	412	366	778	31.02	13	...	...	83	45	82	...
216	M.T.C. Villupuram ...	20,127	351	284	635	31.56	6	...	...	44	39	67	...
217	T.C. Tindivanam ...	18,856	324	322	646	34.27	...	5	...	49	27	18	...
218	T.C. Panruti ...	13,952	188	165	353	25.30	...	...	...	127	8	2	...
219	T.C. Porto Novo ...	13,762	216	222	438	31.83	30	...	...	71	7	10	...
220	T.C. Nellikuppam ...	13,695	236	221	457	33.38	10	...	...	113	20	49	...
221	T.C. Tirukkoyilur ...	13,436	255	281	536	39.91	4	...	...	119	23	15	...
222	T.C. Mannargudi ...	9,109	177	151	328	36.00	4	...	...	60	12	9	...
223	T.C. Vridhachalam ...	9,016	94	118	212	23.51	...	...	...	28	20	11	...
224	T.C. Bhuvanagiri ...	8,846	97	109	206	23.29	...	...	...	55	7	13	...
225	T.C. Kallakurichi ...	7,522	134	149	283	37.62	...	...	...	91	3	13	...
226	T.C. Chinnasalem ...	7,130	119	101	220	30.86	...	...	...	86	11	5	...
227	T.C. Valavanur ...	7,051	149	140	289	40.99	...	...	...	52	13	31	...
228	T.C. Srimushnam ...	6,213	100	97	197	32.22	...	...	...	38	3	...	...
229	T.C. Ulundurpet ...	6,166	128	121	249	40.38	4	...	...	32	22	...	...
South Kanara.													
230	M.T.C. Mangalore ...	66,756	1,298	1,204	2,502	37.48	...	...	...	148	103	348	6
231	M.T.C. Udipi ...	17,250	344	361	705	40.88	...	...	...	43	33	76	...
232	T.C. Kasaragod ...	9,169	204	151	355	38.72	...	...	...	43	7	26	...
233	T.C. Coondapoor ...	8,923	158	165	323	36.20	...	...	...	29	16	23	...
234	T.C. Puttur ...	7,822	150	138	288	36.82	...	...	...	61	8	...	...
235	T.C. Karkal ...	7,204	220	186	406	56.36	...	...	...	68	19	33	...
236	T.C. Mulki ...	5,504	116	108	224	40.70	...	...	...	18	3	13	...
Tanjore.													
237	M.T.C. Tanjore ...	66,889	1,355	1,326	2,681	40.09	2	2	...	184	185	290	1
238	M.T.C. Kumbakonam ...	62,317	1,298	1,266	2,564	41.15	3	...	...	175	78	151	...
239	M.T.C. Negapatam ...	48,527	894	845	1,739	35.84	4	...	...	108	165	212	...
240	M.T.C. Mayavaram ...	31,887	522	516	1,038	32.66	9	...	...	12	92	191	...
241	M.T.C. Mannargudi ...	22,764	484	462	946	41.56	5	...	...	53	44	58	...
242	M.T.C. Tiruvarur ...	20,371	349	285	634	31.12	...	...	...	46	57	94	...
243	T.C. Vedaranniyam ...	15,036	215	231	446	29.67	...	...	...	16	20	...	...
244	T.C. Shiyali ...	12,814	225	204	429	33.49	...	...	...	59	24	...	...
245	T.C. Tranquebar ...	12,796	221	228	449	35.10	...	...	...	52	37	19	...
246	T.C. Tiruvadamardur ...	12,759	159	169	328	25.73	...	...	...	50	4	15	...
247	T.C. Pattukkottai ...	10,981	148	152	300	27.32	...	...	...	40	11	...	...
248	T.C. Adirampattam ...	10,893	202	198	400	36.73	...	...	...	18	16	2	...

No. VI.—Births and Deaths from Different Causes registered in the Districts

Number.	Districts and towns.	Population for which returns were received.	Births.				Cholera.	Smallpox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Suicides.
			Males.	Females.	Total.	Birth-rate per mille of population.							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
B.—TOWNS—cont.													
MUNICIPALITIES AND RURAL TOWNS—cont.													
<i>Vizagapatam.</i>													
303	M.T.C. Vizagapatam ...	57,303	1,150	1,130	2,280	39.79	1	1	...	216	338	339	4
304	M.T.C. Vizianagram ...	44,696	930	892	1,822	40.77	1	...	...	61	151	161	1
305	M.T.C. Anakapalle ...	23,376	473	445	918	39.28	3	...	...	40	122	231	2
306	M.T.C. Chicacole ...	16,588	347	297	644	38.84	...	...	...	14	149	91	...
307	M.T.C. Bimlipatam ...	9,629	184	169	353	36.66	...	...	...	21	96	39	2
308	T.C. Bobbili ...	20,544	341	317	658	33.50	...	...	...	194	30	69	...
309	T.C. Sahrur ...	17,899	359	354	693	38.74	...	...	...	188	83	19	3
310	T.C. Parvatipuram ...	17,434	309	259	568	32.57	...	1	...	201	7	3	2
311	T.C. Narasapatam ...	14,005	272	254	526	37.56	...	...	...	129	14	12	1
312	T.C. Yellamanchilli ...	11,763	184	169	353	30.02	...	...	...	98	35	38	5
313	T.C. Palkonda ...	11,102	193	213	406	36.54	...	...	...	199	45	10	1
314	T.C. Ichchapuram ...	10,813	202	197	399	38.12	...	1	...	101	70	21	1
315	T.C. Narasannapeta ...	9,607	125	149	272	28.14	...	...	...	65	16	5	...
316	T.C. Tekkali ...	8,675	143	142	285	32.85	...	...	...	84	21	24	1
317	T.C. Sompeta ...	8,086	169	134	303	37.47	...	...	...	55	18	20	...
318	T.C. Srungavarapu-kota.	7,330	110	143	253	34.52	...	...	...	33	24	40	1
319	T.C. Viraghattam ...	6,757	135	146	281	41.59	...	...	...	40	25	28	...
320	T.C. Chodavaram ...	6,524	123	86	209	31.55	...	...	...	40	6	6	...
321	T.C. Mudugula ...	6,346	117	109	226	35.61	...	...	...	52	2	2	...
322	T.C. Chinamerangi ...	5,770	101	100	201	34.84	...	...	...	83	17	15	...
323	T.C. Rajam ...	5,374	86	108	194	36.10	...	...	...	96	5	2	...
Total, town circles *...			128,273	122,759	251,032	...	1,001	866	160	25,408	15,585	28,464	279
Total, rural districts...			745,436	713,077	1,458,513	...	9,251	1,407	995	257,300	58,479	67,956	1,598
Total, Madras Province ...			873,709	835,836	1,709,545	...	10,252	2,273	1,155	282,708	74,064	96,420	1,877

* The maternal mortality rates calculated per 1,000 births (live and still) are given in annexures D and E. As in all population, to show the relative contribution of this important cause of death to the total mortality in each area.

and Towns in the Province of Madras during the year 1938—cont.

Injuries.					Deaths from child births.	All other causes.	Total deaths from all causes.	Ratio of deaths per 1,000 of population.													From all causes.		N ^o
Females.	Wounds and accidents.	Snake-bite and killed by wild beasts.	Rabies.	Total.				Cholera.	Smallpox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory dis- eases.	Injuries.	*Deaths from child births.	All other causes.	For the year.	Mean for the previ- ous 5 yrs.					
																	(32)	(33)					
(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)					
10	29	1	3	47	14	1,050	2,006	0.02	0.02	...	3.77	5.90	5.92	0.82	0.24	18.32	25.01	32.72	303				
...	16	...	7	24	14	903	1,315	0.02	...	...	1.36	3.38	3.60	0.54	0.31	20.20	29.42	28.49	304				
3	7	1	...	13	15	276	700	0.13	...	...	1.77	5.22	9.89	0.56	0.64	11.81	29.95	28.16	305				
1	4	2	...	7	10	106	377	...	...	...	0.84	8.99	5.49	0.42	0.59	6.39	22.74	21.64	306				
...	...	...	...	2	2	143	243	...	...	...	2.18	3.74	4.05	0.21	0.21	14.85	25.24	23.99	307				
...	3	...	...	3	13	199	608	...	...	...	9.44	1.46	3.36	0.15	0.63	9.69	24.73	20.52	308				
...	2	...	1	9	2	218	469	...	...	...	10.50	1.84	1.06	0.50	0.11	12.18	26.22	30.28	309				
3	1	...	...	3	4	166	385	...	0.06	...	11.53	0.40	0.17	0.17	0.23	9.52	22.69	21.89	310				
...	...	...	...	6	1	184	346	...	...	...	9.21	1.30	0.86	0.07	0.43	12.14	24.71	19.96	311				
6	1	...	...	12	3	21	207	...	...	...	8.33	2.98	3.23	1.02	0.26	1.79	17.60	21.81	312				
1	...	...	...	2	5	87	348	...	...	...	17.92	4.05	0.90	0.18	0.45	7.84	31.35	27.45	313				
...	...	1	...	...	...	31	226	...	0.10	...	9.79	6.79	2.04	0.19	...	3.01	21.92	23.06	314				
...	...	...	...	1	2	92	181	...	...	...	6.72	1.65	0.52	0.10	0.21	9.52	18.72	19.80	315				
...	...	...	...	...	3	117	250	...	...	...	9.68	2.42	2.77	0.12	0.35	13.49	28.82	27.82	316				
...	...	...	...	...	7	50	163	...	...	...	6.80	2.23	2.47	0.49	0.87	7.30	20.16	22.78	317				
2	4	...	...	4	...	94	195	...	...	...	4.60	3.27	5.46	0.55	...	12.82	26.60	24.12	318				
...	...	...	...	...	2	88	183	...	...	...	5.92	3.70	4.14	...	0.30	13.02	27.08	22.91	319				
...	...	...	...	...	4	94	150	...	...	...	6.04	0.91	0.91	...	0.60	14.19	22.64	28.89	320				
2	4	...	...	6	2	98	162	...	...	...	8.19	0.32	0.32	0.95	0.32	15.44	25.53	29.12	321				
...	...	...	...	1	2	57	175	...	...	...	15.38	2.95	2.60	0.17	0.35	9.88	31.32	27.94	322				
...	3	...	...	3	...	47	163	...	...	...	17.86	0.93	0.37	0.56	...	8.75	28.47	28.84	323				
235	1,874	168	149	2,705	3,112	88,038	165,334	0.16	0.14	0.03	4.10	2.52	4.60	0.44	0.10	14.22	26.71	27.08					
1,797	5,072	2,207	960	11,634	12,280	447,416	866,718	0.24	0.04	0.03	6.81	1.55	1.80	0.31	0.32	11.84	22.93	23.68					
2,032	6,946	2,375	1,109	14,339	15,392	535,449	1,032,052	0.52	0.05	0.03	6.43	1.68	2.19	0.33	0.34	12.17	23.46	24.18					

previous annual reports, the death-rates from child birth are given in this statement, as in the case of other heads, per 1,000

No. VI (a) (Optional).—Deaths registered from Certain Causes

No. VI (a) (Continued)

Serial number.	Municipalities.	Malaria.		Enteric fever.		Measles.		Relapsing fever.		Kala-Azar.		Influenza.	
		Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>Anantapur.</i>													
1	Anantapur ...	...	...	11	0.73	...	...	...	...	...	...	2	0.13
2	Hindupur ...	...	...	13	0.91	4	0.28	...	...	...	...	...	...
3	Tadpatri ...	60	4.75	15	1.19	...	...	1	0.08	...	...	...	...
<i>Bellary.</i>													
4	Bellary ...	59	1.24	14	0.29	...	...	...	...	...	...	1	0.003
5	Adoni ...	...	...	...	...	...	...	...	...	...	...	...	...
6	Hospet ...	11	0.51	18	0.83	3	0.14	...	...	...	...	...	...
<i>Chingleput.</i>													
7	Conjeevaram ...	11	0.17	19	0.29	8	0.12	...	...	...	...	4	0.06
8	Saidapet ...	6	0.18	8	0.24	11	0.33	...	...	...	...	...	...
9	Chingleput ...	4	0.28	8	0.56	3	0.21	...	...	...	...	...	...
<i>Chittoor.</i>													
10	Chittoor ...	2	0.09	9	0.41	2	0.09	...	...	...	...	6	0.27
11	Tirupati ...	8	0.42	7	0.37	1	0.05	...	...	...	...	...	...
<i>Coimbatore.</i>													
12	Coimbatore ...	10	0.11	32	0.34	4	0.04	...	...	...	...	4	0.04
13	Erode ...	59	1.75	13	0.39	4	0.12	...	...	...	...	1	0.05
14	Pollachi ...	14	0.63	8	0.36	...	...	...	...	...	...	...	...
15	Dharapuram ...	5	0.27	2	0.11	...	...	...	...	...	...	2	0.11
16	Tiruppur ...	7	0.39	12	0.66	1	0.06	...	...	...	...	...	...
17	Udumalpet ...	4	0.33	4	0.33	...	...	...	...	...	...	...	...
<i>Cuddapah.</i>													
18	Cuddapah ...	18	0.80	14	0.82	...	...	...	...	...	...	1	0.04
19	Proddatur ...	40	1.99	10	0.50	2	0.10	...	...	...	...	...	...
<i>Godavari, East.</i>													
20	Rajahmundry ...	9	0.86	17	0.26	1	0.02	...	...	...	...	31	0.47
21	Cocanada ...	57	0.14	29	0.44	...	...	...	...	...	...	1	0.02
22	Peddapuram ...	...	...	...	...	...	...	...	...	...	...	...	...
<i>Godavari, West.</i>													
23	Ellore ...	27	0.47	27	0.47	...	...	...	...	...	...	...	...
24	Palacole ...	26	1.54	7	0.41	2	0.12	...	...	...	...	...	...
<i>Guntur.</i>													
25	Guntur ...	72	1.10	91	1.40	2	0.03	1	0.02	...	...	3	0.05
26	Tenali ...	13	0.38	38	1.10	3	0.09	...	...	...	...	6	0.17
27	Chirala ...	1	0.05	14	0.74	2	0.11	...	...	...	...	5	0.30
28	Onigole ...	43	2.58	20	1.74	...	...	...	...	...	...	...	...
29	Narasaraopet ...	49	3.18	9	0.55	1	0.06	...	...	...	...	...	...
<i>Kistna.</i>													
30	Bezwada ...	59	0.98	80	1.32	2	0.03	...	...	...	...	1	0.02
31	Masulipatam ...	11	0.19	39	0.68	2	0.04	...	...	...	...	2	0.04
32	Gudivada ...	4	0.33	16	1.32	...	...	...	...	...	...	1	0.08
<i>Kurnool.</i>													
33	Kurnool ...	18	0.51	31	0.88	15	0.42	...	...	...	...	3	0.08
34	Nandyal ...	20	0.88	11	0.49	...	...	...	...	...	...	2	0.09

in the Municipalities in the Province of Madras during the year 1938.

Serial number.	Municipalities.	Other fevers.		Dysentery.		Diarrhoea.		Pneumonia.		Other respiratory diseases.		Pulmonary tuberculosis.		Deaths from child-birth.	Deaths under one year.			Infantile mortality rate per 1,000 live births.	Serial number.
		Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.	Deaths.	Rate per mille.		Males.	Females.	Total.		
		(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)		(19)	(20)	(21)		
55	...	3.64	...	0.73	...	1.06	...	0.79	...	0.40	...	1.85	...	11	40	32	72	110.09	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	12	54	39	93	140.27	2
7	...	0.55	...	0.79	...	1.51	...	0.79	...	0.55	...	2.30	...	10	31	39	70	140.26	3
12	...	0.25	...	1.60	...	2.08	...	5.86	...	0.65	...	2.96	...	34	240	151	391	179.44	4
...	...	0.03	...	1.07	...	1.26	...	2.78	...	2.30	...	2.92	...	10	108	90	198	123.90	5
10	...	0.46	...	0.51	...	2.81	...	2.81	...	1.38	...	2.58	...	9	76	79	155	173.38	6
44	...	0.87	...	1.47	...	1.52	...	3.95	...	0.51	...	1.27	...	57	213	158	371	137.92	7
22	...	0.67	...	2.00	...	1.73	...	2.15	...	1.76	...	1.70	...	9	114	107	221	178.37	8
26	...	1.81	...	2.09	...	2.30	...	3.41	...	0.70	...	1.60	...	20	48	43	91	124.49	9
6	...	0.27	...	0.86	...	0.41	...	1.41	...	0.23	...	0.73	...	24	76	52	128	25.74	10
71	...	3.71	...	1.52	...	2.87	...	1.67	...	0.16	...	2.25	...	13	70	54	124	168.94	11
43	...	0.45	...	1.51	...	1.18	...	2.90	...	1.44	...	1.99	...	53	323	290	613	134.70	12
...	...	...	...	1.43	...	0.33	...	1.57	...	0.50	...	1.07	...	13	63	62	125	111.31	13
87	...	3.93	...	1.58	...	0.81	...	3.71	...	1.40	...	0.99	...	14	111	90	201	213.83	14
...	...	...	...	3.18	...	1.15	...	2.25	...	0.05	...	2.91	...	5	54	48	102	136.36	15
41	...	2.27	...	3.54	...	2.33	...	3.27	...	1.83	...	2.38	...	18	116	77	193	168.38	16
3	...	0.25	...	2.22	...	0.66	...	3.12	...	0.16	...	1.23	...	6	51	35	86	149.83	17
72	...	3.19	...	1.84	...	3.68	...	3.04	...	1.93	...	2.46	...	78	56	58	114	169.93	18
18	...	0.89	...	1.14	...	0.25	...	2.09	...	0.84	...	0.80	...	14	66	43	109	131.43	19
139	...	2.11	...	2.11	...	0.99	...	1.59	...	2.34	...	1.05	...	25	297	227	524	244.60	20
299	...	4.63	...	0.79	...	1.17	...	0.65	...	0.85	...	1.14	...	31	313	231	544	261.48	21
103	...	5.94	...	0.63	...	0.06	...	...	...	0.12	...	1.04	...	10	51	41	92	147.20	22
222	...	3.87	...	1.71	...	0.51	...	0.80	...	0.14	...	1.17	...	28	124	128	252	103.96	23
7	...	0.41	...	1.24	...	1.01	...	0.71	...	1.42	...	1.06	...	10	52	43	95	209.25	24
271	...	4.16	...	1.10	...	2.13	...	2.07	...	0.55	...	2.16	...	80	460	368	818	216.66	25
72	...	2.08	...	0.84	...	1.21	...	0.55	...	0.20	...	1.42	...	9	137	123	260	192.45	26
81	...	4.30	...	0.42	...	0.53	...	0.11	...	0.11	...	0.74	...	16	56	28	84	120.00	27
...	...	...	...	2.46	...	3.90	...	4.66	...	0.12	...	3.36	...	19	75	68	143	195.62	28
94	...	6.10	...	1.17	...	1.95	...	...	...	0.39	...	1.17	...	6	93	62	155	270.96	29
130	...	2.15	...	1.29	...	0.78	...	2.52	...	0.78	...	1.51	...	28	280	235	515	199.46	30
33	...	1.63	...	0.81	...	1.07	...	1.55	...	0.68	...	1.21	...	32	300	231	531	211.98	31
55	...	4.55	...	1.74	...	3.06	...	3.80	...	0.74	...	2.73	...	11	119	101	220	241.23	32
66	...	1.87	...	1.05	...	1.76	...	1.93	...	1.36	...	2.94	...	26	122	102	224	131.46	33
47	...	2.08	...	1.33	...	0.18	...	3.85	...	1.02	...	1.90	...	13	74	53	127	137.44	34

Note.—Deaths from Cerebro spinal fever are nil. Deaths from Beri-beri, Typhous fever, of joints, other Tubercular diseases, Whooping

Acute-Poliomyelitis, Diphtheria, Black-water fever, Mumps, Tuberculosis
cough, Leprosy and Cancer are not available.

