

Report of the Health Officer, Corporation of Madras Health Department.

Contributors

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Annual Report

of the

Health Department
Corporation of Madras

For the Year 1933



MADRAS:
PRINTED BY THOMPSON AND CO., LTD.

1934.



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INTRODUCTION.

COMMISSIONER,

Sir,

I submit herewith the annual report relating to the health of the City of Madras during the year 1933.

I desire to acknowledge figures and information for inclusion in the report from the Lady Superintendent, Child Welfare Scheme, Public Analyst to the Corporation of Madras, Water Analyst, School Medical Inspectors, Veterinary Officer and Medical Officers in charge of Malaria and Infectious Diseases Hospitals. I am grateful to the Heads of several voluntary hospitals and dispensaries and other charitable institutions who have sent information for inclusion in the report.

A perusal of the information scattered throughout the following pages embodying the activities of the several branches of the Public Health Administration in the City affords a good indication of the development and co-operation that exists amongst them.

A review of the health of Madras during any particular period should contain a discussion of the population, birth-rate and death-rate as they form a true index of the extent of public health and other activities.

Population.—The estimated mid-year population for 1933 was 6,78,500 as compared with 6,64,900 for 1932 giving an increase of 13,600. The several rates of vital statistics have been prepared for the purpose of comparison on the basis of the estimated population.

Births.—The total number of births, 28,533 shows an excess of 537 as compared with the births in 1932. The birth-rate was 42.1, the same as that of the previous year. The Mussalman community records the highest birth-rate.

Deaths.—The total number of deaths 24,500 shows an increase of 2,210 as compared with the deaths in 1932. Death rate for the year was 36.1 as compared with 33.5 in 1932 giving an increase of 2.6 per mille as against an increase of 1.7 per mille for the Presidency. In spite of the increase in the number of deaths during the year under report over that of the previous year, a "natural increase" of 4,033 *i. e.*, excess of births over deaths, is recorded.

Divisional deaths.—Highest mortality (48.2) was recorded in Mirsahibpet division while the lowest was recorded in Esplanade Division. 12 areas viz., Tondiarpet, Washermanpet, Korukupet, Harbour, Ammenkoil, Seven Wells, Peddunaikenpet, Choolai, Chintadripet, Tiruvateeswaranpet, Amir Mahal and Mirsahibpet returned rates above the annual death-rate for the whole city. These divisions are inhabited by poorer labouring classes without satisfactory housing accommodation. A very large percentage of houses are of the back to back pattern without free ventilation. The worst forms of over-crowding can be seen in as many as 40 per cent of the houses in these areas. A substantial reduction in mortality cannot be expected without relieving congestion.

Infantile Mortality.—7,540 infants died under one year of age giving an infantile mortality rate of 264.3 as against 236.5 in 1932. Infantile mortality is always high in a community with a very high birth-rate. The problem is complicated by two factors in Madras viz., the utter poverty and the consequent low standard of living of a very large section of the population and the extremely unsatisfactory housing conditions of the poor classes. No where is the evil effect of an insanitary dwelling more keenly felt than in the case of a newly born baby. A reference had been made in my last report about the high infantile mortality in Madras in spite of the good work done by the Corporation Child Welfare Scheme. A large proportion of the infants die of respiratory and intestinal disorders. It is probable that the high infantile mortality is partly due to bad feeding. There is therefore a great need to improve the milk supply in the city. The Scheme drawn up two years ago to open a Corporation dairy farm could not be brought into a reality owing to financial stringency. The fundamental point to grasp is that far more children are born in the city year after year than can be warranted by the economic condition of the majority of parents. The result is an appalling wastage

of infant life which accounts for more than a quarter of the total number of deaths in the city. I should like to commend this aspect of the prevention of infant wastage to the various social and allied services. It is doubtful in the present state of things whether the masses are in a position to understand and practise some of the methods advocated for contraception.

Infectious diseases.—The year under report saw one of the worst epidemics of small-pox, Madras has witnessed since 1922 accounting for 0.9 per mille of the increase in the death rate. The disease was prevailing in an epidemic form in almost all the large cities of India and in several parts of the Presidency. 90 per cent of the total cases were segregated at the Isolation Hospitals and a vigorous vaccination campaign was conducted. 1,99,452 vaccinations were done of which 30,850 were primary vaccinations. This is the highest figure on record in the city. The fact that a very large percentage of the cases occurred amongst persons above 7 years of age shows that small-pox has become more a disease of the adults. The immunity conferred by vaccination in infancy appears to wear off within a period of 5 to 7 years. Unless the community as a whole takes to regular re-vaccinations once in 7 years, the incidence of the disease cannot be controlled. A change in the vaccination bylaws making re-vaccination compulsory, once in seven years, and reducing the minimum age for primary vaccination, has been proposed. The operation of the revised bylaws, when they come into force, is bound to reduce the incidence of small-pox. Mortality from Malaria and Typhoid shows a further decline as compared with that of last year. While the incidence of small-pox was declining during the last quarter there was a sudden outbreak of cholera in Peddunaikenpet and the neighbouring parts a few days before the date fixed for the visit of His Excellency the Viceroy to the City giving considerable anxiety to every one concerned. Effective measures were promptly taken to put down the epidemic with the least possible delay. House to house inoculation in infected areas was speedily arranged and all cases were sent to the Isolation Hospitals for segregation and treatment. A ruthless campaign against street vendors of articles of food was conducted and immense quantity of noxious food was destroyed every day. It is very gratifying to note that what threatened to be a very serious outbreak of cholera was nipped in the bud before His Excellency's visit.

School Medical Service.—The work of this section shows increased activity. 2,531 under-nourished children improved after treatment. 1012 cases of chronic stomatitis were treated successfully. 133 pupils underwent operation for the removal of enlarged tonsils while in 2,004 pupils relief was obtained by medical treatment. A scientific survey of all school children for the detection of leprosy in its early stages was organised and conducted with the co-operation of the Skin Department, Government General Hospital. 324 children were declared positive for Hansen infection. 274 children underwent treatment of which 54 showed slight improvement. These figures show that leprosy has become a very serious problem in the Corporation Schools and the present methods of control are not giving very encouraging results. The poverty of the parents is such that they cannot afford the expense of taking their children to the clinics regularly. In many cases they could not spare the time. It will be an excellent arrangement if two schools are opened exclusively for these unfortunate children, one in the Northern and the other in the Southern portion of the City with free boarding and lodging and with facilities for recreation and exercise. The patients will then be under thorough control, their nutrition can be maintained at a very high level and the treatment can be effected without hindrance or delay. The scheme may be expensive but its urgency cannot be questioned.

Food Inspection.—A Food Analysis Laboratory was established towards the end of May in Kilpauk. The work noted in the report of the Public Analyst relates to a period of 8 months only. The rules relating to labels came into force during the year under report. It should be noticed that in spite of the operation of the Food Adulteration Act for over 3 years, the sale of adulterated ghee still continues in the City without abatement. Further, many vendors now put absurdly low percentage of ghee on the labels to escape prosecution and explain to the customers that the label is there only to protect them, and the articles are in reality superior. The statement may be true to some extent. Nevertheless the object of the Food Adulteration Act is frustrated. The Act should be amend-

ed introducing a provision to check this sort of fraud by preventing the sale of adulterated ghee containing less than a prescribed minimum of ghee.

Sanitary Improvements.—The scheme of compulsory introduction of water carriage system for the removal of night soil from dwelling houses continued to be in force during the year. 1976 flush-out latrines were installed. 3576 dwelling houses were rendered fit for human habitation as a result of the action taken by the House Inspection staff. 2 new public markets were opened during the year under report, one at Esplanade for the sale of fruits and the other at Mambalam. 71 additional stalls were put up at the Moore Market. All the private markets in the City received the vigilant attention of the staff. The scheme for the reclamation of lowlands continued and 5 ponds, 4 pits and 22 low-lying areas were filled up. The water supplied was free from sulphureted hydrogen for the first time during the last many years.

Despite the work done by the Corporation it has to be admitted that there is a good deal of insanitation in the City owing to the apathy and lack of co-operation on the part of the masses. Added to this, the fines imposed in Municipal cases are generally too low to have any deterrent effect. For instance, the dirty cattle yards not only disfigure the city but are a source of positive nuisance and danger to public health. The owners prefer to pay a small fine twice or three times a year instead of spending Rs. 200 or 300 required for making these places sanitary. The same is the case with the committal of street nuisance. The money spent on special constables will not yield permanent results unless the fines are made deterrent.

Conservancy.—The scheme for the introduction of more public flush-out latrines continued to be in progress. 28 new public flush-out latrines were installed and 7 latrines were converted into flush-out latrines. The work of this section continued to be satisfactory throughout the year.

Housing.—It was noted in the report of 1932 that the population of Madras had increased by 22.8 per cent during the last decennium without a corresponding increase in the number of sanitary houses. During the last two years the population has further increased as already noted. A comparison of the mortality rates shows that deaths from tuberculosis rose from 0.9 per mille in 1913 to 1.6 in 1933 while that under respiratory diseases rose from 4.2 in 1913 to 9.2 in 1933. The striking increase in the above death rates points to the fact that congestion and overcrowding have increased rapidly. Further more, Madras is rendered insanitary owing to the existence of so many slums and cherries which are usually the hot beds of infectious diseases. No doubt a large number of houses have come into existence during the last few years, but they are quite inadequate especially for the needs of the working classes. A comprehensive programme for slum clearance and eradication of overcrowding in dwelling houses is a paramount need.

In conclusion, I desire to record my appreciation of the work done by the Corporation Health Services. The amount of work noted here could never have been possible, but for the high sense of duty of the clerical and outdoor staff of the department.