No. VII.—Deaths from Cholera registered in the Districts in the Province of Madras during each month of the year 1938.

Number. (1)	Districts. (2)	Circles of registration. (Taluk and Municipality.)		Villages or groups of villages and towns from which vital statistics returns were received.		January. (7)	February. (8)	March. (9)	April. (10)	May. (11)	June. (12)	July. (13)
		Number. (3)	Number from which deaths were reported. (4)	Number. (5)	Number from which deaths were reported. (6)							
1	Anantapur	12	7	880	39	...	1	...	...	2	4	1
2	Bellary	12	7	913	23	...	...	...	...	1	...	...
3	Chingleput	10	9	2,177	118	328	...	...	...	...	...	...
4	Chittoor	11	8	2,254	6	169	...	...	...	...	...	...
5	Coimbatore	16	7	1,201	35	149	...	...	...	...	...	...
6	Cuddapah	10	10	1,037	216	268	...	...	...	...	...	...
7	Godavari, East	11	11	817	181	1	...	...	...	...	...	...
8	Godavari, West	5	5	1,095	69	...	...	...	...	...	...	...
9	Guntur	9	9	746	182	7	...	...	...	...	...	...
10	Kistna	14	14	947	129	...	...	...	...	...	...	...
11	Kurnool	12	12	994	90	14	...	...	...	...	...	...
12	Madras	11	11	829	206	...	...	...	...	...	...	...
13	Madura	1	1	1	1	...	...	...	...	...	...	...
14	Malabar	14	4	1,089	4	...	...	...	...	...	...	...
15	Nellore	15	3	766	4	...	...	...	...	...	...	...
16	Nilgiris, the	14	14	1,708	100	...	...	...	...	...	...	...
17	North Arcot	5	1	62	1	...	...	...	...	...	...	...
18	Ramnad	17	10	2,039	23	...	...	...	...	...	...	...
19	Salem	14	1	1,522	1	...	...	...	...	...	...	...
20	South Arcot	11	7	1,785	12	...	...	...	...	...	...	...
21	South Kanara	11	10	2,270	303	...	...	...	...	...	...	...
22	Tanjore	8	...	819	...	...	...	...	...	...	...	...
23	Tinnevely	17	16	2,598	298	...	...	...	...	...	...	...
24	Trichinopoly	12	6	1,109	22	...	...	...	...	...	...	...
25	Vizagapatam	10	9	1,163	81	...	...	...	...	...	...	...
		23	13	4,053	43	...	...	...	...	...	...	...
	Total, Madras Province	305	205	84,830	2,212	2,256	1,034	428	741	458	714	1,509

No. VII.—Deaths from Cholera registered in the Districts in the Province of Madras during each month of the year 1938st cont.

Number.	Districts.	August. (14)	September. (15)	October. (16)	November. (17)	December. (18)	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.
							Males. (19)	Females. (20)	Total. (21)	Males. (22)	Females. (23)	Total. (24)	
1	Anantapur	4	88	130	17	...	110	117	227	0.20	0.23	0.22	0.02
2	Bellary	2	26	49	6	...	34	44	78	0.07	0.09	0.80	0.62
3	Chingleput	...	...	3	1	1	250	209	459	0.30	0.26	0.28	0.66
4	Chittoor	...	...	...	2	...	144	129	273	0.20	0.18	0.31	0.50
5	Coimbatore	...	...	...	...	...	112	88	198	0.09	0.07	0.08	0.50
6	Cuddapah	...	...	...	...	...	543	582	1,125	1.13	1.25	1.19	0.60
7	Godavari, East	...	...	...	...	...	382	415	797	0.46	0.49	0.47	0.18
8	Godavari, West	...	...	...	...	...	147	168	315	1.22	1.40	1.31	0.22
9	Guntur	...	...	...	...	...	363	302	665	0.60	0.49	0.54	0.35
10	Kistna	...	...	...	...	...	367	341	708	0.36	0.34	0.35	0.29
11	Kurnool	...	...	...	...	...	193	175	368	0.30	0.29	0.29	0.34
12	Madras	...	...	...	...	...	594	591	1,185	1.14	1.17	1.16	0.35
13	Madura	...	...	...	...	...	19	17	36	0.06	0.06	0.06	0.23
14	Malabar	...	...	...	...	...	11	1	12	0.01	0.01	0.01	0.22
15	Nellore	...	...	...	...	...	193	163	356	0.003	0.003	0.003	0.04
16	Nilgiris, the	...	...	...	...	...	...	...	...	...	...	...	0.49
17	North Arcot	...	...	...	...	...	...	...	...	...	...	...	0.80
18	Ramnad	...	...	...	...	...	...	...	...	...	...	...	0.38
19	Salem	...	...	...	...	...	...	...	...	...	...	...	1.33
20	South Arcot	...	...	...	...	...	...	...	...	...	...	...	0.02
21	South Kanara	...	...	...	...	...	...	...	...	...	...	...	1.16
22	Tanjore	...	...	...	...	...	...	...	...	...	...	...	0.75
23	Tinnevely	...	...	...	...	...	...	...	...	...	...	...	0.81
24	Trichinopoly	...	...	...	...	...	...	...	...	...	...	...	0.07
25	Vizagapatam	...	...	...	...	...	...	...	...	...	...	...	...
	Total, Madras Province	1,037	959	663	148	246	5,290	4,962	10,252	0.24	0.21	0.23	0.52

No. VIII.—Deaths from Smallpox registered in the Districts in the Province of Madras during each month of the year 1938.

Number.	Districts.	Circles of registration (Tahsils and municipalities).		Villages or groups of villages and towns from which vital statistics returns were received.		January.	February.	March.	April.	May.	June.	July.	August.
		Number.	Number from which deaths from smallpox were reported.	Number.	Number from which deaths from smallpox were reported.	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Anantapur	12	8	880	11	...	1	1	...	7	3	2	1
2	Bellary	12	3	913	4	...	44	53	41	25	24	58	1
3	Chingleput	10	9	2,177	146	33	...	7	...	...	...	...	38
4	Chittoor	11	9	2,254	35	1	13	11	9	3	6	10	8
5	Coimbatore	16	10	1,201	24	...	...	...	...	...	...	3	2
6	Cuddapah	10	5	1,087	12	...	...	...	...	...	...	1	3
7	Godāvāri, East { Plains Agency	11	2	817	2	...	...	...	...	...	...	...	...
8	Godāvāri, East { Agency	5	1	1,095	2	...	...	...	...	...	...	...	...
9	Godāvāri, West	9	4	746	11	1	2	...	...	...	...	...	...
10	Guntur	14	9	947	17	4	1	...	...	...	...	...	...
11	Kistna	12	3	934	3	...	...	...	...	...	...	...	...
12	Kurnool	11	1	829	7	...	...	...	...	...	...	...	...
13	Madras	14	1	1,069	16	...	...	...	...	...	...	...	...
14	Madura	15	7	768	24	...	...	...	...	...	...	...	...
15	Malabar	14	12	1,708	44	7	80	11	5	2	3	...	...
16	Nellore	5	2	62	2	...	...	...	...	...	...	...	...
17	North Arcot	17	11	2,039	60	13	...	...	...	...	...	...	...
18	Ramnad	14	6	1,522	15	14	1	3	2	2	1	...	...
19	Salem	11	10	1,768	45	12	9	8	8	6	10	...	...
20	South Arcot	11	10	2,270	112	43	47	36	16	16	32	...	...
21	South Kanara	8	5	819	20	...	...	...	...	...	...	...	...
22	Tanjore	17	17	2,586	84	13	16	23	25	16	7	...	...
23	Tinnevely	12	3	1,108	6	...	...	...	...	...	...	...	...
24	Trichinopoly	10	6	1,163	26	...	...	...	...	...	...	...	...
25	Vizagapatam	23	14	4,053	26	7	5	3	10	4	3	5	4
Total, Madras Province		305	182	34,830	755	284	277	273	217	174	150	187	177

No. VIII.—Deaths from Smallpox registered in the Districts in the Province of Madras during each month of the year 1938—cont.

Number.	Districts.	September.	October.	November.	December.	Total.		Number of deaths among children.		Ratio of death per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.
		(15)	(16)	(17)	(18)	Males.	Females.	Under 1 year.	From 1 to 10 years.	Males.	Females.	Total.	
1	Anantapur	1	1	...	2	10	9	9	6	0.02	0.02	0.02	0.32
2	Bellary	...	...	5	3	6	3	3	5	0.01	0.01	0.01	0.27
3	Chingleput	19	9	10	34	201	188	66	115	0.24	0.23	0.24	0.31
4	Chittoor	3	12	3	18	40	41	32	25	0.05	0.05	0.05	0.21
5	Coimbatore	...	3	2	...	32	27	24	29	0.03	0.02	0.02	0.14
6	Cuddapah	3	9	1	16	18	16	9	4	0.04	0.03	0.04	0.38
7	Godāvāri, East { Plains Agency	1	...	...	...	3	2	...	1	0.004	0.002	0.003	0.16
8	Godāvāri, West	...	...	...	...	2	9	...	3	0.02	0.01	0.02	0.03
9	Guntur	...	...	2	25	10	35	12	23	0.03	0.03	0.03	0.15
10	Kistna	...	...	...	1	8	3	10	8	0.01	0.005	0.01	0.17
11	Kurnool	...	...	...	1	15	19	13	14	0.03	0.04	0.03	0.58
12	Madras	22	15	29	45	267	294	41	118	0.78	0.96	0.87	0.38
13	Madura	...	...	1	...	10	8	7	3	0.01	0.01	0.01	0.14
14	Malabar	2	...	6	5	21	18	6	1	0.01	0.01	0.01	0.14
15	Nellore	1	...	...	...	53	43	20	35	0.07	0.06	0.06	0.19
16	Nilgiris, The	...	...	...	...	2	...	2	...	0.02	...	0.01	0.10
17	North Arcot	2	4	7	17	45	62	30	30	0.04	0.05	0.05	0.21
18	Ramnad	...	...	...	...	12	11	19	3	0.01	0.01	0.01	0.33
19	Salem	7	5	4	16	55	43	43	34	0.05	0.04	0.04	0.23
20	South Arcot	11	14	27	18	149	151	103	85	0.12	0.12	0.12	0.34
21	South Kanara	11	4	4	3	26	19	2	10	0.04	0.03	0.03	0.11
22	Tanjore	16	8	10	18	79	91	87	24	0.07	0.07	0.07	0.34
23	Tinnevely	...	1	...	5	6	5	3	2	0.01	0.005	0.01	0.19
24	Trichinopoly	...	...	2	4	14	19	15	15	0.01	0.02	0.02	0.11
25	Vizagapatam	3	...	1	5	28	19	30	4	0.02	0.01	0.01	0.10
Total, Madras Province		108	87	115	244	1,138	1,135	596	583	0.05	0.05	0.05	0.21

No. IX.—Deaths from Fevers registered in the Districts in the Province of Madras during each month of the year 1938

NO. 1A.—Deaths from Fevers by

Number.	Districts.	Circles of registration (Taluk and Municipalities).		Villages or groups of villages and towns from which vital statistics returns were received.		January.	February.	March.	April.	May.	June.	July.				
		Number.	(3)	Number.	(4)								Number.	(5)	Number.	(6)
1	Anantapur	12	12	880	663	480	319	437	513	447	373	470				
2	Bellary	12	12	913	682	421	410	504	531	442	520	593				
3	Chingleput	10	10	2,177	1,121	602	502	517	424	491	439	494				
4	Chittoor	11	11	2,254	1,475	840	643	748	657	659	578	639				
5	Coimbatore	16	16	1,201	915	1,034	771	901	813	867	746	814				
6	Cuddapah	10	10	1,337	955	1,384	968	774	766	897	710	809				
7	Godavari, East	11	11	817	789	1,384	968	1,081	1,003	1,140	1,845	1,681				
8	Godavari, East	5	5	1,095	782	324	218	249	261	284	240	283				
9	Godavari, West	9	9	746	639	913	514	594	641	767	739	910				
10	Guntur	14	14	947	886	1,205	909	1,230	1,097	1,508	1,451	1,686				
11	Kistna	12	12	984	793	873	485	641	590	717	702	909				
12	Kurnool	11	11	1,229	779	1,168	795	1,109	1,019	1,046	920	1,427				
13	Madras	14	14	1,069	694	764	643	577	665	713	554	636				
14	Malabar	15	15	766	633	1,310	1,266	1,305	1,371	1,629	1,701	1,951				
15	Nellore	5	5	62	57	90	87	103	118	156	142	130				
16	Nilgiris, The	17	17	2,039	1,484	1,153	846	864	841	934	825	898				
17	North Arcot	14	14	1,522	875	1,211	938	967	835	1,046	825	1,199				
18	Rannad	11	11	1,766	1,384	1,509	1,159	1,243	1,182	1,248	1,123	1,199				
19	Salem	11	11	2,270	1,425	859	733	740	631	697	643	707				
20	South Arcot	8	8	819	739	867	828	740	602	684	1,004	1,224				
21	South Kanara	17	17	2,596	1,161	507	464	450	464	512	390	464				
22	Tanjore	12	12	1,106	783	940	653	680	671	739	577	624				
23	Tinnevely	10	10	1,163	898	715	580	611	532	671	481	624				
24	Trichinopoly	23	23	4,053	3,262	3,625	2,943	3,548	3,072	3,234	3,504	4,335				
25	Vizagapatnam	304	304	34,830	25,284	24,408	19,331	21,792	20,306	22,780	21,566	25,698				
	Total, Madras Province	305	304	34,830	25,284	24,408	19,331	21,792	20,306	22,780	21,566	25,698				

No. IX.—Deaths from Fevers registered in the Districts in the Province of Madras during each month of the year 1938—cont.

Number.	Districts.	August.		September.		October.		November.		December.		Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.
		(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)					
1	Anantapur	539	498	751	750	955	3,231	3,311	6,542	5.99	6.48	6.23	7.32					
2	Bellary	632	541	609	588	640	3,223	3,223	6,432	6.51	6.76	6.63	8.38					
3	Chingleput	480	391	573	494	527	2,931	3,003	5,934	3.51	3.67	3.59	3.34					
4	Chittoor	631	630	894	774	734	4,115	4,310	8,425	5.57	6.06	5.82	5.68					
5	Coimbatore	922	963	858	848	983	5,326	5,194	10,520	4.37	4.23	4.30	4.46					
6	Cuddapah	816	999	1,155	1,108	1,185	5,416	5,371	10,787	11.19	11.54	11.36	10.00					
7	Godavari, East	1,982	1,643	1,498	1,423	1,792	8,555	8,365	16,920	10.33	9.82	10.07	8.79					
8	Godavari, West	353	389	381	388	510	2,004	1,881	3,885	16.59	15.71	16.15	16.88					
9	Guntur	800	840	961	840	1,732	5,255	5,096	10,351	8.72	8.21	8.46	7.15					
10	Kistna	1,823	1,740	1,665	1,345	1,822	9,007	8,474	17,481	8.75	8.42	8.59	8.31					
11	Kurnool	873	1,027	847	721	1,221	4,742	4,725	9,467	7.46	7.64	7.55	7.41					
12	Madras	1,522	1,213	1,248	1,211	1,255	6,994	6,703	13,697	13.44	13.28	13.36	12.66					
13	Malabar	205	198	196	160	189	1,183	1,177	2,360	3.47	3.85	3.65	3.59					
14	Malabar	596	634	650	629	629	3,945	3,745	7,690	3.65	3.36	3.50	3.64					
15	Nellore	1,679	1,332	1,265	1,098	1,134	8,695	8,346	17,041	5.07	4.59	4.82	5.70					
16	Nilgiris, The	984	1,073	1,150	1,087	1,282	6,120	5,929	12,049	8.22	7.99	8.10	6.35					
17	North Arcot	116	108	106	88	112	731	618	1,349	8.05	8.01	8.03	7.69					
18	Rannad	913	792	945	783	936	5,329	5,396	10,725	4.71	4.75	4.73	5.00					
19	Salem	960	1,038	1,075	950	1,074	5,841	5,978	11,817	6.70	6.18	6.43	7.38					
20	South Arcot	1,207	1,290	1,339	1,264	1,313	7,541	7,428	15,082	6.32	6.07	6.20	6.48					
21	South Kanara	745	670	851	805	848	4,465	4,464	8,929	3.64	3.63	3.64	4.00					
22	Tanjore	922	905	831	738	888	5,171	5,060	10,231	7.79	7.14	7.46	6.78					
23	Tinnevely	491	496	457	486	416	2,694	2,903	5,597	2.35	2.34	2.35	2.43					
24	Trichinopoly	563	595	603	757	810	4,348	4,059	8,407	4.40	3.63	4.11	4.42					
25	Vizagapatam	606	727	805	615	721	3,817	3,871	7,688	4.08	3.96	4.02	4.36					
	Total, Madras Province	4,119	3,399	3,541	3,764	4,218	21,864	21,438	43,302	13.86	12.69	13.25	14.93					
		25,679	24,129	25,314	23,709	28,028	142,642	140,067	282,708	6.55	6.30	6.43	6.74					

No. X.—Deaths from Dysentery and Diarrhoea registered in the Districts in the Province of Madras during each month of the year 1938.

Number.	Districts.	Circles of registration (taluks and municipalities).		Villages or groups of villages and towns from which vital statistics returns were received.		January.	February.	March.	April.	May.	June.	July.
		Number.	(3)	Number from which deaths from dysentery and diarrhoea were reported.	(4)	Number.	(5)	Number from which vital statistics returns were received.	(6)			
1	Anantapur	12	12	380	439	181	105	131	132	133	138	241
2	Bellary	12	12	913	309	119	93	113	109	103	164	248
3	Chingleput	10	10	2,177	746	320	236	227	158	159	151	241
4	Chittoor	11	11	2,254	931	348	276	237	207	205	236	275
5	Coimbatore	16	16	1,201	806	518	380	388	428	541	478	578
6	Cuddapah	10	10	1,037	315	89	81	65	69	65	71	91
7	Godāvāri, East { Plains Agency	11	11	817	413	116	132	139	111	162	217	381
8	Godāvāri, West	5	5	1,095	163	25	22	29	26	24	29	32
9	Guntur	9	9	746	422	177	135	156	190	177	193	321
10	Kistna	14	14	347	638	316	247	294	258	268	308	619
11	Kurnool	12	12	994	412	121	135	176	130	134	154	281
12	Madras	11	11	828	332	90	83	94	74	94	131	270
13	Madura	14	14	1,063	461	240	197	188	153	158	158	244
14	Malabar	15	15	766	649	436	255	255	241	263	224	254
15	Nellore	14	14	1,708	749	290	233	226	172	228	217	301
16	Nilgiris, The	5	5	62	45	31	19	35	52	92	68	47
17	North Arcot	17	17	2,039	1,014	587	419	301	259	291	275	374
18	Ramnad	14	14	1,522	355	286	210	173	140	164	172	155
19	Salem	11	11	1,766	663	284	184	178	173	159	186	208
20	South Arcot	11	11	2,270	961	468	276	261	24	233	216	270
21	South Kanara	8	8	819	398	117	104	85	58	95	93	216
22	Tanjore	17	17	2,596	684	233	233	197	165	210	182	172
23	Tinnevely	12	12	1,103	498	432	250	192	185	179	156	173
24	Trichinopoly	10	10	1,183	600	401	233	203	239	232	184	241
25	Vizagapatam	23	23	4,053	1,152	434	332	456	358	388	557	759
	Total, Madras Province	305	305	34,830	14,156	7,025	5,260	5,223	4,878	5,493	5,640	7,860

No. X.—Deaths from Dysentery and Diarrhoea registered in the Districts in the Province of Madras during each month of the year 1938.—cont.

Number.	Districts.	August.	September.	October.	November.	December.	Total.		Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous years.
		(14)	(15)	(16)	(17)	(18)	Males.	Females.	Total.	Males.	Females.	Total.
1	Anantapur	228	246	264	213	193	1,131	1,074	2,205	210	210	152
2	Bellary	217	189	168	119	128	929	841	1,770	176	176	238
3	Chingleput	270	240	259	229	246	1,388	1,346	2,734	168	165	178
4	Chittoor	300	298	368	354	309	1,782	1,639	3,421	241	231	242
5	Coimbatore	763	815	570	416	427	3,076	2,226	5,302	263	263	286
6	Cuddapah	85	86	135	70	90	535	464	997	110	100	119
7	Godāvāri, East { Plains Agency	361	263	186	127	158	1,275	1,110	2,385	154	130	110
8	Godāvāri, West	338	35	37	22	29	176	172	348	146	144	102
9	Guntur	594	395	163	123	185	1,250	1,170	2,420	208	199	174
10	Kistna	283	189	331	255	308	2,161	2,028	4,189	210	201	200
11	Kurnool	254	156	106	88	67	1,105	949	2,054	174	153	177
12	Madras	205	168	219	195	193	1,184	1,124	2,308	158	138	159
13	Madura	296	329	281	230	265	1,665	1,665	3,330	157	149	354
14	Malabar	724	482	379	330	319	2,991	2,224	5,215	174	177	273
15	Nellore	279	313	251	199	230	1,611	1,328	2,939	216	179	226
16	Nilgiris, The	32	40	32	27	26	252	249	501	277	233	306
17	North Arcot	346	316	355	299	405	2,110	2,110	4,220	188	187	268
18	Ramnad	194	227	242	244	226	1,240	1,193	2,433	142	123	190
19	Salem	282	234	264	190	188	1,324	1,226	2,550	109	100	139
20	South Arcot	260	283	244	243	291	1,680	1,579	3,259	137	128	220
21	South Kanara	258	237	182	102	174	915	806	1,721	138	122	188
22	Tanjore	225	251	282	238	234	1,246	1,318	2,565	109	106	148
23	Tinnevely	195	192	209	317	380	1,434	1,426	2,860	145	135	237
24	Trichinopoly	259	314	341	241	237	1,623	1,542	3,165	174	158	233
25	Vizagapatam	631	442	402	361	423	3,014	2,512	5,526	193	149	144
	Total, Madras Province	7,947	7,001	6,370	5,457	5,890	37,988	36,076	74,064	174	162	206

No. XI.—Deaths from Respiratory Diseases registered in the Districts in the Province of Madras during each month of the year 1938.

Number.	Districts.	Circles of registration (taluks and municipalities).			Villages or Groups of villages and towns from which vital statistics returns were received.		January.	February.	March.	April.	May.	June.	July.
		Number.	Number from which deaths from respiratory diseases were reported.	Number.	Number from which deaths from respiratory diseases were reported.								
1	Anantapur	12	12	880	360	128	138	160	170	156	150	155	
2	Bellary	12	12	913	257	177	162	177	172	140	151	164	
3	Chingleput	10	10	2,177	787	352	288	305	251	272	246	253	
4	Chittoor	11	11	2,254	693	268	200	204	167	145	193	206	
5	Coimbatore	16	16	1,201	827	721	559	630	621	628	676	703	
6	Cuddapah	10	10	1,037	309	92	77	80	100	100	98	94	
7	Godavari, East { Plains Agency	11	11	817	421	300	259	263	217	282	355	358	
8	Godavari, West	5	5	1,095	223	42	39	51	59	44	51	54	
9	Godavari, West	9	9	743	422	251	185	198	183	259	232	275	
10	Guntur	14	14	947	586	382	319	356	251	363	377	436	
11	Kistna	12	12	994	516	211	194	211	198	223	242	291	
12	Kurnool	11	11	829	268	121	114	148	116	125	115	177	
13	Madras	1	1	1	1	677	630	628	533	608	576	612	
14	Madras	14	14	1,069	662	777	549	639	597	656	640	591	
15	Malabar	15	15	766	675	649	555	624	607	704	780	860	
16	Nellore	14	14	1,708	527	182	126	145	125	121	145	168	
17	Nilgiris, the	5	5	62	38	61	48	60	51	73	71	71	
18	North Arcot	17	17	2,039	979	484	351	375	346	372	332	361	
19	Ramnad	14	14	1,522	677	420	370	370	352	363	307	340	
20	Salem	11	11	1,766	738	339	264	291	294	315	276	320	
21	South Arcot	11	11	2,270	923	365	301	318	261	268	270	296	
22	South Kanara	8	8	819	408	185	155	171	142	146	185	204	
23	Tanjore	17	17	2,596	645	251	228	218	219	226	189	205	
24	Tinnevely	12	12	1,106	607	418	278	320	324	318	314	318	
25	Trichinopoly	10	10	1,163	609	401	296	335	329	328	286	311	
25	Vizagapatam	23	23	4,053	681	422	322	328	310	262	424	481	
Total, Madras Province		305	305	34,880	13,787	8,674	7,007	7,615	6,995	7,497	7,676	8,354	

131

No. XI.—Deaths from Respiratory Diseases registered in the Districts in the Province of Madras during each month of the year 1938—cont.

Number.	Districts.	August.	September.	October.	November.	Total.		Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.
		(14)	(15)	(16)	(17)	(18)	(19)	Males.	Females.	Total.	
1	Anantapur	173	160	170	179	176	1,088	2,02	1,61	1,82	2,05
2	Bellary	174	186	178	167	177	1,088	2,21	1,97	2,09	3,02
3	Chingleput	302	282	336	315	344	1,942	2,32	1,96	2,14	1,97
4	Chittoor	177	175	204	202	230	1,338	1,81	1,46	1,64	2,37
5	Coimbatore	719	750	686	685	712	4,378	3,59	3,04	3,32	3,01
6	Cuddapah	91	82	110	106	108	649	1,34	1,06	1,20	1,65
7	Godavari, East { Plains Agency	419	392	347	356	321	2,074	2,50	2,11	2,30	2,46
8	Godavari, West	78	72	51	69	54	337	2,79	2,73	2,76	2,70
9	Guntur	337	300	304	287	336	1,691	2,81	2,35	2,57	2,47
10	Kistna	517	501	476	414	413	2,847	2,57	2,14	2,36	2,39
11	Kurnool	290	323	303	247	327	1,640	2,58	2,30	2,44	2,87
12	Madras	176	187	146	136	145	922	1,77	1,45	1,62	2,08
13	Madras	546	491	733	667	688	3,982	1,67	1,13	1,42	1,62
14	Malabar	611	665	679	683	660	4,223	3,91	3,16	3,63	3,55
15	Nellore	801	885	649	605	542	4,709	2,74	1,84	2,28	2,26
16	Nilgiris, The	128	146	163	165	217	1,040	1,40	1,05	1,23	1,79
17	North Arcot	61	66	63	64	62	440	4,84	4,03	4,47	4,74
18	Rannad	393	368	379	415	471	2,563	2,26	1,83	2,05	2,00
19	Salem	374	390	402	442	409	2,406	2,76	2,21	2,47	2,42
20	South Arcot	334	346	339	295	278	2,016	1,66	1,37	1,52	1,80
21	South Kanara	287	345	336	363	360	2,113	1,72	1,35	1,54	1,70
22	Tanjore	229	205	218	187	199	1,018	1,91	1,44	1,67	1,66
23	Tinnevely	208	206	234	240	239	1,506	1,82	0,95	1,12	1,14
24	Trichinopoly	322	325	340	332	411	2,298	2,33	1,64	1,97	1,87
25	Vizagapatam	324	348	345	333	408	2,183	2,34	1,90	2,11	2,00
Total, Madras Province		482	359	409	408	446	2,480	1,57	1,29	1,42	1,62
		8,553	8,264	8,030	8,422	8,733	53,020	2,44	1,95	2,19	2,26

No. XII.—Deaths from Plague registered in the Districts in the Province of Madras during each month of the year 1938.

Number.	Districts.	Circles of registration (towns and municipalities).		Villages or groups of villages and towns from which vital statistics returns were received.		January.	February.	March.	April.	May.	June.	July.
		Number.	Number from which deaths from plague were reported.	Number.	Number from which deaths from plague were reported.	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Anantapur	12	2	880	2	1	...	...	...	...	...	...
2	Bellary	12	1	913	1	...	...	...	...	...	3	...
3	Chingleput	10	...	2,177	...	...	...	...	...	...	...	...
4	Chittoor	11	5	2,254	20	23	17	...	1	...	...	...
5	Coimbatore	16	6	1,201	18	10	4	4	1	8	...	12
6	Cuddapah	10	...	1,037	...	...	...	...	...	...	4	1
7	Godāvāri, East { Plains Agency	11	...	817	...	...	...	...	...	...	...	...
8	Godāvāri, East { Agency	5	...	1,095	...	...	...	...	...	...	...	...
9	Godāvāri, West	9	...	746	...	...	...	...	...	...	...	...
10	Guntūr	14	...	947	...	...	...	...	...	...	...	...
11	Kistna	12	...	994	...	...	...	...	...	...	...	...
12	Kurnool	11	...	829	...	...	...	...	...	...	...	...
13	Madras	1	...	...	...	...	...	...	...	...	...	...
14	Madura	14	3	1,069	35	95	82	40	18	...	...	...
15	Malabar	15	3	766	3	3	...	...	...	5	15	48
16	Nellore	14	...	1,708	...	...	...	...	...	...	...	1
17	Nilgiris, the	5	4	62	9	2	5	1	4	1	...	...
18	North Arcot	17	1	2,039	1	1	...	...	...	...	...	...
19	Ramnad	14	...	1,522	...	...	...	...	...	...	...	...
20	Salem	11	4	1,768	98	50	55	41	18	6	7	16
21	South Arcot	11	...	2,270	...	...	...	...	...	...	...	...
22	South Kanara	8	...	819	...	...	...	...	...	...	...	...
23	Tanjore	17	...	2,598	...	...	...	...	...	...	...	...
24	Tinnevely	12	...	1,108	...	...	...	...	...	...	...	...
25	Trichinopoly	10	...	1,163	...	...	...	...	...	...	...	...
25	Visagapatam	23	...	4,053	...	...	...	...	...	...	...	...
Total, Madras Province		805	29	34,830	187	185	163	87	41	21	29	79

No. XII.—Deaths from Plague registered in the Districts in the Province of Madras during each month of the year 1938—cont.

Number.	Districts.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 for previous 5 years.
							Males.	Females.	Total.	Males.	Females.	Total.	
1	Anantapur	...	...	...	...	...	4	1	5	0.007	0.002	0.005	0.04
2	Bellary	...	...	...	...	...	...	1	1	...	0.002	0.001	0.06
3	Chingleput	...	...	...	...	...	...	...	...	...	...	...	...
4	Chittoor	10	5	1	5	3	49	33	82	0.07	0.05	0.06	0.01
5	Coimbatore	9	12	3	6	6	29	29	58	0.02	0.02	0.02	0.04
6	Cuddapah	...	...	...	...	...	...	...	...	...	...	...	0.003
7	Godāvāri, East { Plains Agency	...	...	...	...	...	...	...	...	...	...	...	...
8	Godāvāri, East { Agency	...	...	...	...	...	...	...	...	...	...	...	...
9	Godāvāri, West	...	...	...	...	...	...	...	...	...	...	...	...
10	Guntūr	...	...	...	...	...	...	...	...	...	...	...	0.002
11	Kistna	...	...	...	...	...	...	...	...	...	...	...	0.002
12	Kurnool	...	...	...	...	...	...	...	...	...	...	...	0.001
13	Madras	...	...	...	...	...	183	261	444	0.17	0.23	0.20	0.21
14	Madura	49	38	23	15	18	4	1	5	0.002	0.001	0.001	0.001
15	Malabar	1	...	...	...	...	10	8	18	0.11	0.10	0.11	0.10
16	Nellore	3	...	...	2	...	2	...	2	0.002	...	0.001	0.004
17	Nilgiris, the	...	...	...	...	...	...	...	...	...	...	...	...
18	North Arcot	...	...	...	...	...	...	...	...	...	...	...	...
19	Ramnad	43	58	128	65	53	267	273	540	0.22	0.22	0.22	0.07
20	Salem	...	...	...	...	...	...	...	...	...	...	...	0.001
21	South Arcot	...	...	...	...	...	...	...	...	...	...	...	...
22	South Kanara	...	...	...	...	...	...	...	...	...	...	...	...
23	Tanjore	...	...	...	...	...	...	...	...	...	...	...	...
24	Tinnevely	...	...	...	...	...	...	...	...	...	...	...	0.0002
25	Trichinopoly	...	...	...	...	...	...	...	...	...	...	...	...
25	Visagapatam	...	...	...	...	...	...	...	...	...	...	...	...
Total, Madras Province		109	113	155	93	80	548	607	1,155	0.03	0.03	0.03	0.03

APPENDIX II.

Table showing Health Services in Rural and Urban areas of the Province of Madras during 1937 (prescribed in G.O. Ms. No. 1235, P.H., dated 7th June 1933).