Madras, }
Dated 21-8-34. }

C. S. GOVINDA PILLAI,
M. B. Ch. B., L. R. C. P. & S., D. P. H. (Edin.)

Health Officer.

Forwarded to the Council.

J. HUSSAIN,

21-8-34.

Commissioner.

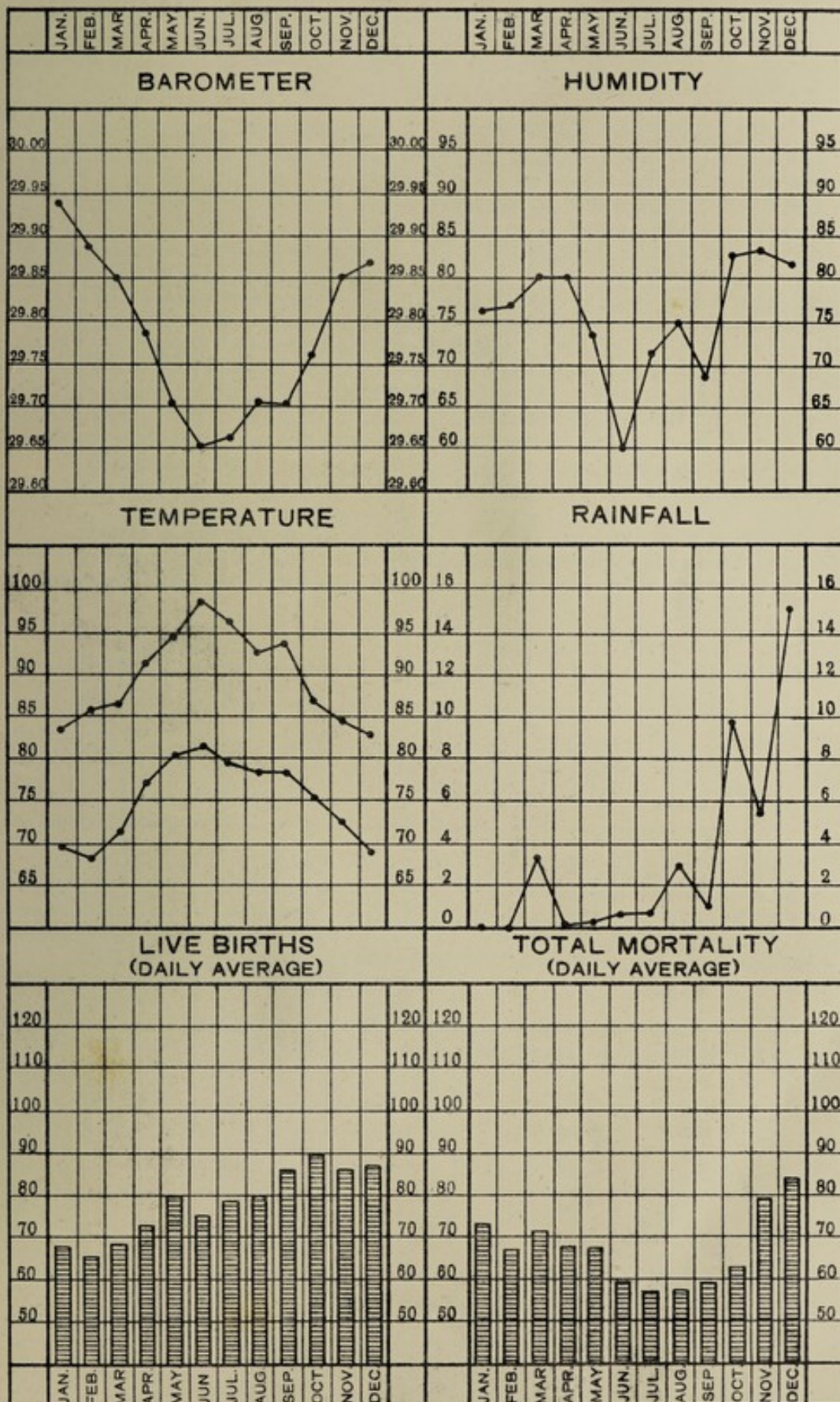
Summary of Vital Statistics for 1933.

Area	...	19,728 acres.
Estimated population (Middle of 1933)	...	6,78,500
Census Population (1931)	...	6,47,230
Average density per acre	...	34.4
Inhabited houses (Census 1931)	...	73,845
Births	... 28,533	Birth rate ... 42.1 per 1000 estimated population.
Deaths	... 24,500	Death rate ... 36.1 do.
Natural increase	... 4,033	Rate of increase ... 6.0 do.
Deaths of infants under one year of age	... 7,540	Infantile death rate... 264.3 per 1000 births.
Deaths from child birth	... 331	Maternal death rate. 11.6 do.

Deaths from Principal Diseases.

	No.	Rate per 1000 estimated Population.
Cholera	... 62	0.09
Diarrhoea and Dysentery	... 2670	3.9
Small-pox	... 837	1.2
Measles	... 44	0.06
Malaria	... 140	0.2
Enteric Fever	... 90	0.1
Phthisis	... 855	1.3
Respiratory diseases	... 5967	8.8

DIAGRAM DAILY MEAN BIRTHS DEATHS AND CLIMATIC CONDITIONS IN MADRAS IN 1933.



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Vital Statistics.

Area and Population.—The area of the City is 19,728 acres. The estimated population in the middle of 1933 was 6,78,500. The general birth and death rates in this report are based on the estimated population. The statistical statements appended to this report have been worked out as usual on the census population of 1931. The average density based on the estimated population is 34.4 per acre.

Meteorology.—The atmospheric conditions recorded during 1933 are given in the statement in the Annual Form A. There were 40.18 inches of rain during the year as against 46.59 inches in 1932. It is the lowest on record for the past 5 years. The highest rainfall was in the month of December (15.0 inches) and the lowest in April (0.03 inches). January and February had no rainfall. The last quarter recorded the highest rainfall of 30.58 inches. There was rainfall on 90 days in the year.

Births and Birth rates.—The number of births registered during the year was 28,533 which was 537 in excess of the number for 1932 and 3283 in excess of the average for the quinquennium 1928-32.

The birth rate calculated on the estimated population was 42.1 per mille, the same as for 1932. Of the births registered, 14,627 were males and 13,906 females, the proportion of males to females being 105 to 100. In 27 divisions male births were in excess of female births.

Illegitimate births.—The number of illegitimate births registered was 368 or 1.2 per cent of the total births in 1933 as compared with 432 or 1.6 per cent in 1932.

Births in different quarters of the year.—A comparative statement of births registered in each quarter of 1932, 1933, and quarterly average during the quinquennium 1928-32 is furnished below.

Year.		1st quarter.	2nd quarter.	3rd quarter.	4th quarter.
1928-32	...	5455	6178	6698	6919
1932	...	5503	7138	7624	7731
1933	...	6067	6896	7510	8060

Birth rates in Divisions.—Egmore recorded the highest birth rate of 55 per mille. The Government Hospital for Women and Children in this division accounts for this high rate. The Kothawal Bazaar division which is a business centre registered the lowest rate of 26.7 per mille. (Annual Form No. 1)

Birth rates in Communities.—The birth rates for the year for the principal communities are furnished below.

Communities.	Rate per 1000 estimated population in each community.
Europeans	7.2
Anglo-Indians	35.3
Indian Christians	35.1
Hindus	43.0
Muhammadans	43.2
<hr/>	
All Communities	42.1

The highest rate was recorded by the Muhammadan community and the lowest by the Europeans.

Still Births.—The number of still births during the year was 1380 as against 1326 in 1932. It represented 48.4 per 1000 live births as compared with 47.3 in 1932.

Deaths and Death rates.—24,500 deaths occurred during the year as against 22,290 in 1932 and 23,483 the average number for the quinquennium 1928–32. Of these, 23,057 deaths were among the residents of the City and 1443 among non-residents.

Calculated on the estimated population, the annual death rate was 36.1 per mille as compared with 33.5 per mille in 1932. Excluding the cases of non-residents referred to above, the death rate for the year was 34.0 per mille.

In spite of the increase in the number of deaths during the year under report over that of the previous year, an excess of 4033 births over deaths i.e. natural increase was recorded. The rate of natural increase was 6.0 per mille of estimated population against 8.6 in 1932.

24 municipal divisions recorded natural increase during the year. The rate was the largest for Egmore division (21.6 per mille), and the lowest for Peddunaickenpet division (2.7 per mille). The birth and death rates for one division viz., Seven Wells were equal.

Of the total deaths registered, 12,713 were among males and 11,787 among females, the ratio being 108 to 100. The increase in male deaths over female deaths occurred in 23 divisions.

Deaths in different quarters of the year.—The following statement furnishes the number of deaths registered in the different quarters of 1932, 1933 and the average during the quinquennium 1928–32.

Year.		1st quarter.	2nd quarter.	3rd quarter.	4th quarter.
1928–32	...	5978	5473	5625	6408
1932	...	5574	5145	5047	6524
1933	...	6387	5868	5313	6932

Death rates in divisions.—Annual Form II gives in detail the death rates in all the municipal divisions. Mirsaibpet claimed the highest rate of 48.2 per mille. The lowest rate was returned by the Esplanade division (20.0 per mille). Twelve divisions, viz., Tondiarpet, Washermanpet, Korukkupet, Harbour, Ammenkoil, Seven Wells, Peddunaickenpet, Choolai, Chintadripet, Tiruvatteeswaranpet, Amir Mahal, and Mirsaibpet returned rates above the annual death rate for the whole city. These divisions contain a large proportion of poorer classes among whom the death rate is generally high.

Death rates in communities.—The death rates among the different communities during the year are furnished below.