Districts.	Rural areas.										Urban areas.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	Medical officers of Health.					Vacci- nators.					Medical Officers of Health.					Vacci- nators.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	Holding D.P.H.		Holding University degree in Public Health		Holding D.P.H., Calcutta.		Holding Public Health Diploma in (Indian) corre- sponding with Licentiate.		Epidemic Staff.		Sanitary and Health Inspec- tors.		Male.		Female.		School Medical Officers.		Other Health Staff.		Holding D.P.H.		Holding University degree in Public Health		Holding D.P.H., Calcutta.		Holding Public Health Diploma in (Indian) corre- sponding with Licentiate.		Sanitary and Health Inspec- tors.		Male.		Female.		Inspectors of Vaccination.		School Medical Officers.		Other Health Staff.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
	Whole	Part.	Whole	Part.	Whole	Part.	Whole	Part.	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)	(79)	(80)	(81)	(82)	(83)	(84)	(85)	(86)	(87)	(88)	(89)	(90)	(91)	(92)	(93)	(94)	(95)	(96)	(97)	(98)	(99)	(100)	(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	(109)	(110)	(111)	(112)	(113)	(114)	(115)	(116)	(117)	(118)	(119)	(120)	(121)	(122)	(123)	(124)	(125)	(126)	(127)	(128)	(129)	(130)	(131)	(132)	(133)	(134)	(135)	(136)	(137)	(138)	(139)	(140)	(141)	(142)	(143)	(144)	(145)	(146)	(147)	(148)	(149)	(150)	(151)	(152)	(153)	(154)	(155)	(156)	(157)	(158)	(159)	(160)	(161)	(162)	(163)	(164)	(165)	(166)	(167)	(168)	(169)	(170)	(171)	(172)	(173)	(174)	(175)	(176)	(177)	(178)	(179)	(180)	(181)	(182)	(183)	(184)	(185)	(186)	(187)	(188)	(189)	(190)	(191)	(192)	(193)	(194)	(195)	(196)	(197)	(198)	(199)	(200)	(201)	(202)	(203)	(204)	(205)	(206)	(207)	(208)	(209)	(210)	(211)	(212)	(213)	(214)	(215)	(216)	(217)	(218)	(219)	(220)	(221)	(222)	(223)	(224)	(225)	(226)	(227)	(228)	(229)	(230)	(231)	(232)	(233)	(234)	(235)	(236)	(237)	(238)	(239)	(240)	(241)	(242)	(243)	(244)	(245)	(246)	(247)	(248)	(249)	(250)	(251)	(252)	(253)	(254)	(255)	(256)	(257)	(258)	(259)	(260)	(261)	(262)	(263)	(264)	(265)	(266)	(267)	(268)	(269)	(270)	(271)	(272)	(273)	(274)	(275)	(276)	(277)	(278)	(279)	(280)	(281)	(282)	(283)	(284)	(285)	(286)	(287)	(288)	(289)	(290)	(291)	(292)	(293)	(294)	(295)	(296)	(297)	(298)	(299)	(300)	(301)	(302)	(303)	(304)	(305)	(306)	(307)	(308)	(309)	(310)	(311)	(312)	(313)	(314)	(315)	(316)	(317)	(318)	(319)	(320)	(321)	(322)	(323)	(324)	(325)	(326)	(327)	(328)	(329)	(330)	(331)	(332)	(333)	(334)	(335)	(336)	(337)	(338)	(339)	(340)	(341)	(342)	(343)	(344)	(345)	(346)	(347)	(348)	(349)	(350)	(351)	(352)	(353)	(354)	(355)	(356)	(357)	(358)	(359)	(360)	(361)	(362)	(363)	(364)	(365)	(366)	(367)	(368)	(369)	(370)	(371)	(372)	(373)	(374)	(375)	(376)	(377)	(378)	(379)	(380)	(381)	(382)	(383)	(384)	(385)	(386)	(387)	(388)	(389)	(390)	(391)	(392)	(393)	(394)	(395)	(396)	(397)	(398)	(399)	(400)	(401)	(402)	(403)	(404)	(405)	(406)	(407)	(408)	(409)	(410)	(411)	(412)	(413)	(414)	(415)	(416)	(417)	(418)	(419)	(420)	(421)	(422)	(423)	(424)	(425)	(426)	(427)	(428)	(429)	(430)	(431)	(432)	(433)	(434)	(435)	(436)	(437)	(438)	(439)	(440)	(441)	(442)	(443)	(444)	(445)	(446)	(447)	(448)	(449)	(450)	(451)	(452)	(453)	(454)	(455)	(456)	(457)	(458)	(459)	(460)	(461)	(462)	(463)	(464)	(465)	(466)	(467)	(468)	(469)	(470)	(471)	(472)	(473)	(474)	(475)	(476)	(477)	(478)	(479)	(480)	(481)	(482)	(483)	(484)	(485)	(486)	(487)	(488)	(489)	(490)	(491)	(492)	(493)	(494)	(495)	(496)	(497)	(498)	(499)	(500)	(501)	(502)	(503)	(504)	(505)	(506)	(507)	(508)	(509)	(510)	(511)	(512)	(513)	(514)	(515)	(516)	(517)	(518)	(519)	(520)	(521)	(522)	(523)	(524)	(525)	(526)	(527)	(528)	(529)	(530)	(531)	(532)	(533)	(534)	(535)	(536)	(537)	(538)	(539)	(540)	(541)	(542)	(543)	(544)	(545)	(546)	(547)	(548)	(549)	(550)	(551)	(552)	(553)	(554)	(555)	(556)	(557)	(558)	(559)	(560)	(561)	(562)	(563)	(564)	(565)	(566)	(567)	(568)	(569)	(570)	(571)	(572)	(573)	(574)	(575)	(576)	(577)	(578)	(579)	(580)	(581)	(582)	(583)	(584)	(585)	(586)	(587)	(588)	(589)	(590)	(591)	(592)	(593)	(594)	(595)	(596)	(597)	(598)	(599)	(600)	(601)	(602)	(603)	(604)	(605)	(606)	(607)	(608)	(609)	(610)	(611)	(612)	(613)	(614)	(615)	(616)	(617)	(618)	(619)	(620)	(621)	(622)	(623)	(624)	(625)	(626)	(627)	(628)	(629)	(630)	(631)	(632)	(633)	(634)	(635)	(636)	(637)	(638)	(639)	(640)	(641)	(642)	(643)	(644)	(645)	(646)	(647)	(648)	(649)	(650)	(651)	(652)	(653)	(654)	(655)	(656)	(657)	(658)	(659)	(660)	(661)	(662)	(663)	(664)	(665)	(666)	(667)	(668)	(669)	(670)	(671)	(672)	(673)	(674)	(675)	(676)	(677)	(678)	(679)	(680)	(681)	(682)	(683)	(684)	(685)	(686)	(687)	(688)	(689)	(690)	(691)	(692)	(693)	(694)	(695)	(696)	(697)	(698)	(699)	(700)	(701)	(702)	(703)	(704)	(705)	(706)	(707)	(708)	(709)	(710)	(711)	(712)	(713)	(714)	(715)	(716)	(717)	(718)	(719)	(720)	(721)	(722)	(723)	(724)	(725)	(726)	(727)	(728)	(729)	(730)	(731)	(732)	(733)	(734)	(735)	(736)	(737)	(738)	(739)	(740)	(741)	(742)	(743)	(744)	(745)	(746)	(747)	(748)	(749)	(750)	(751)	(752)	(753)	(754)	(755)	(756)	(757)	(758)	(759)	(760)	(761)	(762)	(763)	(764)	(765)	(766)	(767)	(768)	(769)	(770)	(771)	(772)	(773)	(774)	(775)	(776)	(777)	(778)	(779)	(780)	(781)	(782)	(783)	(784)	(785)	(786)	(787)	(788)	(789)	(790)	(791)	(792)	(793)	(794)	(795)	(796)	(797)	(798)	(799)	(800)	(801)	(802)	(803)	(804)	(805)	(806)	(807)	(808)	(809)	(810)	(811)	(812)	(813)	(814)	(815)	(816)	(817)	(818)	(819)	(820)	(821)	(822)	(823)	(824)	(825)	(826)	(827)	(828)	(829)	(830)	(831)	(832)	(833)	(834)	(835)	(836)	(837)	(838)	(839)	(840)	(841)	(842)	(843)	(844)	(845)	(846)	(847)	(848)	(849)	(850)	(851)	(852)	(853)	(854)	(855)	(856)	(857)	(858)	(859)	(860)	(861)	(862)	(863)	(864)	(865)	(866)	(867)	(868)	(869)	(870)	(871)	(872)	(873)	(874)	(875)	(876)	(877)	(878)	(879)	(880)	(881)	(882)	(883)	(884)	(885)	(886)	(887)	(888)	(889)	(890)	(891)	(892)	(893)	(894)	(895)	(896)	(897)	(898)	(899)	(900)	(901)	(902)	(903)	(904)	(905)	(906)	(907)	(908)	(909)	(910)	(911)	(912)	(913)	(914)	(915)	(916)	(917)	(918)	(919)	(920)	(921)	(922)	(923)	(924)	(925)	(926)	(927)	(928)	(929)	(930)	(931)	(932)	(933)	(934)	(935)	(936)	(937)	(938)	(939)	(940)	(941)	(942)	(943)	(944)	(945)	(946)	(947)	(948)	(949)	(950)	(951)	(952)	(953)	(954)	(955)	(956)	(957)	(958)	(959)	(960)	(961)	(962)	(963)	(964)	(965)	(966)	(967)	(968)	(969)	(970)	(971)	(972)	(973)	(974)	(975)	(976)	(977)	(978)	(979)	(980)	(981)	(982)	(983)	(984)	(985)	(986)	(987)	(988)	(989)	(990)	(991)	(992)	(993)	(994)	(995)	(996)	(997)	(998)	(999)	(1000)	(1001)	(1002)	(1003)	(1004)	(1005)	(1006)	(1007)	(1008)	(1009)	(1010)	(1011)	(1012)	(1013)	(1014)	(1015)	(1016)	(1017)	(1018)	(1019)	(1020)	(1021)	(1022)	(1023)	(1024)	(1025)	(1026)	(1027)	(1028)	(1029)	(1030)	(1031)	(1032)	(1033)	(1034)	(1035)	(1036)	(1037)	(1038)	(1039)	(1040)	(1041)	(1042)	(1043)	(1044)	(1045)	(1046)	(1047)	(1048)	(1049)	(1050)	(1051)	(1052)	(1053)	(1054)	(1055)	(1056)	(1057)	(1058)	(1059)	(1060)	(1061)	(1062)	(1063)	(1064)	(1065)	(1066)	(1067)	(1068)	(1069)	(1070)	(1071)	(1072)	(1073)	(1074)	(1075)	(1076)	(1077)	(1078)	(1079)	(1080)	(1081)	(1082)	(1083)	(1084)	(1085)	(1086)	(1087)	(1088)	(1089)	(1090)	(1091)	(1092)	(1093)	(1094)	(1095)	(1096)	(1097)	(1098)	(1099)	(1100)	(1101)	(1102)	(1103)	(1104)	(1105)	(1106)	(1107)	(1108)	(1109)	(1110)	(1111)	(1112)	(1113)	(1114)	(1115)	(1116)	(1117)	(1118)	(1119)	(1120)	(1121)	(1122)	(1123)	(1124)	(1125)	(1126)	(1127)	(1128)	(1129)	(1130)	(1131)	(1132)	(1133)	(1134)	(1135)	(1136)	(1137)	(1138)	(1139)	(1140)	(1141)	(1142)	(1143)	(1144)	(1145)	(1146)	(1147)	(1148)	(1149)	(1150)	(1151)	(1152)	(1153)	(1154)	(1155)	(1156)	(1157)	(1158)	(1159)	(1160)	(1161)	(1162)	(1163)	(1164)	(1165)	(1166)	(1167)	(1168)	(1169)	(1170)	(1171)	(1172)	(1173)	(1174)	(1175)	(1176)	(1177)	(1178)	(1179)	(1180)	(1181)	(1182)	(1183)	(1184)	(1185)	(1186)	(1187)	(1188)	(1189)	(1190)	(1191)	(1192)	(1193)	(1194)	(1195)	(1196)	(1197)	(1198)	(1199)	(1200)	(1201)	(1202)	(1203)	(1204)	(1205)	(1206)	(1207)	(1208)	(1209)	(1210)	(1211)	(1212)	(1213)	(1214)	(1215)	(1216)	(1217)	(1218)	(1219)	(1220)	(1221)	(1222)	(1223)	(1224)	(1225)	(1226)	(1227)	(1228)	(1229)	(1230)	(1231)	(1232)	(1233)	(1234)	(1235)	(1236)	(1237)	(1238)	(1239)	(1240)	(1241)	(1242)	(1243)	(1244)	(1245)	(1246)	(1247)	(1248)	(1249)	(1250)	(1251)	(1252)	(1253)	(1254)	(1255)	(1256)	(1257)	(1258)	(1259)	(1260)	(1261)	(1262)	(1263)	(1264)	(1265)	(1266)	(1267)	(1268)	(1269)	(1270)	(1271)	(1272)	(1273)	(1274)	(1275)	(1276)	(1277)	(1278)	(1279)	(1280)	(1281)	(1282)	(1283)	(1284)	(1285)	(1286)	(1287)	(1288)	(1289)	(1290)	(1291)	(1292)	(1293)	(1294)	(1295)	(1296)	(1297)	(1298)	(1299)	(1300)	(1301)	(1302)	(1303)	(1304)	(1305)	(1306)	(1307)	(1308)	(1309)	(1310)	(1311)	(1312)	(1313)	(1314)	(1315)	(1316)	(1317)	(1318)	(1319)	(1320)	(1321)	(1322)	(1323)	(1324)	(1325)	(1326)	(1327)	(1328)	(1329)	(1330)	(1331)	(1332)	(1333)	(1334)	(1335)	(1336)	(1337)	(1338)	(1339)	(1340)	(1341)	(1342)	(1343)	(1344)	(1345)	(1346)	(1347)	(1348)	(1349)	(1350)	(1351)	(1352)	(1353)	(1354)	(1355)	(1356)	(1357)	(1358)	(1359)	(1360)	(1361)	(1362)	(1363)	(1364)	(1365)	(1366)	(1367)	(1368)	(1369)	(1370)	(1371)	(1372)	(1373)	(1374)	(1375)	(1376)	(1377)	(1378)	(1379)	(1380)	(1381)	(1382)	(1383)	(1384)	(1385)	(1386)	(1387)	(1388)	(1389)	(1390)	(1391)	(1392)	(1393)	(1394)	(1395)	(1396)	(1397)	(1398)	(1399)	(1400)	(1401)	(1402)	(1403)	(1404)	(1405)	(1406)	(1407)	(1408)	(1409)	(1410)	(1411)	(1412)	(1413)	(1414)	(1415)	(1416)	(1417)	(1418)	(1419)	(1420)	(1421)	(1422)	(1423)	(1424)	(1425)	(1426)	(1427)	(1428)	(1429)	(1430)	(1431)	(1432)	(1433)	(1434)	(1435)	(1436)	(1437)	(1438)	(1439)	(1440)	(1441)	(1442)	(1443)	(1444)	(1445)	(1446)	(1447)	(1448)	(1449)	(1450)

Note.—The statement does not include the posts of Reserve Health officers and the Provincial staff at headquarters.

APPENDIX III.

Maternity and child-welfare centres, Health visitors and trained midwives in Rural and Urban areas in the Province of Madras during 1938 (prescribed in G.O. Ms. No. 1235, P.H., dated 7th June 1933.)

Serial number.	Districts.	Maternity and child-welfare centres maintained by												Trained visitors.		Trained midwives.		Trained dhaia.													
		Government.		Local and municipal bodies.		Other agencies.																									
		Rural.	Urban.	(3)	(4)	Rural.	Urban.	(5)	Rural.	Urban.	(6)	Rural.	Urban.	(7)	Rural.	Urban.	(8)	Rural.	Urban.	(9)	(10)	Rural.	Urban.	(11)	Urban.	(12)	Rural.	Urban.	(13)	(14)	
(1)	(2)																														
1	Anantapur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Bellary	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Chinglept	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Chittoor	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Coimbatore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Cuddapah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Godavari, East	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Godavari, West	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	Guntur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Kistna	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Kurnool	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Madura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Malabar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Nellore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Nigris, The	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	North Arcot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Ramnad	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Salem	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	South Arcot	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	South Kanara	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Tanjore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Tinnevelly	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	Trichinopoly	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Vizagapatam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total	4	...	122	78	9	20	8	34	1,041	726	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

VACCINATION STATEMENT.

ANNEXURE I.

Statement showing inspection of vaccinated cases by District Health Officers during 1938-39.

Number and name of district.	Total number of cases vaccinated during the year.		Percentage of cases inspected to total number vaccinated.
	Number of cases vaccinated during the year.	Number of cases inspected during the year.	
1. Anantapur ...	82,344	1,552	1.9
2. Arcot, North ...	169,099	1,987	1.2
3. Arcot, South ...	143,760	1,028	0.7
4. Bellary ...	92,516	2,713	2.9
5. Chingleput ...	125,539	1,532	1.2
6. Chittoor ...	111,523	2,531	2.3
7. Coimbatore ...	147,425	2,041	1.4
8. Cuddapah ...	79,570	1,031	1.3
9. Godāvari, East ...	111,342	1,131	1.0
10. Godāvari, West ...	66,349	2,449	3.7
11. Guntur ...	130,662	1,518	1.2
12. Kistna ...	111,682	977	0.9
13. Kurnool ...	122,971	7,769	6.3
14. Madura ...	175,335	3,277	1.9
15. Malabar ...	247,415	2,614	1.1
16. Nellore ...	127,290	337	0.3
17. Nilgiris, The ...	21,081	643	3.1
18. Ramnad ...	143,478	845	0.6
19. Salem ...	202,022	4,421	2.2
20. South Kanara ...	102,017	2,178	2.1
21. Tanjore ...	133,245	2,634	2.0
22. Tinnevely ...	152,767	4,227	2.8
23. Trichinopoly ...	118,392	1,490	1.3
24. Vizagapatam ...	233,996	3,436	1.5

VACCINATION STATEMENT—cont.

ANNEXURE II.

Statement showing inspection of vaccinated cases by Municipal Health Officers during 1938-39.

Number and names of municipalities.	Total number of cases vaccinated during the year.		Total number of cases inspected during the year.		Percentage of cases inspected to total number vaccinated	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.
1. Adoni ...	1,301	3,214	1,144	2,154	87.9	67.0
2. Bellary ...	2,053	5,183	1,570	2,248	76.5	43.4
3. Bezvada ...	2,321	6,473	1,742	1,931	75.1	30.6
4. Bodinayakanur ...	1,053	2,365	972	1,763	92.3	74.5
5. Calicut ...	3,978	12,164	3,094	7,281	77.8	59.9
6. Cannanore ...	805	2,068	467	716	58.0	34.6
7. Chidambaram ...	809	2,125	613	1,059	75.8	49.8
8. Chingleput ...	541	2,617	539	2,045	99.6	78.1
9. Chittoor ...	1,481	13,472	714	10,613	48.2	79.0
10. Cocanada ...	1,565	6,295	1,289	3,488	82.4	55.4
11. Cochin ...	1,026	2,128	790	677	77.0	31.8
12. Coimbatore ...	3,975	15,159	2,855	6,043	71.8	39.9
13. Conjeeveram ...	3,208	11,376	2,168	2,072	67.7	30.8
14. Coonoor ...	552	400	451	213	81.7	53.3
15. Cuddalore ...	1,989	6,064	1,658	3,507	83.4	57.8
16. Cuddapah ...	796	2,245	724	1,106	91.0	49.3
17. Dindigul ...	1,796	7,621	1,370	3,517	76.3	46.1
18. Ellore ...	1,949	3,887	1,492	1,998	76.6	59.3
19. Erode ...	990	2,870	823	1,686	83.1	58.7
20. Gudiyattam ...	885	2,212	718	1,410	81.1	63.7
21. Guntur ...	3,233	18,744	2,294	5,360	71.0	28.6
22. Hindupur ...	608	1,935	483	1,083	79.4	56.0
23. Hospet ...	1,110	2,187	896	940	80.5	44.0
24. Karaikudi ...	643	1,468	467	471	72.6	32.1
25. Kumbakonam ...	2,038	8,535	1,540	2,005	75.6	23.5
26. Kurnool ...	1,981	13,308	1,260	8,350	63.6	62.7
27. Madura ...	8,094	63,106	8,031	35,337	99.2	56.0
28. Mangalore ...	2,934	9,911	774	1,475	26.4	14.9
29. Mannargudi ...	718	1,912	533	859	74.2	50.2
30. Masulipatam ...	1,711	3,747	1,295	1,886	75.7	50.3
31. Mayavaram ...	1,118	5,714	1,001	3,669	89.5	64.2
32. Negapatam ...	1,406	5,064	1,058	1,230	75.2	24.3
33. Nellore ...	2,273	7,122	1,700	2,314	74.8	32.5
34. Ootacamund ...	957	533	740	287	77.3	53.8
35. Palghat ...	1,540	3,811	519	1,005	33.7	26.4
36. Periyakulam ...	967	1,017	771	329	79.7	32.4
37. Pollachi ...	783	3,712	439	1,746	56.1	47.0
38. Proddatur ...	622	1,869	443	1,337	71.2	71.5
39. Rajahmundry ...	1,982	6,044	1,484	1,323	74.9	21.9
40. Salem ...	4,678	19,328	3,509	7,341	75.0	38.0
41. Saidapet ...	1,578	6,475	1,043	2,125	66.1	32.8
42. Srirangam ...	721	1,860	572	1,023	79.3	55.0
43. Srivilliputtur ...	1,086	4,061	854	1,667	78.6	41.0
44. Tanjore ...	2,656	6,453	2,050	2,906	77.2	45.0
45. Tellicherry ...	908	1,259	563	509	62.0	40.4
46. Tenali ...	1,287	3,155	937	1,313	72.8	41.6
47. Tiruppur ...	1,015	1,880	871	702	85.8	37.3
48. Trichinopoly ...	5,757	11,946	5,072	10,176	88.1	85.2
49. Tinnevely ...	1,342	6,270	723	228	53.9	3.6
50. Tuticorin ...	2,535	4,992	1,872	1,840	73.9	36.9
51. Vaniambadi ...	953	1,217	732	891	76.8	73.2
52. Vellore ...	2,715	10,231	2,474	5,695	91.1	55.7
53. Virudhunagar ...	1,319	2,077	1,288	1,428	97.6	68.8
54. Vizagapatam ...	2,089	7,761	1,837	3,158	87.9	40.7
55. Vizianagaram ...	1,842	4,609	1,587	2,510	83.4	54.5

Statement No. I showing the Particulars of Vaccination in the Province of Madras for the official year 1938-39.

Number.	Districts.	(3)	(4)	Total number of persons vaccinated.			(8)	Primary vaccination.				
								(9)	Successful.			(13)
				Males.	Females.	Total.			(10)	(11)	(12)	
(1)	(2)	Populations of range according to the census of 1931.	Average number of vaccinators employed throughout the year.	(5)	(6)	(7)	(8)	Total number of operations.	Under 1 year.	1 and under 6 years.	Total of all ages.	Unknown.
1	Agency districts— Goddāvari	240,576	14+4	8,703	7,518	16,219	901	8,502	3,498	3,551	7,242	824
2	Vizagapatnam	134,168	8+2	8,383	7,047	15,430	1,543	7,807	414	3,351	6,591	584
	Total of Agency districts ...	434,744	22+6	17,086	14,563	31,649	1,130	16,309	3,912	6,902	13,833	1,508
3	Anantapur	1,008,481	18+11	47,479	38,929	81,408	2,807	35,853	16,647	14,087	31,024	4,044
4	Arcoot, North	2,104,926	27+11	92,947	74,637	167,584	4,410	78,752	43,875	26,020	71,061	6,793
5	Arcoot, South	2,350,239	24+12	79,692	63,145	142,837	3,968	68,279	24,291	34,198	59,861	7,419
6	Bellary	864,893	16+10	48,228	43,863	92,091	3,542	31,709	15,951	11,719	27,825	3,522
7	Chingleput	1,498,863	17+8	68,727	59,254	127,981	5,119	46,010	19,346	19,629	39,548	5,639
8	Chittoor	1,405,947	20+10	62,292	48,695	110,987	3,686	45,681	21,232	18,500	40,059	5,352
9	Coimbatore	2,245,621	30+12	79,221	70,808	147,029	3,501	69,071	32,974	26,925	60,416	7,866
10	Cuddapah	906,671	16+9	50,207	28,718	78,925	3,157	30,731	14,082	11,617	26,121	3,933
11	Goddāvari, East	1,533,237	26+9	50,696	43,463	94,059	2,657	47,636	14,681	23,738	40,009	5,844
12	Goddāvari, West	1,143,808	13+7	39,445	29,779	66,224	8,311	30,851	11,418	14,420	26,460	4,091

Statement No. I showing the Particulars of Vaccination in the Province of Madras for the official year 1938-39—cont.

Number.	Municipalities.	(1)	(2)	(3)	Average number of persons vaccinated.	Total number of persons vaccinated.			(8)	Primary vaccination.			(13)	
						Males.	Females.	Total.		Total number of operations.	Successful.			
											Under 1 year.	1 and under 6 years.		Total of all ages.
1	Adoni	35,635	1+2	1,977	2,538	4,515	1,505	1,301	1,020	276	1,301	...	...	
2	Anakāpalle	23,376	1+2	1,704	432	2,836	879	648	406	201	622	3	3	
3	Anantapur	15,099	1+2	2,151	1,110	3,261	1,087	660	310	331	656	4	4	
4	Bellary	47,573	2+4	4,239	2,995	7,234	1,204	2,053	1,438	531	2,004	34	34	
5	Bezwada	60,427	3+6	5,220	3,574	8,794	977	2,321	1,326	874	2,319	1	1	
6	Bimlipatam	9,629	1+1	673	703	1,376	688	310	255	31	308	...	...	
7	Bodisayakkandur	27,036	1+2	1,603	1,814	3,417	1,189	1,053	949	84	1,033	18	18	
8	Calicut	99,273	5+7	7,993	8,149	16,142	1,345	4,013	2,734	1,107	3,854	28	28	
9	Cannanore	34,236	2+2	1,900	969	2,869	717	805	506	180	795	59	59	
10	Chicaole	16,588	1+1	1,009	691	1,700	850	437	360	75	437	...	...	
11	Chidambaram	25,084	1+2	1,893	1,041	2,934	978	809	403	373	793	14	14	
12	Chingleput	14,368	1+2	2,132	1,026	3,158	1,053	541	416	116	541	...	...	
13	Chirala	18,853	1+2	1,313	833	2,146	715	719	475	222	717	...	...	
14	Chittoor	22,018	2+2	8,333	6,240	14,573	3,738	1,481	813	608	1,442	17	17	
15	Cocanada	65,952	3+5	4,434	3,418	7,852	482	1,565	855	488	1,453	111	111	
16	Cochin	23,816	2+2	1,594	1,558	3,152	788	1,026	631	226	1,026	...	...	
17	Coimbatore	95,189	5+12	10,796	8,336	19,132	1,125	8,375	2,243	1,417	8,773	196	196	
18	Conjeevaram	65,258	3+5	8,561	6,023	14,584	1,823	3,308	1,997	1,108	3,183	22	22	
19	Coonor	14,328	1+0	459	491	950	950	552	408	128	541	6	6	
20	Cuddalore	59,037	5+5	4,595	3,455	8,050	805	1,989	1,154	738	1,977	9	9	
21	Cuddapah	22,602	1+2	2,180	861	3,041	1,014	798	549	239	794	2	2	
22	Devakottai	20,372	1+2	1,877	871	2,748	916	670	211	283	513	129	129	
23	Dhārāpuram	18,218	1+1	1,011	637	1,648	824	573	344	208	573	...	...	
24	Dindigul	43,617	2+5	4,498	4,914	9,412	1,345	1,796	1,279	465	1,757	36	36	
25	Ellore	57,342	2+2	3,211	2,105	5,316	886	1,949	1,281	653	1,946	...	...	
26	Erode	33,672	2+2	2,450	1,410	3,860	985	982	448	478	1,466	24	24	
27	Guduvada	20,027	1+2	2,424	2,048	4,470	1,490	780	495	244	764	16	16	
28	Gudiyattam	24,688	1+2	1,699	1,368	3,067	1,032	885	615	150	795	77	77	
29	Guntur	65,179	4+6	10,237	11,722	21,959	2,196	3,233	859	1,519	2,480	643	643	
30	Hindupur	14,217	1+1	1,492	1,017	2,513	1,257	638	497	59	580	19	19	
31	Hospet	21,673	1+2	1,469	1,777	3,246	1,082	1,110	966	132	1,104	3	3	
32	Karaisudi	21,672	1+2	1,380	731	2,111	704	643	252	328	626	17	17	
33	Karūr	19,860	1+2	1,554	1,291	2,845	948	860	248	569	1,657	...	...	
34	Kodakāñal	6,523	1+0	340	259	599	599	375	320	40	374	1	1	
35	Kumbakonam	62,317	3+6	5,911	4,682	10,593	1,175	2,088	1,563	449	2,033	3	3	
36	Kurnool	36,315	3+3	9,036	6,263	15,299	2,548	1,981	902	742	1,657	288	288	
37	Madras	647,230	57	184,266	123,996	308,262	5,408	35,693	23,179	11,638	35,275	348	348	
38	Madura	182,018	12+0	38,387	32,805	71,192	5,933	8,094	6,582	1,354	8,019	63	63	
39	Mangalore	66,758	3+6	5,762	7,064	12,826	1,425	2,594	2,088	798	2,903	1	1	
40	Mannārgudi	22,764	1+2	1,708	918	2,626	875	718	386	223	628	23	23	
41	Masulipatam	56,928	3+4	3,565	1,886	5,451	779	1,711	806	696	1,606	28	28	
42	Māyavaram	31,887	2+2	3,872	2,980	6,852	1,708	1,116	574	461	1,068	47	47	
43	Nandyāl	22,608	1+2	1,895	1,012	2,907	989	686	486	167	656	21	21	
44	Narasaraopet	15,403	1+1	734	673	1,407	703	391	238	150	339	2	2	
45	Necapattam	48,527	2+4	3,766	2,711	6,477	1,077	1,406	554	763	1,335	65	65	
46	Nellore	45,885	3+4	5,696	3,692	9,388	1,341	2,273	951	1,127	2,203	39	39	
47	Ongole	16,672	1+1	855	489	1,344	677	424	260	155	417	7	7	
48	Ootacamund	24,616	2+0	844	646	1,490	745	957	770	187	957	...	...	
49	Palacole	16,906	1+2	1,524	737	2,261	733	488	292	219	437	18	18	
50	Palamcottah	51,980	1+3	3,619	2,009	5,628	1,407	764	403	339	746	18	18	
51	Palghat	49,064	2+3	2,755	2,592	5,347	1,059	1,540	1,264	188	1,515	...	...	
52	Palni	18,899	1+2	2,103	1,287	3,390	788	788	502	217	732	6	6	
53	Peddāpuram	17,331	1+0	1,120	543	1,663	1,663	578	307	245	560	18	18	
54	Periyakulam	23,004	1+0	987	994	1,981	1,981	907	756	193	964	1	1	

Statement No. I showing the Particulars of Vaccination in the Province of Madras for the official year 1938-39—cont.

Number.	Municipalities.	Re-vaccination.			Percentage of successful cases in which the results were known.		Persons successfully vaccinated per 1,000 of population.	Total.	Number of all successful primary vaccinations, and re-vaccinations.	Average cost of each successful case.
		Total number of operations.	Successful.	Unknown.	Primary vaccination.					
					(17)	(18)				
(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)		
1	Adoni	3,214	1,114	689	100.0	44.1	67.8	1,277	2,415	0.85
2	Anakapalle	2,002	167	1,489	96.4	32.6	33.8	747	789	0.15
3	Anantapur	2,604	691	177	100.0	28.5	89.2	622	1,347	0.75
4	Bellary	5,183	617	166	99.3	12.3	55.1	1,474	2,621	0.90
5	Bezwada	6,478	1,212	714	99.9	21.0	58.4	1,757	8,531	0.80
6	Bimlipatam	1,067	316	...	99.4	29.5	64.7	491	623	0.12
7	Bodinayakanur	2,365	680	211	99.8	31.6	63.4	288	1,713	0.29
8	Calicut	12,164	2,535	1,297	99.2	28.3	65.4	2,292	6,489	0.58
9	Cannanore	2,068	148	512	98.5	9.5	25.7	910	883	1.06
10	Chioacole	1,263	541	...	100.0	42.8	59.0	694	973	0.11
11	Chidambaram	2,125	532	275	99.7	28.8	52.8	682	1,325	0.78
12	Chinglepat	2,617	1,080	171	100.0	44.2	112.9	485	1,821	0.49
13	Chirala	1,431	603	214	99.7	49.5	70.0	591	1,320	0.72
14	Chittoor	13,472	645	2,129	98.5	5.7	94.8	839	2,087	0.65
15	Cocanada	6,295	811	737	99.8	14.6	34.3	1,591	2,284	0.11
16	Cochin	2,128	563	91	100.0	27.6	69.6	1,224	1,589	0.12
17	Coimbatore	15,159	1,368	2,446	99.8	10.7	54.0	2,434	5,139	0.77
18	Conjeevaram	11,376	774	1,749	99.9	8.0	60.6	1,356	3,957	0.56
19	Coonoor	400	75	85	99.1	20.5	43.0	886	616	1.06
20	Cuddalore	6,064	1,324	370	99.8	23.3	55.9	1,435	3,301	0.61
21	Cuddapah	2,245	360	291	100.0	18.4	51.1	634	1,154	0.81
22	Davakottai	2,092	159	947	94.8	13.9	33.0	306	672	0.70
23	Dharsapuram	1,075	365	76	100.0	33.5	51.5	432	938	0.74
24	Dindigul	7,621	1,580	867	99.8	23.1	76.0	1,152	3,317	0.57
25	Elore	3,867	1,119	372	99.8	37.4	53.4	1,093	3,085	0.88
26	Erode	2,870	646	49	99.8	22.9	47.9	816	1,612	0.81
27	Gadivada	3,690	1,045	319	100.0	31.0	90.3	519	1,809	0.47
28	Gadivattam	2,212	175	224	98.4	8.8	39.3	490	970	0.81
29	Gandur	18,744	675	11,547	95.8	9.4	48.4	1,834	3,155	0.94
30	Hindupur	1,935	422	136	95.1	23.5	69.1	609	982	0.99
31	Hospet	2,137	192	1,082	99.7	18.2	59.8	571	1,296	0.71
32	Karaikudi	1,463	246	603	100.0	28.4	42.3	514	872	0.95
33	Karr	1,985	1,499	136	100.0	31.1	118.8	692	2,359	0.48
34	Kodaikanal	224	68	36	100.0	30.9	68.2	269	432	0.91
35	Kumbakonam	8,535	27	1,362	99.9	0.4	33.1	1,613	2,060	0.12
36	Kurnool	13,308	3,570	1,478	97.9	30.2	148.0	31,991	72,552	0.70
37	Madras	272,570	87,277	71,711	99.8	18.6	112.1	7,538	22,150	0.56
38	Madura	63,106	14,131	7,730	99.9	25.5	121.7	2,127	5,652	0.60
39	Mangalore	9,311	2,749	300	99.0	28.6	84.7	492	780	0.10
40	Mannargudi	1,912	152	800	98.9	13.7	34.3	492	780	0.10
41	Masulipatam	3,747	457	344	99.6	13.4	38.2	1,361	2,063	0.10
42	Māyavaram	5,714	704	2,045	99.7	19.2	55.9	673	1,772	0.61
43	Nandyāl	2,217	351	233	97.2	17.7	44.5	621	1,007	0.91
44	Narasaraopet	1,016	174	81	100.0	18.6	36.6	670	563	1.31
45	Negapatam	5,064	711	1,271	99.6	18.7	42.2	612	2,046	0.49
46	Nellore	7,122	1,388	682	98.6	20.8	77.2	1,520	8,541	0.61
47	Ongole	930	530	84	100.0	61.2	56.8	452	947	0.18
48	Ootacamund	533	143	53	100.0	29.7	44.7	824	1,100	0.78
49	Palacole	1,803	587	643	99.3	51.5	61.2	567	1,034	0.89
50	Palamcottah	4,864	879	114	100.0	18.5	31.3	879	1,625	0.89
51	Palghat	3,311	914	284	99.5	25.9	49.5	1,057	2,429	0.61
52	Palni	2,655	920	82	100.0	35.8	87.4	588	1,652	0.58
53	Peddapuram	1,085	271	294	100.0	34.3	47.9	394	831	0.77
54	Periyakulam	1,017	123	233	99.8	15.7	47.8	386	1,087	0.58

Statement No. I showing the Particulars of Vaccination in the Province of Madras for the official year 1938-39—cont.

Number.	(1)	(2)	(3)	(4)	Total number of persons vaccinated.			(8)	Primary vaccination.				(13)			
					Populations of municipalities according to the census of 1931.	Average number of vaccinators employed throughout the year.	Males.		Females.	Total.	Average number of persons vaccinated.	(9)		Successful.		
														Under 1 year.	1 and under 6 years.	Total of all ages.
55	Pollachi	..	22,112	1+2	2,325	2,170	4,495	1,498	783	425	275	713	67			
56	Proddatur	..	20,124	1+1	1,972	518	2,490	1,245	622	478	112	591	27			
57	Rajahmundry	..	63,526	3+5	3,295	4,725	8,020	1,003	1,982	1,199	727	1,951	18			
58	Saidapet	..	33,037	3+3	4,995	3,057	8,052	1,342	1,578	894	541	1,479	91			
59	Salem	..	102,179	3+0	11,351	12,655	24,006	8,092	4,678	2,927	1,547	4,633	..			
60	Sivakasi	..	15,212	1+1	1,213	931	2,144	1,072	536	260	264	525	..			
61	Srirangam	..	24,663	1+2	1,363	1,218	2,581	860	721	539	175	721	..			
62	Srivilliputtur	..	32,385	2+2	2,829	2,314	5,143	1,286	1,086	810	256	1,076	..			
63	Tadpatri	..	12,620	1+1	1,348	760	2,108	1,054	636	295	327	628	4			
64	Tanjore	..	68,889	3+5	4,951	4,157	9,108	1,126	2,656	1,719	888	2,629	25			
65	Tellicherry	..	30,349	2+2	1,185	1,082	2,167	542	908	461	410	895	13			
66	Tenali	..	34,580	2+3	2,850	1,589	4,439	888	1,287	573	626	1,241	43			
67	Tinnevely	..	57,078	3+4	4,372	3,220	7,592	1,085	1,342	826	320	1,181	107			
68	Trichinopoly	..	142,843	6+11	11,134	6,539	17,673	1,040	5,757	3,256	2,182	5,656	59			
69	Tirupati	..	19,138	1+2	1,560	1,634	3,194	1,065	552	498	53	552	..			
70	Tirupattur	..	18,299	1+2	1,620	1,000	2,620	873	634	271	278	623	..			
71	Tiruppur	..	18,059	1+2	1,831	1,064	2,895	965	1,015	505	452	971	33			

72	Tiruvānūr	20,371	1+2	1,537	685	2,222	741	663	432	209	652	11
73	Tiruvannamalai	27,789	1+2	3,641	2,744	6,385	2,128	685	242	365	671	12
74	Tuticorin	60,397	3+6	4,427	8,026	12,453	386	2,534	1,197	993	2,323	188
75	Udumalpet	12,184	1+1	1,420	542	1,962	981	444	1,177	253	437	...
76	Udipi	17,250	1+1	2,737	2,235	5,032	2,516	894	432	410	891	...
77	Vaniyambadi	22,940	1+2	1,392	778	2,170	723	953	543	353	953	...
78	Vellore	57,265	3+4	8,002	4,944	12,946	1,849	2,715	1,833	1,019	2,701	13
79	Villupuram	20,127	1+2	785	451	1,236	412	764	355	349	732	...
80	Virudhunagar	33,081	1+2	1,680	1,716	3,396	1,132	1,319	938	324	1,304	13
81	Vizagapatam	57,303	3+5	4,715	5,125	9,840	1,230	2,089	1,023	962	2,056	15
82	Vizianagaram	44,698	3+4	3,373	3,073	6,446	921	1,842	1,158	670	1,751	77
83	Walajapet	11,102	1+1	641	651	1,292	646	342	289	79	342	...
	Total of Municipalities	3,715,160	218+224*	481,284	359,937	841,221	1,903	152,232	94,270	50,240	147,905	3,428
1	Bangalore	...	2	715	558	1,273	636	377	203	146	349	...
2	Secunderabad	...	6	20,375	19,475	39,850	6,642	4,735	3,226	940	4,204	279
	Total of Cantonments	...	8	21,090	20,033	41,123	5,140	5,112	3,429	1,086	4,553	279
	Poonamallee Health Unit	43,599	4†	5,916	5,206	11,122	2,781	2,012	1,091	652	1,305	165
	Canvey-Mettur Project	...	1	499	473	972	972	410	64	160	226	180
	Total of cases vaccinated by Medical Subordinates and Port Health Officers.	...	...	11,306	129	11,435	...	59	3	4	58	1
	Total of cases performed under Railway administration	...	...	7,567	3,323	10,890	...	1,822	742	825	1,654	135
	Dispensaries	...	...	58	70	128	...	111	29	60	89	10
	Grand total	44,422,597	834+490	2,280,460	1,780,824	4,041,284	3,052	1,481,847	691,500	597,365	1,296,862	158,854

* Sanitary Inspectors of municipalities are also doing vaccination work.
† Health Inspectors.

Table 1. Results of vaccination work done in the Republic of Kazakhstan in 1981-1982

Number	Municipality	Re-vaccination			Primary vaccination			Persons vaccinated in the last year		Total population of the Republic of Kazakhstan	Average cost of vaccination per person
		Successful	Unknown	Re-vaccination	Primary vaccination	Unknown	Re-vaccination	Primary vaccination	Unknown		
1	Almaty	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2	Actobe	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
3	Atyrau	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
4	Bakal	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
5	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
7	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
8	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
9	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
10	Berezniki	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* This excludes vaccination work done in the Republic of Kazakhstan in 1981-1982

Summary of Statement No. I.

	Total number of persons vaccinated.		Total number of operations performed.		Percentage of successful cases in which the results were known.		Average number of persons vaccinated by each vaccinator.		Number of children successfully vaccinated.		Ratio of successful vaccinations per 1,000 of population.		Total cost of department.		Number of all successful vaccinations performed.		Average cost of each successful case.	
	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Primary.	Re-vaccination.	Vaccinators employed.	Persons vaccinated by each vaccinator.	Under one year.	One year and under six years.	per 1,000 of population.	Total cost of department.	Number of all successful vaccinations performed.	Average cost of each successful case.	RS.	A. P.	RS.	A. P.
By special staff.																		
Districts excluding municipalities ...	1,289,735	1,834,658	1,320,089	1,834,758	97.7	24.1	607 + 262	3,595	561,872	544,335	35.9	5,86,498	15	5	1,459,491	0	6	6
Municipalities ...	151,915	689,306	152,232	689,306	98.4	21.1	218 + 234	1,903	94,270	50,240	71.3	1,15,085	0	0	264,843	0	6	11
Poonamallee Health Unit ...	1,971	9,151	2,012	9,170	97.7	21.9	0 + 4	2,781	1,091	652	79.4	1,549	14	6	3,462	0	7	2
Total ...	1,443,621	2,533,115	1,474,333	2,533,234	97.9	23.2	825 + 490	3,024	687,233	595,227	38.9	7,13,133	13	11	1,727,736	0	6	7
By Military Cantonments ...	4,933	36,190	5,112	36,190	94.2	39.7	8 + 0	5,140	3,429	1,086	...	4,498	15	8	16,795	0	4	9
By Medical Subordinates and Port Health Officers.	59	11,376	59	11,376	100.0	58.8	...	...	8	4	...	...	...	...	...	...	...	...
By Railway Dispensaries ...	1,822	9,068	1,822	9,068	98.0	19.0	...	...	742	825	...	...	...	...	...	...	...	...
Canvey-Mettur project ...	408	564	410	564	98.8	4.8	1	972	64	160	...	...	...	...	...	...	...	...
Dispensaries ...	111	17	111	17	98.0	87.5	...	...	29	60	...	...	...	...	...	...	...	...
Total ...	1,450,954	2,590,330	1,481,947	2,590,449	97.9	23.6	834 + 490	3,052	681,500	597,362	39.5	7,18,082	13	7	1,744,592	0	6	7

Statement No. II showing the number of Persons primarily vaccinated and the Number of those Persons who were successfully vaccinated in the Province of Madras in each of the undermentioned years.