Communities.	Rate per 1000 estimated population in each community.	
Europeans	...	10.7
Anglo-Indians	...	20.8
Indian Christians	...	25.5
Hindus	...	36.9
Muhammadans	...	41.5
Others	...	0.3
All communities	...	36.1

Mortality by age.—The following table shows the number of deaths and percentage to the total deaths in each age group in different quarters of the year:

Age Periods.	Quarter ending				Year 1933.	Percentage to total deaths.
	March.	June.	September.	December.		
Under 1 Year.	1903	1707	1672	2258	7540	30.8
1 to 5 Years.	1106	1033	861	1154	4154	17.0
5 to 10 "	308	229	177	214	928	3.8
10 to 15 "	120	104	103	102	429	1.8
15 to 20 "	205	201	167	175	748	3.1
20 to 30 "	534	532	422	487	1975	8.2
30 to 40 "	461	481	387	504	1833	7.5
40 to 50 "	378	383	351	440	1552	6.3
50 to 60 "	374	383	335	460	1552	6.3
60 and above.	998	815	838	1138	3789	15.2
Total ..	6387	5868	5313	6932	24,500	100.0

It will be observed from the above table that the percentage of deaths of infants under one year of age is the highest (30.8) followed by the age groups of 1—5 (17.0) and 60 years and above (15.2).

Mortality rates by age and sex.—A comparative statement of death rates for the year in the different age periods and according to sex is furnished below.—

Age periods.	Death-rate in 1933 per 1000 estimated population in each age group.		
	Male.	Female.	Both Sexes.
Under 1 Year.	277.6*	250.3*	264.3*
1 to 5 Years.	59.8	63.4	61.7
5 to 10 "	13.4	12.0	12.7
10 to 15 "	5.8	6.5	6.1
15 to 20 "	8.6	12.1	10.3
20 to 30 "	11.7	15.1	13.4
30 to 40 "	15.6	17.6	16.5
40 to 50 "	23.5	22.1	22.9
50 to 60 "	45.2	41.4	43.5
60 and above.	166.6	198.3	180.8
All age periods ...	35.5	36.8	36.1

*Calculated on 1000 births registered during the year.

Infant mortality.—During the year under report, there were 7540 deaths among infants under one year of age. Of these, 6214 deaths occurred among infants who were born in the city, and 1326 deaths among infants born in the moffusil.

The infantile mortality rate per 1000 live births registered during the year was 264.3 as against 236.5 in 1932. Excluding 1326 deaths of infants born in the moffusil the infantile mortality rate was 217.8.

Age and cause of death.—The following statement furnishes the principal causes of infantile deaths under different age periods :—

Age Periods.	Small-pox.	Measles.	Malaria.	Other fevers.	Dysentery and Diarrhoea.	Premature Birth.	Debility.	Convulsion.	Respiratory Diseases.	Other causes.	Total.	Percentage of deaths to total deaths.
Under 7 days ...	...	...	1	24	16	1172	7	77	53	187	1537	20.4
7 days and under 1 month ...	7	...	...	49	50	570	13	81	96	165	1031	13.7
1 month and under 4 months	19	4	2	69	117	179	22	142	390	365	1309	17.4
4 months and under 7 months	42	4	...	110	249	29	9	90	711	151	1395	18.5
7 months and under 10 months	52	4	2	165	242	6	2	73	783	312	1641	21.7
10 months and under 1 year.	23	...	1	64	108	3	3	26	329	70	627	8.3
Total ...	143	12	6	481	782	1959	56	489	2362	1250	7540	100.0

3,877 deaths or 51.5 per cent of the total deaths among infants took place within the first four months of their life. Of these, 2568 deaths or 34.1 per cent occurred during the first month.

The Child Welfare work done by the Corporation of Madras is given in a separate report of the Superintendent, Child Welfare Scheme.

Infant deaths by months.—The number of infant deaths in the several months of the year is compared below with the total monthly deaths.

—	No. of deaths in												Total.
	January.	February.	March.	April.	May.	June.	July.	August.	Septem-ber.	October.	Novem-ber.	Decem-ber.	
Under 1 year ...	688	564	651	625	584	498	549	549	574	615	818	825	7540
Total of all ages.	2272	1917	2198	2039	2069	1760	1780	1775	1758	1949	2376	2607	24,500
Percentage of infant deaths to total deaths ...	30.3	29.4	29.6	30.7	28.2	28.3	30.8	30.9	32.7	31.6	34.4	31.6	30.8

Infant mortality rates in divisions.—The highest rate was recorded by the Mirsaibpet division (343.2) which also returned the highest general death rate during the year under report. The lowest rate was returned by the Kilpauk division (185.5).

Infantile mortality rates in communities.—The infantile mortality rates in different communities are given below :—

Community.	Rate per 1000 births in each community.
Europeans	... 74.1
Anglo-Indians	... 120.2
Indian Christians	... 151.0
Hindus	... 273.8
Muhammadans	... 265.9
All Communities	... 264.3

The births, infant deaths and death rates in the principal sub-castes of the Hindu Community for 1933 are furnished below :—

Caste.	Births in each caste.	Infant deaths in each caste.	Rate per 1000 births in each caste.
Brahmin ...	1726	399	224.8
Chetty ...	1655	459	224.8
Vellala or Mudaliar ...	4273	1052	246.2
Baliya or Naidu ...	1973	597	302.6
Vannia or Naicker ...	3464	1019	294.2
Adi Dravida ...	2966	855	288.3
Patnavar ...	446	169	378.9
Yadavas or Edayar ...	800	204	256.3
Visvakarma Brahmin or Kammalar ...	709	177	249.6
Others ...	5407	1481	273.9
All Hindus ...	23419	6412	273.8

Patnavar community recorded the highest infantile death rate. Of the 169 deaths which occurred in that community, 100 were in Royapuram division in which the majority of these people reside. The infantile death rate for this community in Royapuram division was 429.2 per 1000 births. 60 per cent of these infants died within the first four months of life, of whom 33 per cent died within the 1st week. Premature births and respiratory diseases accounted for 31 per cent and 27 per cent respectively of these deaths.

Principal causes of deaths.—A comparative table of the principal causes of deaths in 1932, 1933 and the average for the quinquennial period of 1928–32 is set forth below :—

Cause of death.	Deaths in		Average of years 1928–32.
	1932.	1933.	
Cholera ...	5	62	185
Dysentery and diarrhoea ...	2644	2670	3101
Plague ...	1	...	0.2
Small-pox ...	176	837	229
Measles ...	16	44	32
Malaria ...	165	140	601
Enteric fever ...	101	90	140
Other fevers ...	1646	2095	1728
General respiratory diseases ...	5509	5967	5742
Tuberculosis ...	917	1011	1239
Deaths from child-birth ...	279	331	315
All other causes ...	10831	11253	10171
Total ...	22,290	24,500	23,483

Deaths under various causes during the year show increase over the figures of 1932 except under enteric fever and malaria. Small-pox was prevalent throughout the year and there was cholera during the last quarter of the year. Compared with the averages of the quinquennium 1928–32 shown in the above table, reduction is observed under bowel diseases including cholera, enteric fever, diarrhoea and dysentery, and also under tuberculosis and malaria.

Cholera.—133 attacks and 62 deaths from cholera occurred during the year as against 9 attacks and 5 deaths in 1932. The annual death rate was 0.09 per mille of estimated population against 0.01 per mille in 1932.

The statistics of deaths from cholera for the past 10 years are given below :

Year.	Deaths.	Year.	Deaths.
1924	97	1929	16
1925	203	1930	43
1926	98	1931	153
1927	512	1932	5
1928	708	1933	62

The outbreak during the year under report was sudden and occurred during the last quarter, the previous three quarters having been entirely free from the disease. There were 5 attacks and 2 deaths in October, 45 attacks and 18 deaths in November, and 83 attacks and 42 deaths in December. Of these, three cases were imported.

19 municipal divisions were affected with cholera and the remaining 11 divisions were free. The highest number of attacks was in Peddunaikenpet division (24).

Effective preventive measures were adopted to check the prevalence of the disease. 23,730 inoculations were performed and 1,849 immediate contacts were administered with cholera bacteriophage. 1,795 wells in affected areas were chlorinated. The City water supply was under careful watch and was found to be absolutely free from infection. An elaborate campaign was conducted against articles of food exposed for sale on road sides and unauthorised places. Rotten fish brought into the City from neighbouring places were seized at the railway stations with the co-operation of the Railway Authorities and destroyed. Extra special staff for the preventive campaign and for the special cleaning of the infected areas was employed and the disease was speedily brought under control.

Of the 133 cases of cholera that occurred during the year, 130 cases were treated in the two Isolation Hospitals maintained by the Corporation. The prompt removal of these cases to the hospitals minimised the chances for the spread of infection. The hospital staff was suitably augmented to meet the emergency. The number of cholera cases treated in each hospital and the result of treatment is given in the reports of the infectious diseases hospitals.

Diarrhoea and Dysentery.—Dysentery and diarrhoea accounted for 2,670 deaths with a death rate of 3.9 per mille of the estimated population as against 4.0 per mille in 1932.