	Persons primarily vaccinated in the Madras Presidency.										
	1929-1930.			1930-1931.			1931-1932.			1932-1933.	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Government vaccinators ...	26,588	23,894	23,809	21,481	26,459	24,574	31,180	28,118	30,822	26,415	
Local Fund do. ...	1,270,244	1,165,405	1,257,794	1,162,678	1,343,229	1,225,234	1,233,161	1,127,363	1,113,453	961,421	
Cantonment do. ...	5,966	5,600	5,346	4,950	6,172	5,465	5,473	5,114	6,783	6,286	
Municipal do. ...	120,176	117,136	122,184	119,872	129,593	127,430	133,177	131,112	144,773	141,093	
Dispensaries ...	1,857	1,842	983	960	989	988	745	740	...	...	
Medical subordinates ...	110	101	262	247	244	186	193	109	109	107	
Railways ...	688	625	1,345	1,303	1,328	1,274	2,808	2,653	1,889	1,769	
Total ...	1,425,624	1,314,603	1,411,723	1,311,491	1,508,024	1,385,161	1,406,717	1,365,209	1,297,829	1,137,091	

Statement No. II showing the number of Persons primarily vaccinated and the Number of those Persons who were successfully vaccinated in the Province of Madras in each of the undermentioned years—cont.

Persons primarily vaccinated in the Madras Presidency—cont.										
	1934-1935.		1935-1936.		1936-1937.		1937-1938.		1938-1939.	
	Total number. (12)	Number vaccinated. (13)	Total number. (14)	Number vaccinated. (15)	Total number. (16)	Number vaccinated. (17)	Total number. (18)	Number vaccinated. (19)	Total number. (20)	Number vaccinated. (21)
Government vaccinators ...	29,681	24,102	26,500	23,432	8,844	7,394	9,471	7,694	8,886	7,562
Local Fund do. ...	1,203,881	1,024,766	1,250,886	1,068,020	1,252,418	1,050,939	1,304,411	1,115,613	1,811,203	1,133,030
Cantonment do. ...	4,535	3,971	5,613	4,876	6,002	5,312	6,002	5,231	5,112	4,553
Municipal do. ...	139,099	134,906	133,379	129,781	132,162	128,020	142,979	139,407	152,282	147,905
Dispensaries ...	...	...	...	...	...	...	...	...	111	99
Medical subordinates ...	1,869	1,409	374	342	389	197	89	78	59	58
Railways ...	2,111	1,919	1,961	1,864	1,522	1,457	1,674	1,590	1,822	1,654
Poonamallee Health Unit	...	...	...	...	1,917	1,759	1,640	1,449	2,012	1,805
Cauvery-Mettur project ...	...	...	...	...	...	...	237	141	410	226
Total ...	1,881,176	1,191,073	1,418,663	1,226,315	1,403,254	1,195,078	1,466,503	1,271,203	1,481,847	1,286,892

Statement No. III showing the Number of Vaccinations performed in Municipal Towns on Children under One Year of Age (G.O. Mis. No. 1534 L., dated 6th December 1909).

Municipalities.	Number of births available for vaccination during the year 1938-39.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending March 1939.	Percentage of infantile vaccination to total births.	
				1937-38.	1938-39.
Adoni ...	1,512	219	751	68.0	64.0
Anakāpalle ...	1,022	200	415	52.9	40.6
Anantapur ...	802	54	285	61.0	62.0
Bellary ...	2,173	353	1,212	59.4	53.26
Bezwada ...	2,712	789	551	38.7	38.0
Bimlipatam ...	417	70	255	66.0	61.1
Bōdinayakkantur ...	1,123	197	771	91.8	70.6
Calicut ...	5,677	569	3,231	50.3	48.2
Cannanore ...	1,043	121	506	41.7	48.5
Chicacole ...	887	91	255	60.0	56.0
Chidambaram ...	884	150	424	44.3	42.1
Chingleput ...	828	105	323	48.7	56.59
Chirala ...	702	90	319	42.4	51.1
Chittoor ...	1,095	159	448	46.9	51.6
Cocanada ...	2,059	395	656	52.0	37.0
Cochin ...	959	136	629	67.3	66.7
Coimbatore ...	4,097	609	1,718	66.4	54.9
Conjeeveram ...	4,508	506	1,995	73.8	65.0
Coonoor ...	577	82	319	59.5	61.51
Cuddalore ...	2,338	372	1,075	44.4	45.48
Cuddapah ...	1,115	145	482	47.8	49.1
Devakottah ...	557	79	201	40.0	40.0
Dhārāpuram ...	577	52	286	73.2	70.06
Dindigul ...	2,121	350	1,536	71.0	72.41
Ellore ...	2,421	552	1,032	56.8	53.0
Erode ...	1,060	96	335	37.2	42.8
Gudivada ...	806	133	495	51.7	61.2
Gudiyāttam ...	1,315	230	587	87.0	82.1
Guntūr ...	4,579	807	1,163	24.3	23.6
Hindupur ...	642	91	368	87.8	80.1
Hospet ...	914	143	597	82.2	77.77
Karaikudi ...	665	120	234	42.0	22.4
Karūr ...	651	143	248	36.7	30.7
Kodaikanal ...	362	45	268	98.6	98.2
Kumbakonam ...	2,944	390	1,113	39.2	37.8
Kurnool ...	623	204	532	84.7	85.3
Madras ...	31,809	4,544	14,405	68.3	72.9
Madura ...	8,938	1,364	5,367	67.7	64.8
Mangalore ...	2,643	164	1,810	86.9	73.21
Mannārgudi ...	924	122	343	38.9	36.8
Masulipatam ...	2,747	489	677	29.2	30.98
Māyavaram ...	1,054	104	574	56.9	54.4
Nandyal ...	883	125	392	51.4	55.04
Narasaraopet ...	564	134	236	67.0	55.0
Negapatam ...	1,750	366	554	48.3	56.7
Nellore ...	2,920	341	997	27.1	41.8
Ongole ...	756	141	277	52.8	40.0
Ootacamund ...	1,104	129	663	65.6	63.3
Palacole ...	431	99	202	66.0	63.8
Palamcottah ...	1,206	290	416	66.7	63.8
Palghat ...	2,065	311	1,161	60.8	58.48

Statement No. III showing the Number of Vaccinations performed in Municipal Towns on Children under One Year of Age (G.O. Mis. No. 1534 L., dated 6th December 1909)—cont.

Municipalities.	Number of births available for vaccination during the year 1938-39.	Number of deaths amongst children under one year during the year.	Number of successful vaccinations on children under one year during the year ending March 1939.	Percentage of infantile vaccination to total births.	
				1937-38.	1938-39.
Palni ...	766	133	502	56.4	65.9
Peddāpuram ...	626	75	312	68.7	49.9
Periyakulam ...	1,053	171	662	82.1	71.79
Pollachi ...	956	202	425	47.5	46.1
Proddatur ...	878	107	478	54.3	50.5
Rajahmundry ...	2,507	554	1,020	52.4	47.96
Saidapet ...	1,417	201	894	61.6	63.1
Salem ...	4,176	550	2,560	57.3	36.5
Sivakāsi ...	462	62	260	63.0	98.5
Srirangam ...	830	98	443	89.1	87.54
Srivilliputtar ...	1,235	202	779	62.0	67.0
Tadpatri ...	498	72	242	30.2	53.54
Tanjore ...	2,961	419	1,460	50.7	51.7
Tellicherry ...	890	121	467	48.9	47.67
Tenali ...	1,062	173	315	31.3	47.32
Tinnevelly ...	2,302	483	809	46.1	35.1
Trichinopoly ...	9,987	1,557	4,636	51.3	55.8
Tirupati ...	714	118	366	75.5	69.74
Tirupattar ...	898	86	271	34.6	31.3
Tiruppur ...	1,288	204	505	42.4	37.1
Tiruvārūr ...	802	158	311	47.4	53.8
Tiruvannāmalai ...	1,435	210	292	42.8	20.34
Tuticorin ...	2,164	399	980	49.4	48.5
Udamalpet ...	757	98	176	38.0	43.5
Udipi ...	702	92	402	23.8	61.5
Vāniyambādi ...	1,053	174	566	58.9	59.0
Vellore ...	3,229	427	1,523	50.4	47.1
Villupuram ...	693	71	266	64.0	51.2
Virudhunagar ...	1,391	233	885	68.5	95.5
Vizagapatam ...	2,645	484	759	43.4	43.92
Vizianagram ...	2,070	374	994	46.3	63.5
Walajapet ...	363	48	224	55.6	61.7

Statement No. IV—Comparative statement showing Infantile Vaccination in Districts for 1937-38 and 1938-39.

Number.	Districts.	Percentage of infantile vaccination to total births registered.		Increase or decrease.	Number.	Districts.	Percentage of infantile vaccination to total births registered.		Increase or decrease.
		1937-38.	1938-39.				1937-38.	1938-39.	
1.	Anantapur ...	38.9	38.3	- 0.6	13.	Kurnool ...	34.9	35.4	+ 0.5
2.	Arcot, North ...	47.0	49.2	+ 2.2	14.	Madura ...	60.0	57.9	- 2.1
3.	Arcot, South ...	33.4	32.0	- 1.4	15.	Malabar ...	39.1	38.8	- 0.3
4.	Bellary ...	41.2	44.5	+ 3.3	16.	Nellore ...	32.0	33.4	+ 1.4
5.	Chingleput ...	33.5	35.1	+ 1.6	17.	Nilgiris, The ...	47.8	56.5	+ 8.7
6.	Chittoor ...	45.4	40.9	- 4.5	18.	Ramnad ...	35.4	32.8	- 2.6
7.	Coimbatore ...	40.4	36.4	- 4.0	19.	Salem ...	33.8	38.9	+ 5.1
8.	Cuddapah ...	44.2	41.8	- 2.4	20.	South Kanara ...	26.8	35.2	+ 8.4
9.	Godavari, East ...	29.8	27.9	- 1.9	21.	Tanjore ...	28.5	31.2	+ 2.7
10.	Godavari, West ...	36.1	27.1	- 9.0	22.	Tinnevelly ...	47.1	45.6	- 1.5
11.	Guntur ...	30.9	33.3	+ 2.4	23.	Trichinopoly ...	46.4	39.8	- 6.6
12.	Kistna ...	37.0	30.8	- 6.2	24.	Vizagapatam ...	34.2	35.5	+ 1.3

FORTY-NINTH ANNUAL REPORT OF THE SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS FOR THE YEAR 1938.

1. *Water-supply Schemes.*—The Virudunagar water-supply scheme came into operation during the year and the number of towns both municipal and panchayat having the benefit of protected water-supply schemes is now 43 as against 42 in the previous year.

2. The following is a list of new water-supply schemes or improvement schemes for existing works for which funds were allotted in the budget for the first time.

Name of work.	Estimated cost. RS.	Remarks.
1 Calicut water-supply scheme	13,97,000	Work started in January 1939.
2 Coimbatore water-supply improvements.	2,40,000	Work not taken up pending revision of scheme contemplated.
3 Ellore water-works—Construction of an additional filter bed.	40,000	Vide remarks under item 4 (8) below.
4 Hindupur water-supply scheme	2,08,620	Vide remarks under item 6 below.
5 Gudiyattam water-works improvements.	98,000	Works in progress.
6 Perur water-supply	8,200	Vide remarks under item 12 below.
7 Mathiapalayam water-supply	9,800	Vide remarks under item 13 below.
8 Mettupalayam water-supply	1,75,000	Actual work is to be started in 1939.
9 Valparai water-supply	22,000	Vide remarks under item 24 below.

3. The progress of new water-supply schemes under execution during the year is as under:—

Number and name of work.	Estimated cost. RS.	Expenditure to end of December 1938. RS.	Agency of execution.	Progress.
1. Adoni water-supply—Hagari scheme.	7,70,000	1,20,111	P.W.D. ...	Sinking of suction and infiltration wells and laying of and connecting syphon pipes completed. Laying of pipes for pumping main in progress.

Number and name of work.	Estimated cost. RS.	Expenditure to end of December 1938. RS.	Agency of execution.	Progress.
2 Arkonam water-supply.	1,92,400	1,53,185	P.W.D. ...	Service reservoir, suction well and infiltration gallery completed. Laying and jointing of pipes practically completed. Engine house nearing completion and pumping plants received for erection.
3 Batlagundu water-supply.	71,000	8,203	District Board and P.W.D. control.	Well sunk and yield test completed. Design of distribution works in progress.
4 Bodinayakkanur water-supply.	5,82,710	829	P.W.D. ...	Land acquisition and planting of demarcation stones in progress.
5 Calicut water-supply.	13,97,000	...	Do. ...	Work started in January 1939.
6 Cuddapah water-supply (Pennar scheme).	2,85,000	...	Do. ...	Owing to freshes in the river no appreciable progress was made. The connecting main for the suction well was being laid. Suction well—The steining was built to a depth of 17½ feet.
7 Chodavaram water-supply.	70,000	...	District Board.	No information is available.
8 Karur water-supply.	2,94,100	...	P.W.D. ...	The works completed are:— (1) Infiltration wells. (2) Providing syphon connexions. (3) Suction well. (4) Pumping main. (5) R.C. reservoir.
9 Karamadai water-supply.	17,400	...	District Board.	Excavation of well and yield tests were in progress.
10 Manapparai water-supply.	59,000	19,044	Do.	Watchman's quarters completed. Supply of pipes for pumping main and distribution system completed. Pump chamber progress.
11 Mettupalaiyam water-supply.	1,75,000	...	P.W.D. ...	The estimate was sanctioned by the Superintending Engineer, Coimbatore Circle on 10th December 1938.
12 Perur, W. S. ...	8,200	...	...	The approval of the Coimbatore Municipality to tap water from the Siruvani Dam remains to be obtained before taking up the work.
13 Mathiapalayam, W. S.	9,200	...	...	Whether P.W.D. or District Board is to execute the scheme, is under consideration.

Number and name of work.	Estimated cost.	Expenditure to end of December 1938.	Agency.	Progress.
	Rs.	Rs.		
14 Peddapuram, W.S.	1,07,460	781	P.W.D.	... Land acquisition still pending with Revenue Department.
15 Penukonda, W.S.	47,736	50	District Board.	Revised proposals have been made and scheme can be taken up for execution only after orders of Government are received.
16 Hindupur, W.S.	2,08,620	382	P.W.D.	... The question of revising the scheme so as to give house connexions is under consideration.
17 Pollachi, W. S.	4,78,000	...	Do.	... Works nearing completion.
18 Sembiam, W. S.	1,25,550	...	Do.	... Work of infiltration gallery in progress.
19 Salem-Mettur W. S.	22,97,000	50,722	Do.	... Works in Nangavalli in progress. A fair weather road was formed to a length of two miles along the line of pumping main alignment. Acceptance of tenders for gravitation main, reservoir and pipes was in correspondence.
20 Srirangam, W. S. (Cheap scheme.)	85,000	7,904	Do.	... The construction of motor and pump house and compound wall for head-works completed.
21 Tiruppur, W. S.	1,84,000	...	Do. (with municipal staff.)	Works in progress.
22 Tiruvallur, W. S.	1,32,400	43,495	P.W.D.	... Work in full swing. Almost the full length of pumping main has been laid and infiltration gallery completed. The suction well was sunk.
23 Virudhunagar, W. S.	6,75,000	6,15,468	Do.	... The work was completed and handed over to the municipality on 1st August 1938.
24 Valparai, W. S.	22,000	...	...	Whether work is to be executed by P.W.D. or District Board is under consideration.
25 Voyalpad, W. S.	41,000	25	District Board.	Materials to start work were being collected.

4. Improvements to and extensions of the existing schemes were in progress or completed in the following towns to meet the needs of the growing population :—

1 Anantapur, W. S.	14,050	12,734	P.W.D.	... Works were completed during the year.
2 Bezwada, W. S.	2,41,700	...	Municipality under the control of P.W.D.	Work in progress.

Number and name of work.	Estimated cost.	Expenditure to end of December 1938.	Agency.	Progress.
	Rs.	Rs.		
3 Coonoor W. W. improvements (Ralliah Dam.)	1,92,000	...	Municipality and P.W.D. control.	The construction of the dam is in progress.
4 Cocanada W. W. Improvements Part II—(1) Construction of R. C. reservoir, and (2) Installation of mechanical filter plant.	1,96,000	43,461	Do.	All the concrete work in the reservoir was completed. The pipe connexions were partly laid.
5 Guntur Municipality Yengalapalem W. W. improvements.	72,500	...	Municipality.	Work completed in March 1938.
6 Dindigul W. W. improvements.	12,400	...	Municipality and P.W.D. control.	The Pandiyan well was sunk to a depth of 40 feet. An electrical pump set was put up.
7 Electrification of Erode W. W. pumping plants.	50,800	...	Municipality.	Work practically completed but for installation of meter.
8 Ellore W. W. —Construction of a fourth filterbed.	40,000	...	P.W.D.	... Indent for pipes placed through the Indian Stores Department.
9 Gudiyattam W. W. improvements.	98,000	...	Do.	... Indent for pipes placed with Indian Stores Department. Tenders for service reservoir were called for and tenderers for other items of work selected.
10 Kodaikanal W. W. improvements (Storage tank).	21,150	...	Do.	... Work started in January 1939.
11 Nellore W. W. improvements.	96,000	73,180	Do.	... The work was practically completed during the year.
12 Saidapet W. S. Extension to Mambalam, Guindy, etc.	60,570	47,685	Do.	... The work has been completed with the exception of fixing air valve over Guindy Bridge.

5. Investigations that were in progress or were completed during the year—

1 Tirupathi-Tiruchanur investigation.	W.S.	Investigation suspended pending examination of existing riparian rights.
2 Arantangi W.S. investigation.	...	Investigation completed. The detailed drawing up of the scheme is taken up.
3 Tanjore W.S. investigation	...	Investigation completed. Report is under preparation.

4 Pithapuram W.S. investigation. Investigation completed. Preliminary report under correspondence with Chief Engineer.

5 Sivaganga W.S. investigation. Investigation in progress.

6. Preparation of plans and estimates were in progress for the following schemes :—

	Rs.
1 Srivilliputtur W.S. scheme	5,63,500
2 Chittoor W.S. scheme	3,60,000
3 Cochin W.S. scheme	1,50,000
4 Palamcottah W.S. (but held up)	4,57,000

7. Plans and estimates submitted to Government—
Srivilliputtur water-supply 5,63,000

8. *Drainage.*—No new drainage schemes were brought into operation during the year and the number of municipal towns possessing drainage system continues to be only four, the same as in the previous year.

9. Progress in execution of drainage schemes—

Name of work.	Estimated cost.	Expenditure to end of December 1938.	Agency.	Progress.
	Rs.	Rs.		
Bezwada drainage ...	7,54,800	6,08,457	P.W.D.	The scheme has been put into operation. Work in overflow drain in Railway Colony was taken up. Work on hill drains 2 and 3 completed. Construction of main carrier for sewage farm in progress.
Brucepet drainage scheme (Bellary Municipality.)	4,39,009	1,60,686	Do.	Construction of open drains in progress. Sewage farm is laid out. Improvements to storm water drains were also in progress.
Salem drainage ...	5,45,000	1,43,516	Municipality under P.W.D. control.	Fourth instalment of the piecemeal execution of the drainage scheme was started in September.
Negapatam drainage.	6,74,500	86,163	P.W.D.	Construction of open drains and intercepting sewers and laying of pumping main in progress.
Rajahmundry partial drainage,	2,51,900	61,184	Municipality.	Construction of intercepting drains and laying of pumping mains in progress. Pump well, suction and screening wells and motor and pump-house completed

Name of work.	Estimated cost.	Expenditure to end of December 1938.	Agency.	Progress.
	Rs.	Rs.		
Srirangam drainage main scheme.	3,25,500	42,413	P.W.D. with municipal staff.	Acquisition of land for sewage farm in progress. Sludge well practically completed. Open drains 10, 18 and 52 completed. The revision of the scheme in some respects was taken up.
Srirangam drainage —Construction of drains in Ammamandapam and Royagapuram.	13,100	3,781	Municipality.	Work completed.
Tirupati drainage ...	3,56,000	...	P.W.D.	Third instalment of piecemeal execution of drainage scheme was in progress.
Chittoor drainage partial.	...	...	Municipality.	Government have not been able to allot funds to take up the execution of the scheme in 1939-40 as originally programmed. The execution of the 1st instalment has necessarily to be put off.
Coimbatore drain- age.	16,90,000	...	P.W.D.	The outfall sewer was carried out by the Municipality. Rest of the work to be taken up by the P.W.D.