The mortality from diarrhoea and dysentery from 1924 to 1933 is shown below :—

Year.	Deaths.	Year.	Deaths.
1924	3700	1929	3127
1925	4031	1930	3056
1926	3867	1931	2746
1927	3263	1932	2644
1928	3931	1933	2670

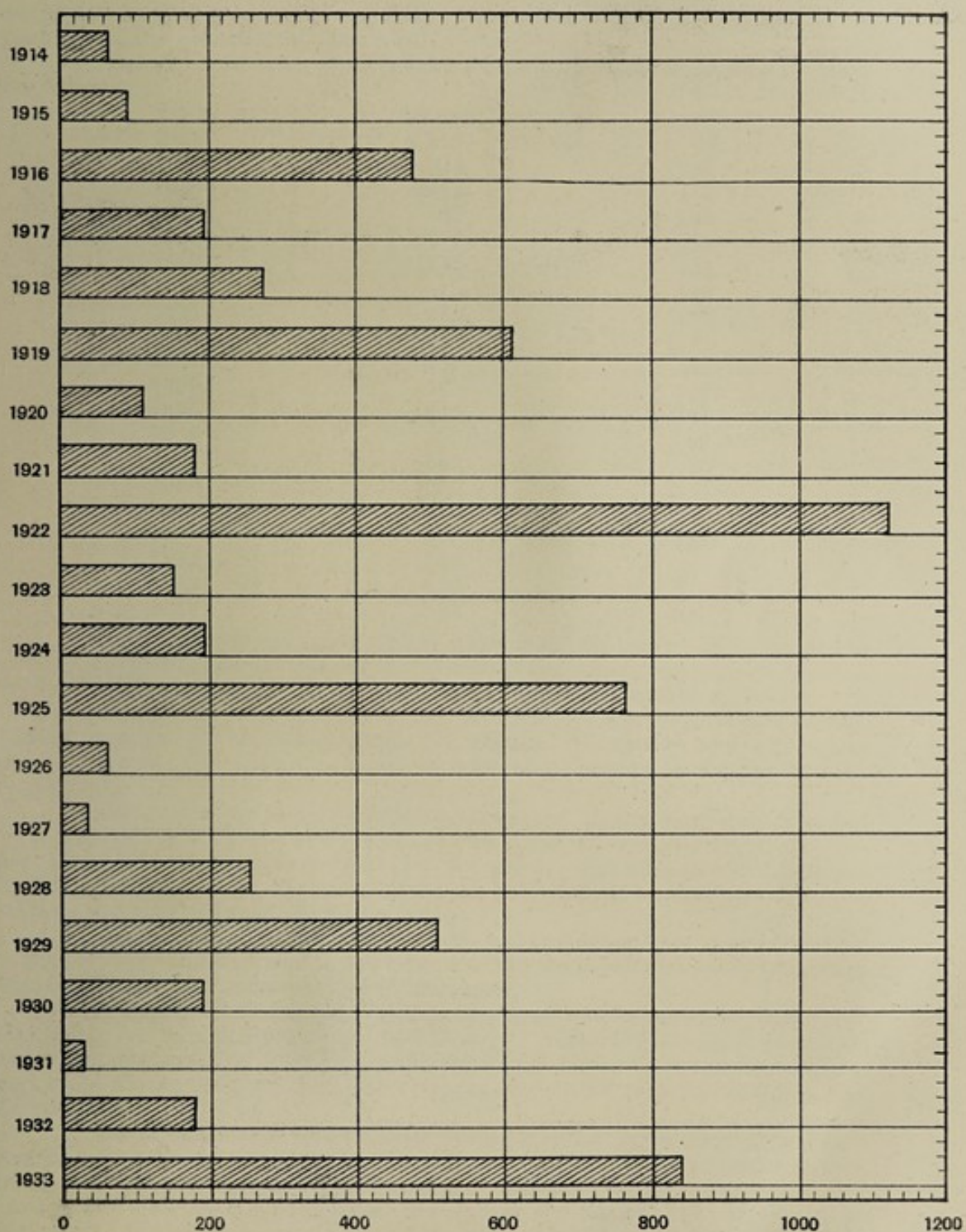
The occurrence of deaths in the different quarters of the year is as follows :—

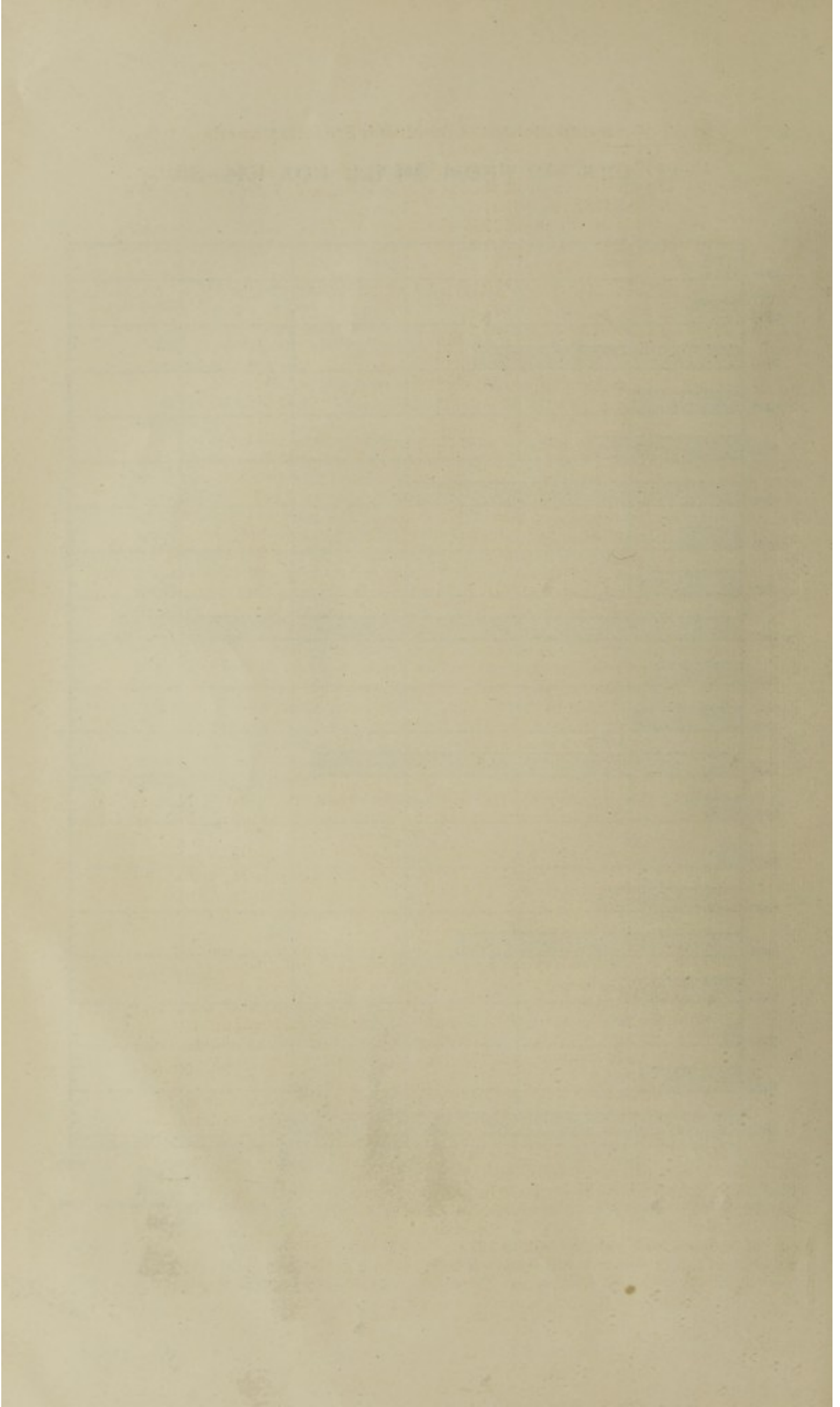
Quarters.	Deaths.
1st quarter	...
2nd quarter	...
3rd quarter	...
4th quarter	...
	2670

The Annual Form No. XIII furnishes the number of deaths and death rates in the various municipal divisions under diarrhoea and dysentery. The death rate was the highest in Mirsahibpet (7.0 per mille) and Choolai came next (6.0 per mille). The lowest rate was returned by the Sowcarpet division (1.8 per mille).

Small-pox.—The infection that was present in the last quarter of the previous year continued throughout the year under report and caused much anxiety. The disease was raging virulently in almost all parts of India and

DEATHS FROM SMALL-POX 1914-33.





particularly in the several districts of the Madras Presidency and the City had its own share.

During the year, 3,503 attacks and 837 deaths occurred, as against 842 attacks and 176 deaths in 1932, the fatality rate being 23.9 per cent and 20.9 per cent in 1933 and 1932 respectively.

The annual death rate in 1933 increased to 1.2 per mille of estimated population from 0.3 per mille in 1932, thus accounting for an increase of 0.9 per mille in the general death rate for the year.

The incidence from small pox for the past 20 years is furnished below for reference.

Year.	Attacks.	Deaths.
1914	146	66
1915	314	92
1916	1489	476
1917	582	195
1918	677	272
1919	1227	611
1920	315	109
1921	569	180
1922	2727	1121
1923	481	151
1924	665	197
1925	1807	763
1926	300	60
1927	385	32
1928	1066	251
1929	2019	506
1930	877	188
1931	109	24
1932	842	176
1933	3503	837

A reference to the above figures reveals that the year saw one of the severest epidemics of small-pox for the past 20 years, which nearly resembled the epidemic of 1922 when there were 2727 attacks and 1121 deaths.

No division was free from the infection. Mirsahibpet returned the highest number of 372 attacks and 100 deaths. Sowcarpet and Esplanade divisions recorded the lowest incidence with 35 and 34 attacks, and 6 and 7 deaths respectively.

With reference to the population, the highest death rate was recorded by the Mirsahibpet division (3.7 per mille) which was followed by Mylapore (2.9 per mille) and Katchaleswaranpet (2.6 per mille). The rates in other divisions were below 1.8 per mille, the lowest of 0.4 per mille having been returned by the Kilpauk division. (Annual Form No. VII.)