10. Investigations in progress, or completed during the year or for which reports were being drawn up—

1 Calicut drainage ...	...	Investigation in progress.
2 Rasipuram drainage ...	...	
3 Saidapet drainage ...	...	
4 Udamalpet drainage ...	...	Investigation completed and report under preparation.
1 Cocanada drainage ...	...	
2 Chidambaram drainage ...	...	
3 Masulipatam drainage ...	...	Report sent to Government.
1 Conjeeveram drainage ...	...	
2 Tiruppur drainage...	...	
3 Vellore supplemental drain- age.	...	

11. Preparation of plans and estimates was in progress for the following schemes :—

1 Dindigul drainage.	7 Nellore drainage.
2 Ellore drainage.	8 Palni drainage.
3 Karaikudi drainage.	9 Tenali drainage.
4 Kodaikanal drainage.	10 Tuticorin drainage, and
5 Hindupur drainage.	11 Virudhunagar drainage.
6 Madanapalle drainage.	

12. Drainage schemes submitted to Chief Engineer during the year—

- | | |
|-------------------------|---------------------------|
| 1 Madanapalle drainage. | 4 Tuticorin drainage, and |
| 2 Kodaikanal drainage. | 5 Virudhunagar drainage. |
| 3 Palni drainage. | |

13. Preliminary reports for the following fifteen water supply-schemes and four drainage schemes were also prepared during the year—

	Approximate initial cost.	Approximate maintenance cost.
	RS.	RS.
Water-supply—		
1 Rasipuram water-supply	75,000	3,000
2 Mayavaram water-supply	2,87,000	6,200
3 Kayalpatnam water-supply and other villages.	5,24,000	11,000
4 Tindivanam Panchayat water-supply.	58,000	2,400
5 Sholingur water-supply	57,500	700
6 Nandyal water-supply	4,92,000	11,000
7 Guntur water-supply improvements—investigation since started.	20,26,000	26,000
8 Dowlaishwaram water-supply ...	65,000	2,500
9 Tuni and Samalkota water-supply (East Godavari district).	1,96,000	...
10 Draksharama water-supply (East Godavari).	82,000	2,400
11 Renigunta water-supply	14,000	1,100
12 Vizagapatam water-supply (Gosthani river source).	16,12,000	23,700
13 Biccavole, Voolapalle, Gollalamami-dada Panchayats (East Godavari district).	{ 37,500 31,000 38,500	{ 1,900 1,850 1,800
14 Amalapuram, Razole and Sivakodu water-supply (East Godavari).	{ 90,000 27,000	{ 2,700 1,450
15 Nuzvid water-supply (Kistna district).	40,000	2,900
Drainage—		
1 Chicacole drainage	3,78,000	3,700
2 Gopalapuram drainage	...	...
3 Guntur drainage	20,87,000	11,500
4 Tanuku drainage	8,500	...

14. The following water-supply and drainage investigations sanctioned by the Government remained to be taken up for want of staff or other reasons at the end of the year :—

- 1 Nandyal water-supply investigation.
- 2 Kumbakonam water-supply investigation (investigation taken up).

- 3 Palni water-supply—III stage.
- 4 Tenali water-supply investigation.
- 5 Anakapalle water-supply investigation.
- 6 Tanjore drainage investigation.
- 7 Rajapalaiyam water-supply investigation.
- 8 Arcot water-supply investigation (since taken up).
- 9 Gobichettipalaiyam water-supply investigation.
- 10 Guntakal water-supply investigation.
- 11 Sembiam drainage investigation (since taken up).
- 12 Tiruvannamalai drainage investigation.
- 13 Srivilliputtur drainage investigation.
- 14 Vriddhachalam water-supply investigation.
- 15 Dhone water-supply investigation.

15. *Miscellaneous.*—A statement showing particulars of estimates for sanitary works received from local bodies, scrutinized and sanctioned by this department is enclosed (Annexure I). Eighty estimates for Rs. 11,07,786 were sanctioned by this department during the year as against 71 estimates for Rs. 5,35,226 in 1937.

A statement showing the sanitary works done following the type designs of the Public Health Board is appended (Annexure II).

16. *Water-supply—Periodical analysis.*—As usual samples of water from the protected water-supplies were taken by the staff of the King Institute, Guindy, periodically and reports of analysis of water sent to this office and the local bodies concerned. The local bodies were advised to take steps, where necessary, to remedy defects.

17. *Experiments on water purification.*—Of the two experimental filter stations at Kilpauk and Guindy that were being maintained under the Sanitary Engineer's immediate control, the experimental station at Guindy was transferred to the Director, King Institute, in October 1938 and the question of transferring the experimental station at Kilpauk to the Corporation of Madras, is under the consideration of Government. Some experiments with activated carbon with the Red Hills water were in progress but owing to the threatened scarcity of water at the source of supply, the experiments were suspended in December 1938.

18. *Engineering College sewage disposal works.*—The maintenance of the Engineering College sewage disposal works which was under the control of the Sanitary Engineer was also transferred to the control of the Principal of the College.

19. *Lectures in Elementary Sanitary Engineering.*—As in previous years, the Instructor in Elementary Sanitary Engineering attached to this department continued to conduct the course of lectures on Elementary Sanitary Engineering to the students of Health Officers' and Sanitary Inspectors' classes in the Medical College, Madras. The necessity for a change in the system of training now in vogue is evident. The matter is under separate consideration.

20. *Engine Drivers and Water-works Fitters' examinations.*—The examinations for the grant of certificates of competency for Engine Drivers and Water-works Fitters were held in January 1938 by a Board of Examiners in the Public Works Workshops, Madras, with the Sanitary

Engineer as its President. The number of certificates granted is as under :—

					Number of certificates issued.	
					1937.	1938.
<i>Engine drivers—</i>						
Competency	...	...	...	...	28	53
Service	...	...	...	...	66	64
<i>Water works fitters—</i>						
Head-works fitter	...	...	...	...	18	12
Pipe-line fitter	...	...	...	...	25	17

The control of the conduct of these examinations has since been transferred to the Commissioner for Government Examinations—vide G.O. No. 19, P.W. (General), dated 5th January 1938.

21. *Inspection of water-works—Maintenance.*—The Sanitary Engineer and the Deputy Sanitary Engineers inspected the water-works under commission as far as time and funds permitted. The inspections reveal that generally in municipalities where protected water-supply schemes are in operation an officer of the grade of a Municipal Engineer is required in the Engineering department if the works are to be maintained in an efficient state. The absence of completion plans and connected and continuous reports on the schemes is a great handicap both to the Municipal Engineers who are in immediate charge of the works and to the inspecting officers. How best to remedy this state of affairs is under separate consideration.

22. *Pumping plants and machinery.*—The inspection of municipal pumping plants of both water-supply and drainage stations was done by the Mechanical Expert. This officer also prepared specifications for new plants and supervises their installation wherever necessary. A comparative statement of pumping particulars for the different stations prepared by this officer is annexed. (Annexure III).

23. *Municipal Engineers.*—Municipal Engineers have been appointed in 18 municipalities and the service is under the control of the Sanitary Engineer. In some large municipalities, such as, Negapatam, Conjeeveram, Erode, Karur, Vizagapatam, Masulipatam, Tirupathi, etc., where protected water-supplies installed at a large cost are in operation, the works continue to be in charge of subordinate officers, like Supervisors or Overseers. It is high time that competent Engineer Officers are employed by them. This aspect of the question deserves consideration when the re-organization of the Municipal Engineering service is taken up.

24. *Direction.*—Sri G. V. Rao continued as Sanitary Engineer to Government till 12th August 1938, forenoon when he was relieved by Mr. J. S. Westerdale, Superintending Engineer, Madras Circle. Mr. Westerdale held additional charge of the Sanitary Engineer's post till 30th December 1938, afternoon. In G.O. No. 4620 P.H., dated 22nd December 1938, Government have created a temporary post of

Superintending Engineer (Public Health) keeping the post of Sanitary Engineer in abeyance for the time being. The incumbent of the new post is designated as Superintending Engineer and Deputy Chief Engineer (Public Health). Sri A. V. Raman, Deputy Sanitary Engineer, Southern Circle, was appointed to it on 30th December 1938, afternoon.

The late Mr. Mahomed Howth held the post of Deputy Sanitary Engineer, Southern Circle, till 21st May 1938 when he suddenly died. The void caused by his death remains unfilled permanently. The Sanitary Engineer held additional charge of the Southern Circle till 10th June 1938, afternoon and Sri A. V. Raman from 11th June 1938, forenoon till 30th December 1938, afternoon.

Sri B. V. Narayana Rao, Officiating Deputy Sanitary Engineer, Northern Circle, died on 2nd January 1938 and the Sanitary Engineer held additional charge till 7th February 1938 and from this date the post is held by Sri K. Harihara Ayyar.

The post of Personal Assistant to the Sanitary Engineer was held by Sri S. L. N. Moorthy till 21st November 1938, afternoon except for the period 4th to 18th August 1938 when he was on leave, and Sri C. P. Subbayya held the post during the remaining part of the year.

Mr. S. A. Davis continued to hold the post of Mechanical Expert during the year.

25. *General.*—(i) During the year changes of a far-reaching character were introduced in the working of the department. Due to some administrative and executive defects brought to light the officer-in-charge of the department who was functioning as an independent head under the direct control of Government in the Public Health Department was placed under the administrative and technical control of the Chief Engineer, P.W.D. (General, Buildings and Roads), from 1st March 1938 as was the case prior to 15th December 1933. It is yet too early to assess the results of this change.

(ii) The recent policy with regard to the execution of major water-supply and drainage schemes has also been reversed, with a view to the speedy and efficient execution of these works (vide G.O. No. 2186, P.H., dated 15th June 1938). Such of the schemes as were being executed by the municipalities under the control of the Sanitary Engineer have been placed in direct charge of the Public Works Department or under its control. A special division and a few subdivisions have been created in the Public Works Department for this purpose. Much headway could however not be made as some of the schemes under execution required radical changes in the designs already sanctioned.

(iii) The present policy of conducting investigation of schemes as the first stage, preparation of detailed scheme plans and estimates as the second and the execution of the scheme as the third, has resulted in inordinate delays and even waste of money and labour. In many cases several years have elapsed between the time of investigation and the date of drawing up of plans as also between the stage of drawing up and the execution stage with the result that fresh levels had to be taken or the schemes had to be redesigned for execution to suit the altered conditions. In one or two cases schemes executed on the basis of plans and estimates prepared years previously have been found to fall short of requirements.

The progress should be continuous from the investigation stage to the completion of the work. It seems desirable to have a 5 or 10 years plan selecting water-supply and drainage schemes in the order of urgency with due regard to the funds available for execution of the schemes. The work of preparing plans and estimates during any year should be strictly confined to schemes that will be taken up for execution in the succeeding year. This change would avoid infructuous labour, time and money in the investigation and in the preparation of detailed plans and estimates for schemes which could not be taken up for execution for a long time to come.

MADRAS,
8th July 1939.

A. V. RAMAN,
Superintending Engineer (Public Health).

ANNEXURE I.

Statement showing the number and aggregate estimated cost of Sanitary Works prepared by local bodies and sanctioned or recommended for sanction by the Sanitary and Deputy Sanitary Engineers in 1938.

Particulars.	Water-supply.		Drainage.		Medical institutions.		Markets and slaughter houses.		Latrines.		Miscellaneous.	
	Number.	Amount. RS.	Number.	Amount. RS.	Number.	Amount. RS.	Number.	Amount. RS.	Number.	Amount. RS.	Number.	Amount. RS.
Below Rs. 2,500	32	19,613	6	25,496	1	325	..	..	..	..	..	..
Rupees 2,500 to Rs. 10,000	21	1,11,131	1	3,000	..	..	1	3,670	..	..	3	13,640
Rupees 10,000 to Rs. 50,000	2	44,100	..	..	..	..	2	38,126	..	..	1	23,950
Above Rs. 50,000	4	2,97,240	3	2,93,600	..	..	3	2,33,935	..	..	..	..
Total	59	4,72,084	10	3,22,096	1	325	6	2,75,691	..	..	4	37,590

Number of estimates 80 estimated to cost Rs. 11,07,786 against 71 estimates costing Rs. 5,35,226 in 1937.

ANNEXURE II.

Statement of works constructed on the basis of Public Health Board type-design by municipalities and local boards during the year 1938.

Number and name or description of work.	Locality, name of town or village.	Number of type-design on which work was based.	Number and date of Sanitary Engineer's or Deputy Sanitary Engineer's professional sanction.	Date of commencement of work.	Date of completion of work.	Full cost of the work.	Remarks as to the success or failure of type-design construction.
1 Dry earth latrines (4)	Chicacole	San. No. 49 of 1927.	"	February and March 1938.	May to October 1938.	Rs. 1,076	
2 Slaughter-house	Chirala	San. No. 318 of 1936.	"	July 1938	December 1938.	1,674	Successfully used.
3 Dry earth latrines (2)	Do.	San. No. 193 of 1928.	"	November 1938.	Do.	664	
4 Latrine for Municipal High School.	Do.	San. No. 49 of 1927.	"	September 1938.	April 1939	550	Successful.
5 Latrine	Conjeeveram	San. No. 193	"	1st February 1938.	20th February 1938.	340	Working very satisfactorily.
6 Dry earth latrine, eight seats	Pettai Road, Dindigul.	T.D. No. 193	"	25th November 1937.	1st March 1938.	510	Do.
7 Do.	Dindigul	Do.	"	Do.	15th March 1938.	483	Quite successful.
8 12, seated latrine	Gudiyattam	San. No. 49 of 1927.	"	January 1938.	14th March 1938.	412	The work is a success.
9 Dry earth latrine, 6 seats	Hindupur	Do.	"	1st December 1938.	8th February 1939.	296	Successful.
10 Combined latrine and urinal	Kumbakonam	T.D. No. 193	"	August 1938	October 1938.	243	Do.
11 Latrine	Peddapur	San. No. 49 of 1927.	"	12th April 1938.	14th July 1938.	628	Do.
12 Do.	Do.	Do.	"	2nd March 1938.	31st March 1938.	537	Do.
13 Latrine of 12 seats	Guntur	San. No. 141 of 1934.	"	1st April 1938.	20 May 1938	645	No complaints.
14 Slaughter-house	Satur	"	Local Board.	13th September 1937.	27th August 1938.	1,059	

176

177

ANNEXURE III.

Comparative Statement of Pumping Particulars for the year 1937-38.

Index number and stations.	1937. Cost of fuel and oil per million foot gallons.	1938. Cost of fuel and oil per million foot gallons.	Remarks.
(1)	(2)	(3)	(4)
1 Anantapur ...	ANNAS. 27	ANNAS. 40 Approx.	The plant continued to work satisfactorily throughout the year. The cost of operating the station increased consequent on the abnormal rise in the purchase price of charcoal. The question of electrifying the station at a cost of Rs. 5,390 is being taken up with the Municipality.
2 Bellary— Hagari Water Works.	7.8	6.4	The pumping plant was overhauled during the year. The practice of operating both units without a standby still persists and proposals to replace the gas units with electrical driven sets are under consideration.
3 Bellary— Booster Station.	...	...	The plant was brought into commission during the end of last year. No figures are furnished by the Municipality as regards the operating costs. The pumping machinery was inspected during the year and the efficiency of the pump sets found satisfactory.
4 Bezwada— Lawley Water Works.	6.5	4.6	The sets operated at higher efficiency during the year. Although a slight reduction in the rate of energy supplied by the Municipality was obtained it is hoped that with the advent of the thermal scheme further reduction in the operating costs will be realized.
5 Bezwada Drainage.	...	...	Although no recording apparatus is provided to exactly determine the quantity pumped the annual cost of maintaining the plant is reasonable, and inspections of the pumping machinery show them to be efficient in operation.
6 Chidambaram.	10.9	10.8	A reduction in the working costs has been obtained but the maintenance charges still continue to be high. Proposals to electrify the station matured and tenders for selection of the plant were under consideration.
7 Chingleput ...	5.2	6.0	Specifications for replacing the gas units with electrically driven sets were prepared by the Mechanical Expert and answering tenders were referred to the General Superintendent, P.W.D. Workshops.
8 Cocanada ...	7.0	7.0	There is nothing of importance to report in connection with the working of the station. The rate of energy still continues to be the same although it was pointed out that a reduction in the rate was advisable.

*Comparative Statement of Pumping Particulars for the year
1937-38—cont.*

Index number and stations.	1937.	1938.	Remarks.
	Cost of fuel and oil per million foot gallons.	Cost of fuel and oil per million foot gallons.	
(1)	(2)	(3)	(4)
	ANNAS.	ANNAS.	
15 Erode ...	6.4	4.5	During the course of the year the steam plant was removed and new electrical sets were installed. It is too early yet for the Municipality to give definite figures as to the advantages gained by electrification but the result of various tests shows that a saving is likely.
16 Gudiyattam.	4.6	4.32	The plant continued to operate satisfactorily throughout the year. The maintenance costs are normal.
17 Guntur ...	4.5	3.84	The plant was brought into commission during the previous year. It continued to operate throughout the year under reference with satisfactory results.
18 Gudur ...	6.3	...	The Board have furnished no information as regards the working of this plant but from the inspection of the units the cost of maintenance seems to be normal.
19 Karaikudi ...	6.77	6.8	Several inspections were made and the council were advised on maintenance and operation. When compared with the cost of working an oil plant for the same duty, the expenditure incurred in operating the plant does not compare favourably. A reduction in the cost of energy is advised.
20 Kumbakonam Borehole No. 1.	18.3	13.58	The type of plant and conditions which obtain at this station do not lend to economical operation. Alterations to the prime mover can only be made at a cost equivalent to the purchase of a new plant. The replacement of the existing plant by a more economical and modern type more in keeping with the conditions which prevail seems to be the remedy.
21 Kumbakonam Borehole No. 2.	10.9	9.0	As in the case of borehole No. 1 the conditions which prevail make economical operation difficult. Added to this is the high rate for energy.
22 Kurnool Electrical units.	11.7	10.9	No action is taken to revise the exorbitant cost of energy. The comparative cost for operating this electrical plant is far from satisfactory. During the course of the year a second electrical units was installed for which taking over tests are to be conducted.