Information regarding the vaccinal condition of patients and its relation to the mortality will be found in the reports of the Medical Officers of Infectious Diseases Hospitals, Tondiarpet and Krishnampet.

Additional staff was employed for epidemic and vaccination work and effective preventive measures were carried out. A vigorous vaccination campaign was conducted and 30,851 primary vaccinations and 1,68,601 revaccinations were performed during the year, the highest figures ever recorded in the history of the Corporation.

Out of 3,503 cases that occurred during the year, 3,156 cases or 90.1 per cent of the total cases were removed to the isolation hospitals for isolation and treatment. 265 persons were prosecuted and convicted for failure to report the incidence to the Health authorities as required by section 345 of the City Municipal Act. On the whole, the co-operation from the public in the matter of notifying cases was fair. It was also gratifying that there were several voluntary admissions at both the infectious diseases hospitals.

Measles.—Measles was the cause of 44 deaths giving an annual death rate of 0.06 per mille against 0.02 in 1932.

Malaria.—140 deaths occurred from malaria during the year as against 165 in 1932 and 601, the average of the quinquennium 1928–32. The annual death rate was 0.2 per mille as against 0.3 in 1932.

The mortality from malaria from 1924 to 1933 is furnished below.

Year.	Deaths.	Year.	Deaths.
1924	971	1929	681
1925	1298	1930	283
1926	1342	1931	277
1927	1367	1932	165
1928	1599	1933	140

The highest death rate under malaria (0.8 per mile) was returned by the Washermanpet division. The lowest rate was 0.03 per mille returned by the Egmore division. (Annual Form No. X.)

Enteric fever.—Enteric fever was the cause of 90 deaths—11 deaths less than in 1932 and 50 deaths less than the average of the past 5 years. The annual death rate worked out to 0.1 per mille of estimated population, the rate for the previous year being 0.2 per mille.

Mortality from enteric fever for the past 10 years is shown below:—

Year.	Deaths.	Year.	Deaths.
1924	65	1929	130
1925	99	1930	126
1926	152	1931	166
1927	164	1932	101
1928	177	1933	90

Deaths from enteric fever were reported in all the months of the year; the largest number was in November (12) and the lowest in January and April (4). The distribution of deaths in the several quarters of the year is as follows:—

Quarters.	Deaths.
1st quarter	... 18
2nd quarter	... 21
3rd quarter	... 22
4th quarter	... 29
Total	... 90

Failure of timely notification of typhoid fever is a great handicap in the preventive work of the department.

Apart from the usual preventive measures carried out in infected houses, 523 contacts were inoculated.

Other fevers.—Under this heading are included cases of deaths other than from malaria, tuberculosis, enteric fever and respiratory diseases, with fever as the predominant symptom. 2,095 deaths from these causes occurred in 1933 as against 1,646 in 1932 and 1,728 the mean of the past 5 years. The annual death rate was 3.1 per mille of estimated population against 2.5 in 1932.

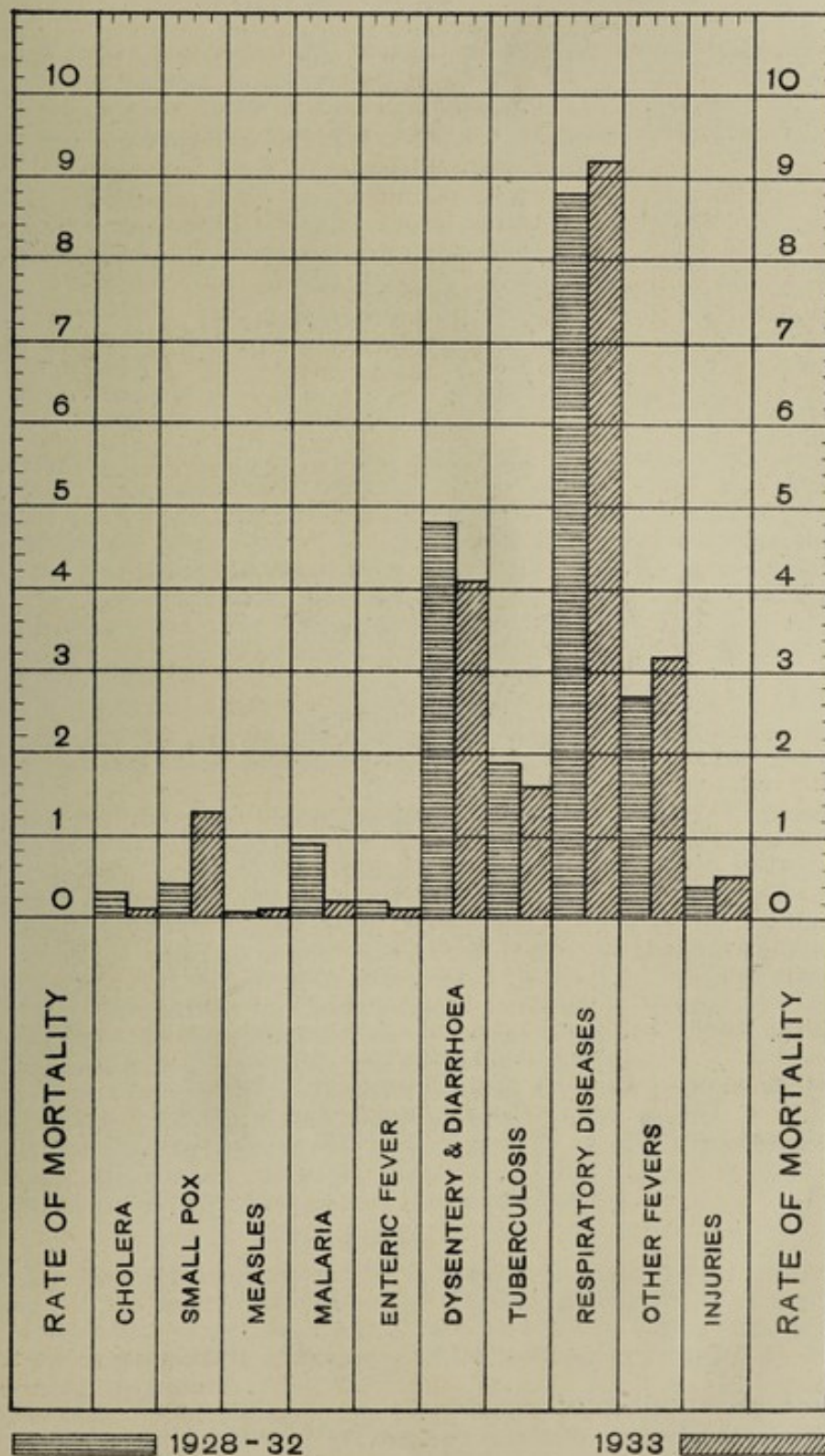
General Respiratory Diseases—5,967 deaths were registered under this group during the year as against 5,509 in 1932 and against 5,742 the average number for the period 1928–32. The annual death rate was 8.8 per mille of estimated population as against 8.3 per mille in 1932.

The following statement furnishes the mortality statistics for the past 10 years:—

Year.	Deaths.	Year.	Deaths.
1924	4183	1929	5324
1925	4712	1930	5256
1926	4947	1931	5743
1927	5035	1932	5509
1928	6879	1933	5967

Tuberculosis.—1,011 deaths were registered from tuberculosis in 1933 against 917 deaths in 1932 and against 1,239 the average of the quinquennium 1928–32. The annual death rate was 1.5 per mille of the estimated population as compared with 1.4 per mille in 1932. The number of deaths due to tuberculosis of the lungs was 855 or 1.3 per mille compared with 747 deaths or 1.1 per mille in 1932.

**DEATH RATES FROM PRINCIPAL CAUSES
IN 1933 AND THE QUINQUENNIAL
AVERAGES IN 1928-32.**





The mortality from tuberculosis for the past 10 years is enumerated below :—

Year.	Deaths.	Year.	Deaths.
1924	1468	1929	1371
1925	1604	1930	1075
1926	1538	1931	1020
1927	1781	1932	917
1928	1812	1933	1011

Deaths from Child-birth.—331 women died from causes connected with child-bearing during the year as against 299 in 1932. The maternal mortality rate was 11.6 per 1000 live births as compared with 10.0 in the previous year.

The maternal mortality rates from 1925 to 1933 are as follows:—

Year.	Rate per 1000 births.
1925	...
1926	...
1927	...
1928	...
1929	...
1930	...
1931	...
1932	...
1933	...

Among 331 deaths, 178 or 53.8 per cent of the total deaths were due to puerperal sepsis. Calculated with reference to births, the death rate from puerperal sepsis was 6.2 per 1000 births in 1933 compared with 6.5 in 1932.

Deaths from "Other Causes".—10,950 deaths were registered under this group during the year against 10,564 in 1932 and 9,912 being the quinquennial average. Under this heading are included deaths due to circulatory, digestive, nervous, genito-urinary and other systems except respiratory system. The annual death rate was 16.1 per mille of estimated population as compared with 15.9 in 1932 (Annual Form XVIII).

Certified deaths.—4,525 deaths were certified by the various hospitals in the city and 854 by private medical practitioners. The certified deaths represented 22 per cent of the total deaths in 1933 compared with 15 per cent in 1932.

During the year under report special cards were printed and distributed to all the medical practitioners in the City to report without delay the occurrence of dangerous diseases coming to their notice as required under section 330 (1) & (2) of the Madras City Municipal Act IV of 1919 and also to give information to the Health Officer and to the Registrar of Births and Deaths in the division about the deaths of persons, within 3 days of their becoming aware of such deaths as required in G.O. No. 5714 L. & M., dated 19-12-1929. Printed forms in duplicate were distributed to the medical institutions in the City for reporting dangerous diseases admitted by them for treatment. There was an appreciable response from the hospitals and medical practitioners.

Burial and Burning grounds.—The Sanitary Inspectors supervised the burial and burning grounds in the City. Out of 24,500 deaths in 1933, 4,865 corpses were burnt and 19,635 corpses buried. A new site measuring cw. 3-5-376 was acquired at a cost of Rs. 15,000 in R.S. No. 3532 of Tondiarpet for use as a burial ground for the Sunni and Bhora communities.

Vaccination.

16 Sub-Assistant Surgeons and 37 vaccinators of whom 2 were females, were in charge of the work of vaccination in the City during the year under report. The epidemic of small-pox which was very severe during the year necessitated the employment of additional staff for performing vaccinations in a large scale among the masses.

Operations.—On the advice of the Director of Public Health the number of insertions for each infant was reduced to two on one arm only. The total number of vaccinations performed during the year was 1,99,452 of which 30,851 were primary vaccinations and 1,68,601 revaccinations. The comparative

table below gives the figures for the last three years. The number of vaccinations during 1933 was the highest on record in the history of the Corporation.

		1931	1932	1933
Primary Vaccinations	...	27,260	27,076	30,851
Re-Vaccinations	...	9,377	21,757	1,68,601
Total	...	36,637	48,833	1,99,452

30,692 primary vaccinations and 29,591 re-vaccinations were successful during the year as against 27,011 and 4,610 respectively in 1932. The percentage of success under primary vaccinations and re-vaccinations for the past 5 years is furnished in the statement below :—

		1929	1930	1931	1932	1933
Primary vaccinations	...	98.5	99.0	99.6	99.9	99.7
Re-vaccinations	...	30.1	23.6	26.7	26.2	22.4

The percentage of success in primary vaccinations was slightly lower in 1933 than in 1932 but was high enough compared with the rates for the past five years. The low percentage of success in re-vaccinations is due to the unusually large number of persons re-vaccinated most of whom must have been immune at the time. 93.1 per mille of the population of the City were successfully vaccinated during the year as against 48.9 in 1932.

Infantile Vaccination :—22,105 infants under one year of age were vaccinated during 1933 as against 18,976 in 1932. Of these, 22,012 were successful operations compared with 18,940 in 1932. Of the 22,015 infantile vaccinations, 16,291 were performed on infants born in Madras, the rest being moffusil children.

Verification of Births :—During the year 1933, 28,479 births were verified for purposes of vaccination compared with 26,298 births verified in 1932. 4,973 children died before attaining the age of one year and without being vaccinated. 5263 children were removed from the City without being vaccinated. The number available for vaccination was 18,243. Of these, 13,616 or 74.6 per cent were vaccinated against 71.7 per cent in the previous year. An increase of 2.9 per cent over the preceding year was obtained.

Postponement of Vaccination in children :—The vaccination of 1315 children was postponed during the year for medical reasons.

Inspection of Vaccinated persons :—The results of vaccinated persons were verified by the Health Officer, Assistant Health Officers and the Medical Vaccinators. The results of 30,795 or 99.8 per cent of the total primary vaccinations and 1,32,263 or 78.4 per cent of the total re-vaccinations, were verified by them during the year under report.

Lymph :—Lymph for 1,47,020 cases was supplied by the King Institute of Preventive Medicine at Guindy during the year and the total number of persons vaccinated was 1,99,452.

Prosecutions :—The parents of 43 children were prosecuted for failure to vaccinate their children. 29 prosecutions were with-drawn as the parents got the children vaccinated subsequently. 14 parents were convicted and a sum of Rs. 11 was realised as fines.

Rewards amounting to Rs. 249 were paid for re-vaccination in Kuppams and backward areas on account of the epidemic of small-pox.

Cost of Vaccination :—The cost of each successful vaccination in 1933 was Rs. 0-11-3 against Rs. 1-2-2 in 1932.

Sanitation.

The Health administration was carried on during the year as before under the immediate supervision of two Assistant Health Officers. Dr. A. Muthukrishna Reddiar, B.A., M.B. & C.M., Assistant Health Officer, North Range, retired from service on 20-5-1933 and was succeeded by Dr. S. E. D. Masilamany, M.B.B.S., B.S.Sc.

Water supply.—The quality of pipe water supplied to the City was being tested as usual at the Water Analysis Laboratory at Kilpauk. Details of the work done in this direction will be found in the report of the Water Analyst which forms part of this Annual Report. 8 bathing fountains were constructed by the Corporation during the year.

Sewerage.—43,940 ft., of sewers were laid during the year, the total length covered up to 31-12-1933 being 11,31,515 ft. 1,976 flush-out latrines were constructed in the City during the year.

Slums and housing.—The problem of housing and improvement of slums in the City is engaging the serious attention of the Corporation. A special Housing Committee was appointed by the Council during 1933 to go into this question in detail with a view to evolve a comprehensive housing policy for the City.

The Sanitary Inspectors systematically conducted house to house inspections with a view to remedy sanitary defects. 13,286 houses were so inspected during the year of which 4,390 were found defective—1031 for want of proper drainage, 617 for lack of proper latrine accommodation, 94 for defective water supply, 864 for bad ventilation and 1784 for miscellaneous defects. As a result of the action taken by the Health Department improvements were effected in 3,576 houses. During the year, 3156 plans for construction and re-construction of houses were received in this Department for scrutiny.

In connection with the detection of epidemic diseases 50,924 houses were inspected during the year. 265 cases in which parties failed to notify occurrence of small-pox in their residences were prosecuted and convicted and a sum of Rs. 629-4-0 was collected as fines. 5067 premises were disinfected during the year and 178 gallons of hycol, 156½ gallons of phenyle and 82 gallons of Newcol were used for the purpose.

Factories.—All the factories in the City were inspected during the year by the Health Officer and by the two Assistant Health Officers who continued to be Additional Inspectors of Factories and the reports of inspection were forwarded to the Chief Inspector of Factories. In one factory flush-out latrine was introduced, while in another, the existing flush-out accommodation was extended.

Offensive and dangerous Trades.—During the year under report 5,577 applications were received for licenses for these trades. Licenses were granted in 4,824 cases and refused in 176 cases. The rest were pending at the end of the year. Prosecutions were instituted in 1463 cases before and after licenses were issued to enforce the sanitary regulations for the control of these trades.

The Corporation maintained three model cattle yards, one at Basin Road, another in Purasawalkam and a third in Chintadripet. The total number of animals housed in these yards was 338. There were 1474 licensed private cattle yards in the City during the year.

The Elephant Gate cart stand was under the control of the Health Department. It was leased out on contract for Rs. 7,400 for the official year 1933-34.

Meat Supply.—The Corporation maintains the Slaughter Houses at Perambur where sheep, cattle and pigs are slaughtered for consumption in the City. Animals brought for slaughter and the carcasses of slaughtered animals are inspected by the Superintendent in charge, who is a Veterinary graduate, with a view to ensure the quality of meat supplied to the City. A statement of the animals and carcasses inspected, those that were rejected and the carcasses or parts condemned as unfit for human consumption and destroyed is furnished hereunder.

		No. of animals brought for slaughter and inspected.	No. of animals rejected.	No. of carcasses inspected.	No. of carcasses condemned.	No. of diseased parts condemned.
Sheep	...	4,80,431	6,665	4,73,766	22	5,932
Cattle	...	17,120	692	16,428	2	3,944
Pigs	...	1,614	167	1,447	11	342

The rights of collecting rents and fees from the Cattle and Sheep slaughter houses were let on contract for Rs. 19,600 and Rs. 65,300 respectively for 1933-34.

Slaughter of animals in places other than the Slaughter Houses was permitted on payment of fees during festival occasions. The income for the year from this source was Rs. 98-4-0. Free permits were issued for slaughter of animals for Hakika and Bakrid.

Food control.—The Fruit Market at Esplanade and the Vegetable Market at Mambalam which were under construction last year were completed during the year under report and opened for use in April and May 1933 respectively. 71 additional stalls were constructed in the Moore Market Evening Bazaar.

A regular and systematic inspection of the articles of food exposed for sale was conducted during the year. A list of unwholesome articles of food destroyed and the number of prosecutions instituted under Section 310 of the Act to prevent the sale of food stuffs on the road sides, over side drains etc., will be found elsewhere.

Weights and Measures.—During the year under report the two Inspectors of Weights and Measures continued to carry out regular inspection of weights and measures used in markets, bazaars and shops and by milk-sellers and hawkers. It is gratifying to note that non-standard weights and measures have almost disappeared from use. The few defective weights still in use in the City are those that are generally brought in from the moffusil. In 528 cases, weights, measures and scales found defective were seized and confiscated. Prosecutions were launched in 59 cases of which 51 cases resulted in conviction. It has been found impossible to stop completely the use of false weights in the absence of any legislation penalising the very possession of such weights.

Medical Relief.—The Corporation continued to maintain two infectious diseases hospitals, 19 allopathic dispensaries and 4 dispensaries of the indigenous system of medicine. Skin clinics were opened in all the dispensaries for the treatment of skin affections including non-infectious cases of leprosy, and Dr. P. Parthasarathy Naidu was appointed as the Honorary Leprosy Officer of the Corporation for this purpose. A statement of cases treated in these institutions is furnished elsewhere.

The Leprosy clinic attached to Vyasarpady Dispensary continued to do very useful work during the year and was very popular. During the year, 2049 cases of skin diseases were registered at the dispensary, of which 274 were for leprosy—124 infective and 150 non-infective. Of these, 114 infective and 135 non-infective cases received injections and the remaining 25 cases did not attend the clinic to receive treatment. Improvement was noticed in 43 non-infective cases and 19 infective cases and in 2 non-infective cases the symptoms of the disease disappeared after treatment.