*Comparative Statement of Pumping Particulars for the year
1937-38—cont.*

Index number and stations.	1937.	1938.	Remarks.
	Cost of fuel and oil per million foot gallons.	Cost of fuel and oil per million foot gallons.	
(1)	(2)	(3)	(4)
	ANNAS.	ANNAS.	
23 Kurnool Gas unit.	...	6.82	Although this is a very much more economical unit than the electrical unit at the same place it is very sparingly used and merely serves as a standby.
24 Madura water works Kochadai.	3.2	3.5	The pumping plant is to be replaced by electrical sets. The work of constructing a new pumphouse and erection of the new sets is taken over by the P.W.D.
25 Madura water works, Araya- palayam.	11.1	13.0	In the comprehensive scheme detailed for Madura, the replacement of the steam sets is proposed with other improvements.
26 Madura Drainage works, Santhapet.	3.6	4.0	The plant continues to operate satisfactorily. It is observed that during the course of the year quantity of sewage appreciably increased, necessitating three pumps being brought into service at peak hours.
27 Sub-drainage.	...	...	Tenders have been called for replacing the present pumping plant with electrical ones.
28 Stations ...	...	...	
29 Nos. II to ...	...	...	
30 VI ...	...	...	
31 ...	...	...	
32 Masulipatam.	...	...	The steam plant was removed and the new electrical plant was brought into operation towards the end of the year. The taking over tests show the plant to be an economical one and the rate of energy at 8 pies per unit is entirely satisfactory.
33 Negapatam...	4.1	4.8	This is one of the most economical stations in the Presidency.
34 Nellore ...	6.1	6.6	The operating costs are considered high and a reduction in the cost of energy is already recommended.
35 Palacole ...	4.2	5.92	The operating costs include fuel and oil consumption used in connection with the raw water pump. The cost of pumping is estimated at 3.6 as. in connection with the clear water pumps which is considered highly satisfactory. During the year, a second Crossley Engine was installed and a countershaft drive incorporated so that any one pump can be driven by either of the two engines.
36 Proddatur ...	32.2	...	The figures furnished by the Municipality do not appear correct. The plant as was mentioned in the previous year requires to be replaced or satisfactory arrangements made to obtain fuel at a lower cost.

*Comparative Statement of Pumping Particulars for the year
1937-38—cont.*

Index number and station.	1937.	1938.	Remarks.
	Cost of fuel and oil per million foot gallons.	Cost of fuel and oil per million foot gallons.	
(1)	(2)	(3)	(4)
	ANNAS.	ANNAS.	
37 Rajahmundry.	6.5	5.2	A situation arose during the year where the discharge quantity from the raw water dwindled to a considerable extent from the required output. On examination by the Mechanical Expert it was discovered that a spare set of impellers was ordered by the Municipality which differed from the design of the impeller supplied with the pump. The matter was taken up with the manufacturers. Rapid wear of the impellers and other pump parts is attributable to the quality of water and arrangements to obtain impellers suitable for the existing conditions are being made.
38 Rameswaram.	7.0	6.24	The plant continued to work satisfactorily throughout the year. Necessary advice was rendered as regards maintenance and operation of the plant and it is gratifying to note the resulting saving.
39 Saidapet ...	8.2	7.62	An inspection of the plant was made at the time it was handed over to the Municipality by the P.W.D. The cost of operation is high.
40 Tadpatri ...	4.7	5	There is no difference in the working of the plant. A slight rise in the working cost was experienced due to a rise in the cost of fuels and lubricating oils.
41 Trichinopoly.	4.2	...	No particulars are furnished by the Municipality as regards the cost of operating the plant and it is regrettable that no statements of their monthly expenditure were received in spite of frequent reminders.
42 Tanjore ...	10.13	8.0	Overhaul of the units has resulted in a marked saving but there is still room for improvement. The proposal to electrify the station is on hand.
43 Tiruvannamalai.	3.6	3.0	The plant has operated at a higher efficiency. Adjustments and attention to advice rendered have resulted in good savings.
44 Tuticorin ...	2.2	2.56	Proposals to augment pumping capacity to deal with the increased demands to the town are being looked into.
45 Vellore drainage.	6.0	8.0	The pumps are unsuitable for sewage purposes and the need for providing pumps more suitable for this work or to electrify the station is receiving attention.

*Comparative Statement of Pumping Particulars for the year
1937-38—cont.*

Index number and stations.	1937.	1938.	Remarks.
	Cost of fuel and oil per million foot gallons. (2)	Cost of fuel and oil per million foot gallons. (3)	
(1)	ANNAS.	ANNAS.	(4)
46 Vellore water- works, Palar.	1.8	2.08	The cost for working the plant is slightly higher than the previous years. The main cause is due to the price in charcoal having risen. The quantity of fuel used for W.H.P. compares favourably with those of previous years.
47 Vizagapatam Madasar- lova water works.	4.6	4.32	The station continued to work satisfactorily throughout the year. The Municipality are eager to electrify the station as is done in the case of Waltair; but a careful consideration of other factors is necessary before any proposal of this nature can mature.
48 Waltair water- works.	...	...	One of the old oil engines was removed at the end of the year and an electrical plant installed in its place. The new plant consists of a five stage multistage pump manufactured by Amag Hilpert directly coupled to a 22 H.P. B.H.P. slip ring motor erected by Messrs. Siemens (India) who were contractors for the work under the direct supervision of the Mechanical Expert. The running of the tests of the plant were satisfactory.
49 Virud- nagar water- works.	...	6	The works were recently completed and brought into commission; the pumping plant was purchased through the I.S.D. and consists of two centrifugal pumps designed for pumping 345 gallons of water per minute to a total head of 177 feet coupled to electrical motors. Taking over tests were conducted and the plant found to satisfy the guarantees. Since the Municipality pay no contributions towards inspection of the plant no further visits to this place were made.
50 Vizia- nagram.	3.	5.0	The Municipality are eager to electrify the station and with this end in view obtained quotations for electrical equipment to replace the steam units, but as there were other considerations to be taken into account it was considered advisable to continue with the present steam sets which are operating as economically as can be expected.

General Remarks.—During the year the following works were completed and handed over to the municipalities concerned:—

Tiruppur water-works.—Tested by the General Superintendent of Public Works Workshops consequent on the Mechanical Expert being absent on leave.

Rajahmundry Sewage pumping station.—Tested by the General Superintendent of Public Works Workshops consequent on the Mechanical Expert being absent on leave.

The undernoted works were completed and taken over by the municipality—

(1) *Dindigul New Pandyan Well Scheme.*—Electrical set installed and tested.

(2) *Masulipatam water-works.*—The steam plant was removed and new electrical sets were installed and tested.

The conversion of the Waltair water-works for an electrical drive was taken up towards the close of the year. One of the old oil engine units was removed and a new electrical set installed in its place.

The additional plant for the Kurnool water-works was erected but due to the delay experienced in obtaining necessary piping materials the set could not be tested.

The comprehensive scheme relating to the conversion of the pumping plant and other improvements for the supply of water to the town of Madura is taken over by the municipality.



Government of Madras

EDUCATION AND PUBLIC HEALTH DEPARTMENT

(Public Health)

G.O. No. 2916, 16th August 1939

Public Health Administration—1938—Report—Reviewed.

READ—the following papers :—

I

Letter from Lieut.-Col. C. M. GANAPATHY, M.C., I.M.S., Director of Public Health, Madras, to the Secretary to Government, Education and Public Health Department, dated 30th June 1939, R. No. 20990-4 V.S.

I have the honour to forward herewith six copies of my Administration Report for 1938 including administration on vaccination for 1938-39.

II

Letter from Sri A. V. RAMAN, M. INST. M. & C.E., F.R. SAN. I., Superintending Engineer (Public Health), to the Secretary to Government, Education and Public Health Department, [through the Chief Engineer, Public Works Department (General, Buildings and Roads)], dated 11th July 1939, No. 652-C.

I submit herewith the Annual Report of this branch for the year 1938.

III

Letter from H. R. DOGRA, Esq., B.SC., Chief Engineer, Public Works Department (General, Buildings and Roads), to the Secretary to Government, Education and Public Health Department, dated 25th July 1939, No. 3000-Ad./39-5.

I forward herewith the Administration Report for 1938 received from the Superintending Engineer, Public Health Branch, with my remarks showing the further stages of the several water-supply and drainage schemes in progress, executed by or under the supervision of the Public Works Department.

ENCLOSURE.

CHIEF ENGINEER'S REMARKS.

Water-supply Scheme.

1. *Batlagundu Water-supply Scheme.*—The sanctioned scheme was for a 10-gallon supply. But during execution the yield from the well was found to be insufficient for a 10 gallon supply and hence the scheme is being revised by the Superintending Engineer, Public Health, providing for a supply of 5 gallons.
2. *Bodinayakkanur Water-supply.*—Survey of land required for the pipe line, head works and reservoir site has since been completed and acquisition of lands by private negotiation by the municipality is proceeding. Orders regarding redesign of pipe line have since been issued. Detailed survey for locating the alignment of pipe line is practically completed. The decision as to the exact site of offtake and its design, which were under consideration, has been arrived at and communicated to the Superintending Engineer.
3. *Calicut Water-supply.*—Borings were put down and exact sites for the infiltration wells were selected. Four concrete curbs have been cast. The steining of one infiltration well has been completely cast and the other three have been cast for a height of 10 feet. All the wells have been sunk as far as they have been cast. Indents for pipes and specials have been placed with the Indian Stores Department.
4. *Cuddapah Water-supply.*—A revised estimate for the scheme is now pending with Government.
5. *Chodavaram Water-supply.*—A fresh estimate for Rs. 70,000 was under the consideration of Government—Vide Government Memorandum No. 52721-1-E2 P.H., dated 7th December 1938.
6. *Karur Water-supply Scheme.*—Infiltration wells, syphon connexion, between infiltration well and suction well, construction of suction well, pumping main, R.C. elevated reservoir and compound wall around head works were completed. Formation of road to head works, construction of pump house, supply of motor sets and supply and delivery of cast iron pipes for distribution system were in progress.
7. *Manapparai Water-supply.*—In addition to the items of work mentioned by the Superintending Engineer, Public Health in the remark column of his statement against this scheme, the following items of works namely, latrine, culverts on approach road, supply of motor pump with accessories and improvement to the combined infiltration and suction well have since been completed and laying of pumping main, laying and jointing of distribution pipes and R.C. reservoir are in progress. A supplemental estimate amounting to Rs. 6,270 for extension has been approved by Government. A consolidate revised estimate for the scheme is awaited from the district board.
8. *Mettupalayam Water-supply.*—Estimate for Rs. 1,87,220 was technically sanctioned by the Chief Engineer on 7th December 1938. Indents for pipes and specials required for the pumping main and service reservoir have been placed with the Indian Stores Department. The agreement for construction of watchman's quarters and latrine was accepted by the Superintending Engineer.

9. *Perur Water-supply.*—Work has not been started so far as permission to tap the municipal water main at Perur has not yet been granted by the Coimbatore Municipality.

10. *Mathiapalayam Water-supply.*—Orders have since been issued in G.O. No. 1193, P.H., dated 28th March 1939, permitting the execution of the scheme by the district board under the supervision of the Superintending Engineer, Coimbatore Circle.

11. *Peddapuram Water-supply.*—The work has not yet been started as the land required for the work has yet to be acquired. After joint inspection of the locality by the Chief Engineer and the Collector, an agreement was arrived at with the present owner of the site who objected to the acquisition for handing it over under certain conditions. The owner since wanted certain modifications to be made in the draft agreement to be executed by him which were not accepted by the Collector who has referred the matter to the Board of Revenue for orders to proceed with the acquisition.

12. *Pollachi Water-supply.*—Excavation for the infiltration gallery and collecting well was almost completed. Excavation in hard rock for 12-inch syphon pipe connexions was in good progress. B and C class pipes were received from the contracting firm Mysore Iron and Steel Works, Bhadravati. Proposals for acquiring land required for the work were in progress.

13. *Sembiam Water-supply.*—Quarters for the Electrician and watchmen, etc., were completed except for plastering, flooring, etc. The infiltration gallery was completed to a length of 275 feet and the suction well was sunk down to 2'00.

R.C. reservoir.—Levelling course of concrete laid for all columns.

14. *Salem (Mettur) Water-supply.*—Excavation for foundations for the intake tower at Mettur and for the coagulating tanks and the major portions relating to the filter house and the erection of the latest type of rapid gravity filtration and sterilization plant of the Patterson type at Nangavalli were completed. Construction of quarters for the Water-works Superintendent, filter operator and watchman were in progress. Trench excavation for the pumping main was almost completed. Pipes for the main were supplied by Messrs. Mysore Iron and Steel Works, Bhadravati. Tenders for the gravitation main are under the consideration of Government. A revised estimate for the scheme amounting to Rs. 33 lakhs has since been approved by Government.

15. *Srirangam Water-supply.*—Supply and delivery of electrical pumping sets have also been completed and the erection of the pumping sets has been in progress. The supply of cast iron pipes and specials has also been completed by the Mysore Iron and Steel Works. Government have ordered the cessation of the work pending their sanction to the revised estimate for the scheme.

16. *Tiruppur Water-supply.*—The scheme was declared open by the Hon'ble the Minister for Public Health on 26th February 1939 and handed over to the municipality. The infiltration gallery was decided to be deepened to hard rock level to increase the supply and this work was in progress. A revised estimate for the scheme is now under the consideration of Government.

17. *Valparai Water-supply scheme.*—The remarks against item 10 above Mathiapalayam Water-supply scheme apply to this item also.

18. *Coonoor Water-supply—Improvements—Construction of a dam at Ralliah.*—Rock bed for foundation was completed for a length of about 250 feet. Further rock blasting in foundation was in good pace. The

work on watchman's quarters was in progress. A revised estimate for the scheme is awaited from the municipality.

19. *Cocanada Water-supply—Improvements—Part II—(1) Construction of R.C. reservoir.*—A contractor has been selected for the construction of the R.C.C. gauge board for the reservoir. A few short pipes have also to be fixed. The reservoir work is complete in all other respects.

(2) *Mechanical filtration plant.*—The working drawings for an independent and new coagulation basin are still awaited from the contractors Messrs. Jewel Filter & Co. Only on receipt of the drawings and approval of the competent authority therefor the agreement with the firm can be concluded by the municipality. The Superintending Engineer has been instructed to see that the drawings are submitted by the firm and got approved by competent authority without further delay.

Drainage Schemes.

1. *Bezwada drainage.*—The following works are completed: All open drains in blocks 1 and 2, Hill drains 1, 2 and 3, laying of R.C. covering slabs over Hill drains 2 and 3, storm water separators at junctions of Brahman street and Sivalayam street, open drains in block No. 3 including storm water separators, Islampet drain, pumping station, engines and pumps, pumping main, weir recorder room up to basement level and Hill drain No. 4.

Items of works in progress.—Additional side grating required for Hill drains 2 and 3 are being manufactured in Public Works Workshops. Work on combined drain and overflow in the last 100 feet of block No. 3 and excavation for the 24-inch drains are in good progress. Sewage farm, septic tank, V notch chamber, etc., are in progress. The other items of work are yet to be taken up for execution.

2. *Brucepet drainage.*—The work was in full swing and is expected to be completed in January 1940.

3. *Srirangam drainage.*—Four open drains and a portion of open drain No. 11 were completed. Cast iron pipes were laid for 247 feet and 5 man holes were practically completed. A revised estimate for the scheme is now pending with Government.

Order—No. 2916, P.H., dated 16th August 1939.

Recorded.

2. The total mortality rate in the year under review was 23.5 as compared with 24.0 in 1937. The urban and the rural mortality rates showed a decrease from the last year's figures, the former from 27.21 to 26.71 and the latter from 23.46 to 22.36. The percentage of infantile deaths to total deaths was 27.5 in the year as against 27 in the previous year.

3. There was a remarkable fall in the mortality from cholera during the year, the figure for 1938 being 10,252 as against 23,307 in the preceding year. Forecasts of the probable trends in the prevalence of cholera were periodically published by Government during the year. These forecasts have been of great value to the authorities and local bodies in their attempts to combat the disease.

4. The number of deaths from plague during the year was 1,155 as against 1,127 in the preceding year. It is observed that the Salem and Madura districts were responsible for 85 per cent of the total plague mortality.

The results of the scheme of experimental cyanogas fumigation sanctioned by Government in seven districts and six municipalities were reported to be very satisfactory.

A scheme has first been sanctioned for starting a temporary hospital in the Cumbum valley for six months in the year for experimenting with the use of the anti-plague serum of the Haffkine Institute, Bombay, in the treatment of plague cases.

Diseases have a tendency to become endemic in places which are notoriously insanitary, and plague is no exception to this. It should therefore be urged on all local authorities that vigorous and unceasing sanitary measures in their areas constitute the first and the most important step in the fight against any disease.

5. The mortality from smallpox showed a further decrease, the figure, for the year being 2,273 as against 2,446 in the preceding year. This is reported to be the lowest figure recorded in respect of this disease for the last seventy-one years. Government note with regret that the Madras City alone accounted for 76 per cent of the total deaths from smallpox.

6. "Fevers" continue to be responsible for 27 per cent of the total mortality in the Province. An attempt has been made to collect figures of the detailed causes of deaths under the general head "other causes of deaths" which now account for 52 per cent of the total mortality in the Province.

7. During the year schemes of anti-malarial operations were inaugurated at Pattukkottai (Tanjore district) where the incidence of malaria had been on the increase since the completion of the Cauvery-Mettur Project, at Wynaad (Malabar district) and at Ennore (Chingleput district). The schemes are partly financed by the Provincial Government and partly by the Indian Research Fund Association.

The anti-malarial measures at Krishnadevipeta (Vizagapatam Agency) were continued with good results. The question of controlling malaria in the Shevaroy and Uttangarai (Salem district) was under consideration.

The Health Unit at Poonamalle continued its useful activities during the year.

The department maintained the progress achieved in the matter of health propaganda, rural sanitation, vaccination and maternity and child welfare work.

8. The water-supply scheme for the Virudunagar Municipality came into operation during the year thus bringing the total number of municipalities with protected water-supply from 42 to 43.

Twenty-two water-supply schemes and nine drainage schemes were under execution during the year.

9. A comprehensive programme of rural water-supply for the province, which is to be completed in ten years is under execution.

10. The new Public Health Act, which was passed by the Legislature a few months ago, is a very important measure containing many useful

provisions calculated to advance the public health of the province. It is hoped that that amount of co-operation which is necessary for the successful working of the Act by the Department will be forthcoming from the local authorities and the public.

(By order of His Excellency the Governor)

G. H. COOKE,
Secretary to Government.

To the Surgeon-General.
 „ the Director of Public Health.
 „ the Chief Engineer (General, Buildings and Roads).
 „ the Superintending Engineer (Public Health).
 „ the Inspector-General of Prisons.
 „ the Inspector-General of Police.
 „ the Director of Public Instruction.
 „ the Director of Veterinary Services.
 „ the Examiner of Local Fund Accounts.
 „ the Inspector of Municipal Councils and Local Boards.
 „ the Mayor, Corporation of Madras.
 „ all Collectors.
 „ all Presidents of District Boards.
 „ all Executive Authorities (through the Chairmen of Municipal Councils concerned).
 „ the Director, King Institute, Guindy.
 „ the Director, Pasteur Institute, Coonoor.
 „ the Secretary, Local Self-Government Department, Bihar Government (with C.L.).
 „ the Director, All-India Institute of Hygiene and Public Health, Calcutta (with C.L.).
 „ the Public Health Commissioner with the Government of India (with C.L.).
 „ the Government of India, Department of Education, Health and Lands (with C.L.).
 „ the Joint Secretary, Countess of Dufferin's Fund Central Committee, Simla.
 „ the Director, Maternity and Child Welfare Bureau, Indian Red Cross Society, New Delhi.
 „ the Director, Eastern Bureau Health Organization, League of Nations, Singapore (with C.L.).
 „ the Officer in charge of the Board of Administration.
 „ the Public Works Department.
 „ the Revenue Department.
 „ the Local Administration Department.
 „ the Secretary, Madras Legislatures.
 „ the Librarian, Secretariat Library.
 „ the Consul-General for Siam at Calcutta.