The Corporation Poor House.—There were 162 inmates at the beginning of the year. 195 persons were admitted during the year, 132 were discharged for various reasons, 47 died in the Poor House and 4 absconded. The number remaining in the House at the end of the year was 174. All the necessary comforts were provided for the inmates. They were given wholesome food, clothing and medical help. Two separate medical wards with 48 beds were maintained in the House. A few of the inmates who were able to do light work maintained a small vegetable garden. An endowment of Rs. 50 was made by the Corporation Officials' Association for giving religious 'Kalakshepams' in the House. Another amount of Rs. 50 was given by the Corporation Officials' Restaurant to be utilised towards the feeding of the inmates. Besides these, endowments of Rs. 300 and Rs. 100 were given by Mr. C. Krishnaswami Naidu, Proprietor, Madras Radio Company and from an anonymous donor through Dr. U. Krishna Rao, Councillor, respectively.

Anti-Rabic Measures.—The electrocuting chamber at Basin Road continued to work throughout the year. 7933 dogs were caught and taken to the lethal chamber of which 221 were claimed back by the owners. 6871 were electrocuted. The remaining dogs were awaiting disposal at the end of the year.

Zoological Gardens.—The Corporation Zoological Gardens are in charge of a Zoology graduate. There is a small lake situated in the gardens where pleasure boats are plied. Visitors to the gardens are charged at 1 anna per head.

and the right of collecting the entrance fee from 1-4-1933 to 31-3-1934 was let out on contract for Rs. 21,500. During the year under report there were several additions to the livestock.

Publicity and Health Education.—This department continued to carry on a systematic campaign to dispel ignorance and superstition among the masses and instil in them knowledge about the prevention of communicable diseases, personal hygiene and healthy living. This was conducted by means of posters, hand bills, leaflets, lectures, magic lantern demonstrations, cinema shows etc. Three films prepared by the Public Health Department, Madras, with the title 'Saving of the Race' on maternity and child welfare, 'Lost and Found' relating to venereal diseases and 'The Man who was afraid' on cholera were purchased during the year at a cost of Rs. 1270. 1767 open air lectures, 2215 talks, 1050 demonstrations with the aid of magic lanterns and 150 cinema shows on health subjects were arranged. Besides the above, two divisional health exhibitions were conducted, one at the Corporation Boys School, Strahans Road, Perambore, for 3 days from the 15th July 1933 and the other in Triplicane at the Corporation Boys School, Venkatarangam Pillai Street for 5 days from the 27th September 1933. They attracted a large number of visitors from the neighbouring areas. During these exhibitions special conservancy arrangements were made and house to house propaganda was conducted to educate the residents in prevention of disease, observance of sanitary rules etc.

Prevention of Food Adulteration.

Mr. V. Venkatachallam, Public Analyst for the Corporation, continued to work under the Government Analyst, King Institute, Guindy, till 31st January 1933, after which date steps were taken to start the Corporation Food Analysis Laboratory, in the buildings of the Water Analysis Laboratory, Kilpauk. The apparatus and chemicals required for the work were purchased at a cost of Rs. 7,500 and the Laboratory commenced its work on the 27th May 1933. In G. O. No. Mis. 1089 P. H., dated 19th May 1933, the Government approved the appointment of Mr. V. Venkatachallam as the Public Analyst of the City of Madras, under Section 4 (1) of the Madras Prevention of Adulteration Act.

The report for the year includes the work carried out on behalf of the Corporation by the Government Analyst, Guindy, till 31-1-1933 and continued by the Corporation Public Analyst from 27-5-1933 after the Kilpauk Laboratory was fitted up.

During the year ending 31st December 1933, 697 samples were sent for analysis, out of which 52 samples were sent to the Government Analyst, Guindy, and the remaining to the Corporation Laboratory, Kilpauk. Of the 697 samples, 667 samples were analysed and reported on during the year. Report on 30 samples was pending on 31st December 1933. Out of 667 samples analysed, 425 were found to be genuine and 242 to be adulterated. The percentage of samples found to be adulterated during the year was 36.3.

The samples consisted of ghee, butter, milk, gingelly oil, coffee powder and tea. A tabular statement of the samples analysed is given below.

Nature of samples.	No. of samples analysed in 1933.	No. of adulterated samples in 1933.	Percentage of adulterated samples in 1933.	No. of samples analysed in 1932.	Percentage of adulterated samples in 1932.
Ghee ...	368	175	47.6	431	46.6
Butter ...	63	7	11.1	71	22.5
Milk ...	63	29	46.0	157	38.2
Gingelly Oil ...	155	31	20.0	225	35.1
Coffee Powder ...	5	Nil.	Nil.	128	14.1
Tea ...	13	Nil.	Nil.	135	4.5
Cocoanut Oil ...	Nil.	Nil.	Nil.	13	Nil.
Total ...	667	242	36.3	1160	32.8

In comparing the percentage of adulteration in 1933 with that of the previous year, the following points should be borne in mind.

(1) Ghee in which adulteration is more pronounced than in the other articles formed 55 per cent of the total samples in 1933, whereas it formed only 37 per cent of the total samples in the previous year.

(2) The Prevention of Adulteration Rules published in G.O. No. 1867, P.H., dated 1st September 1932 came into active operation only towards the close of 1932. In the year under report a very large proportion (about 65 per cent) of the adulterated ghee samples had been orally declared as such by the vendors but after confirmation by analysis, the vendors were prosecuted for infringing the labelling regulations. In the previous year vendors could escape by such oral declarations alone. When these samples where there was only infringement of labelling regulation are left out of the calculation, the actual percentage of adulteration of the samples during the year works out at a comparatively low figure of 23.5 as against 32.5 in the previous year. This shows that the working of the Act has definitely improved the quality of food-stuffs sold in the city. It may be mentioned that the gross adulteration of coffee powder and tea noticed in previous years has been effectively stopped, as even casual sampling of these two articles at long intervals could not detect any adulteration in the same. Butter and gingelly oil have also improved in quality considerably. In the case of milk alone a higher percentage of adulteration was noticed.

The question of the sale of ghee in the city calls for special attention. The vendors of this article are permitted to sell mixtures of ghee with other fat, if they give the minimum percentage of ghee, the mixture contains, on a label affixed to the vessel containing the article, so long as the admixed fat is not derived from the carcasses of animals. As the labelling regulations came into active operation during 1933, a number of prosecutions were conducted for infringing these regulations alone during the year under report. The situation has improved considerably during the year, as most of the vendors of adulterated ghee labelled their articles correctly during the latter part of the year. It may be mentioned in this connection that many vendors give a ridiculously low percentage of ghee on the label, say 1 to 5 per cent. They always escape prosecution this way but it is reported by the Food Inspectors that the same vendors explain to their customers that the label is always there to protect themselves against the Act in case of emergency and that the articles are really genuine or of superior quality. The absurdly low figure on the labels gives a favourable impression to the customers about the *bona fides* of the vendors concerned. It is highly desirable that the Act should have a provision to check this sort of fraud by preventing the sale of adulterated ghee containing less than a prescribed proportion of ghee, say 50 per cent. It is also desirable that there should be labelling regulations for other articles of food stuffs such as coffee powder, gingelly oil etc., where vendors have freely begun to declare the articles as mixed or adulterated in order to escape prosecutions.

The nature and extent of adulteration of the various articles are given below:—

Ghee.—368 samples were analysed during the year of which 30 had been analysed by the Government Analyst in January 1933 who reported 15 samples as genuine and 15 as adulterated. Of the remaining 338 samples analysed by the Public Analyst 152 samples had been sold as 'Ghee' by vendors out of which 45 were admixed with foreign fat. 63 samples had been labelled according to regulations and of these two samples alone contained a less proportion of ghee than that declared on the labels. 123 samples had been orally declared by vendors to be of low quality or adulterated but had not been labelled properly. Of these, 113 samples were found to be adulterated, the remaining 9 samples being genuine. In the case of the ghee samples analysed, foreign fat mostly of vegetable origin ranging from 10 per cent to 100 per cent was found.

Butter.—63 samples were analysed. Water in excess of the prescribed limit of 20 per cent was found in six samples ranging from 5 per cent to 47 per cent. Fat other than milk-fat was found in one sample to the extent of 25 per cent.

Milk.—63 samples were analysed of which 42 were sold as milk or cow's milk, 20 as buffalo's milk and one as mixture of cow's and buffalo's milk. Extraneous water ranging from 5 to 54 per cent was found in 29 samples.

Gingelly Oil.—155 samples were analysed. The only adulterant detected was ground-nut oil and the degree of adulteration varied from 20 to 85 per cent in 31 of the samples.

Coffee Powder.—5 samples were analysed. 3 samples were genuine and the remaining two were found to contain chicory. In the latter 2 samples the proportion of chicory had been correctly indicated on the label by the vendors and hence certified as genuine.

Tea.—13 samples were analysed and all were found to be genuine.

The total number of adulterated samples in the year 1933 was 242, out of which in the case of 201, prosecutions were successfully launched and convictions obtained during the year. 32 samples were pending disposal on 31st December 1933 and 9 ended in either acquittals or withdrawals of prosecutions. Of the 144 adulterated samples which had been taken during 1932 but not disposed of during that year, 140 were finally disposed of during 1933 resulting in 134 convictions, 6 cases being either acquitted or withdrawn. In the case of the remaining 4 samples of 1932, the cases were finally adjourned *sine die* since the vendors could not be traced.

Among the adulterated samples of 1933 there was one acquittal on the ground of insufficient evidence of sale. In the case of 4 samples action was dropped as the vendors either absconded or could not be traced. In the case of 2 samples, no action was taken on the advice of the Corporation Legal Adviser, and another case was let off with a warning. One adulterated sample of butter was from a Co-operative Society, but on production of a certificate of warranty from their wholesaler, the Society was warned and let off.

Details of the action taken in the case of the adulterated samples are given below :—

Nature of samples.	No. of adulterated samples in 1933.	No. of adulterated samples of 1932 disposed of in 1933.	Total No. of adulterated samples.	No. of adulterated samples pending disposal on 31-12-1933.	No. of samples which ended in acquittals, withdrawals, 'No prosecutions' etc.	No. of convictions.	Total fines.	Average fine per conviction.	No. of convictions in 1932.	Average fine per conviction in 1932.
							Rs.	Rs.		Rs.
Ghee ...	175	93	268	28	11	229	5,792	25	161	20
Butter ...	7	2	9	...	1	8	171	21	5	16
Milk ...	29	26	55	6	1	48	817	17	39	14
Gingelly Oil ...	31	23	54	2	2	50	1,189	24	46	17
Coffee Powder.	Nil.	...	...	...	...	...	...	...	19	13
Tea ...	Nil.	...	...	...	...	...	...	...	6	14
Total ...	242	144	386	36	15	335	7,969	24	276	18

The above statement shows that the total number of convictions obtained during the year was 335 and the total fines amounted to Rs. 7,969 as against 276 convictions and Rs. 4,922 by way of total fines in the previous year. The average fine per conviction during the year under report works out at Rs. 24 against Rs. 18 in the previous year. It may be emphasised here that for deriving the full advantage of the working of the Prevention of Adulteration Act, the fines ought to be sufficiently high to make adulteration unprofitable for the vendors even if they are caught only occasionally. If the fines are small, the vendors can pay them from a small portion of their illegitimate profits and still continue with adulteration as they would soon begin to realise that the fines would only be a small tax on their illegitimate profits, which they could well afford to pay.

If this is borne in mind, the average fine of Rs. 24, though better than the previous year's figure, is inadequate for the purposes of the Act. The Act has now been in force for a sufficiently long time and there is no meaning in inflicting small fines hereafter. It may also be mentioned in this connection that

the fines were somewhat high during the earlier part of the year but fell off considerably during the latter part. A statement of the number of convictions for each month during the last quarter of 1933 is given below :—

Month.				No. of convictions.	Total fines.	Average fine per conviction.
					Rs.	Rs.
October	...	...	...	35	842	24
November	...	...	...	50	1,046	21
December	...	...	...	41	606	15

This statement shows that there was a considerable fall in the fines during December. One would naturally expect an increase in fines as vendors would come in for second and subsequent convictions more and more. Unless the fines become sufficiently deterrent the full effect of the working of the Act cannot be realised.

It is hoped that in future this situation will improve considerably so that the vendors of adulterated food-stuffs may finally realise that even from the point of view of profit and loss it is not worth while adulterating their articles.

Infectious Diseases Hospitals.

The two infectious diseases hospitals at Tondiarpet and Krishnampet continued to give efficient service during the year. Owing to the rush of small-pox cases, the accommodation in both the hospitals was found inadequate and as an emergency measure, temporary sheds were constructed and additional cots were provided at a cost of Rs. 4367. A brief report about the work done in these Hospitals is given below.

Infectious Diseases Hospital, Tondiarpet.—The hospital was in charge of a medical graduate who was assisted by a Sub-Assistant Surgeon and a staff of sick nurses, compounder and menials. Extra staff was also appointed to cope with the increased work during the epidemic of small-pox and cholera.

2688 cases of infectious diseases were admitted to this hospital during the year as compared with 1482 in 1932. Cases of small-pox which numbered 1993 formed nearly $\frac{3}{4}$ of the total admissions. The next largest number of admissions was for chicken-pox—399, which was as usual characterised by no mortality. Cholera contributed to the third largest number of admissions, viz., 97. The daily average number of cases in the hospital was 132. The mortality rate for all diseases was 16.7 while for the year 1932 it was 7.4. The increase in the mortality rate was due to the epidemics of small-pox and cholera.

Krishnampet Isolation Hospital.—This hospital continued to be in charge of a medical graduate assisted by a staff of nurses, compounder and menials. Additional staff was entertained during the epidemics of small-pox and cholera. 1339 cases of infectious diseases were admitted into the hospital during the year as against 617 cases in 1932. The largest number of admissions was for small-pox, viz., 1189. The admissions for chicken-pox and cholera were 74 and 33 respectively. The daily average number of patients in the hospital was 75. The mortality rate for all diseases was 17.3 as compared with 7.5 of the previous year. The increase in the death rate was due to the epidemics of small-pox and cholera.

Details of the cases treated in the two hospitals and the vaccinal condition of the small-pox patients are furnished in the statements appended hereto.

Aided Institutions.

A brief account of the Public health work done by various institutions in the City is furnished below.

The Buckingham and Carnatic Mills Welfare Committee.—During the year under review, the Welfare Department organised in the Mill villages and neighbouring localities a series of magic lantern lectures and cinema shows on health matters for the benefit of the workmen of the mills who live there. A

Young Men's Association, started in the Buckingham Village, launched a vigorous campaign against the drink evil. Lectures to the women in the Mill villages on 'Maternity and Child Welfare' were also organised by the Village Associations.

The Chengalvaraya Naicker's Free Ayurvedic Dispensary, Vepery.—This dispensary rendered medical aid to 2,15,831 patients during 1933 as against 2,22,787 patients in 1932.

The Chennapur Annadana Samajam.—During the calendar year 1933 the Samajam fed 65,148 poor men and supplied clothing to 600 persons. In addition to the feeding of the poor at the Samajam premises, the institution provided midday meals for 120 poor pupils of the Brahmo Ragged School and 120 of V. Subramaniam Free School at the respective School premises.

The Friend-in-need Society.—With a view to relieve the deserving poor and to suppress mendicancy among Europeans and Anglo-Indians, this Society runs a Home, for the infirm and destitute, in which they are lodged and supplied with the necessaries of life. During the year under report there were 80 permanent inmates. The total amount spent by the Society towards the various kinds of relief afforded by it, was Rs. 36,842-14-7.

The Government Victoria Caste and Gosha Hospital.—The number of out-patients who attended the hospital during 1933 was 75,354. The work at the hospital has increased enormously during recent years.

The Kalyani Hospital.—During the year, the total number of out-patients treated in the hospital and its two dispensaries was 13,191. Besides 2,200 in-patients were treated. The number of maternity cases was about 750. Preventive inoculations against cholera were given to 600 people, mostly College students and School girls.

The Ramakrishna Mission Students' Home.—The strength of the Home during the year was 138 students. There is a medical ward for the inmates with a visiting doctor in charge. The Home continued to be a very useful institution for the advancement of education of poor and deserving students.

San Thome Dispensary.—The out-patient dispensary rendered treatment to 12,680 patients during the year.

Sree Kanyaka Parameswari Devasthanam Dispensary.—The total number of patients treated during the year was 92,122 as against 90,977 patients in the previous year.

The San Thome Convent Dispensary.—The number of patients treated in this dispensary during 1933 was 36603. The dispensary continued to do good work and rendered help to all communities of people in and around San Thome and Mylapore.

The Madras Children's Aid Society.—Periodical health lectures illustrated by magic lantern slides or cinema films were given by the National health Association, and instructions were often given to the inmates on health subjects by the members of the staff and outsiders.

Report of the Port Health Officer on the working of the Plague Regulations at the Port of Madras for the Calendar Year 1933.

Incoming vessels.—623 vessels arrived here during the year from different ports with 58,475 crew and 55,596 passengers as against 671 vessels with 61,408 crew and 89,977 passengers in the previous year.

Outgoing vessels.—548 vessels with 49,108 crew and 37,310 passengers were inspected and granted Bills of Health during the year as against 270 vessels with 29,448 crew and 12,369 passengers in the previous year.

Epidemic and Infectious Diseases.—4 cases of chicken-pox, 2 cases of small-pox and 1 case of cholera were landed from ships and sent to the Infectious Diseases Hospital, Tondiarpet.

Disinfection of bedding and clothing of deck passengers and crew landing and embarking here is carried on at the discretion of the Port Health

Officer as usual. The disinfection shed is in charge of a Sub-Assistant Surgeon and a nurse is employed to assist in examining the female passengers.

Rats on Steamers.—No deaths among rats were found on any of the vessels that entered the harbour during the year under report.

Conservancy.

The conservancy of the City continued to be under the direct supervision of Mr. W. L. Edwards, the Drainage Superintendent who was assisted by two Supervisors. There were 20 Sanitary Inspectors, 17 Process Servers and 161 conservancy peons in charge of the conservancy of the city. The sewer and main drain cleaning staff continued to be under the Drainage Superintendent as before. The Veterinary Officer was in charge of the veterinary work at the Cattle Depots.

Cleaning Staff.—During the year 1933, 2234 men, 184 women and 234 boys were employed for the cleaning of streets, drains and latrines in the City. Details of carts employed for the removal of rubbish and filth during 1933 are furnished below.

Trollies, double and single draught carts, for the removal of rubbish	... 400
Night soil carts	... 90
Sewage and silt carts	... 50

Animals.—The number of bullocks on hand on 1-1-1933 was 713 as against 688 on 1-1-1932. 138 bullocks were purchased during the year making up a total of 851. 113 animals died during the year as against 119 in the previous year. Of these 58 died of old age and general debility, 3 of anthrax, 10 of tuberculosis, 2 of trypanosomiasis, 2 of foot and mouth disease, 4 of piroplasmiasis and 34 of natural causes leaving a balance of 738 at the end of the year. The health of the conservancy bullocks was on the whole fair. 344 animals were treated in the Corporation Veterinary Hospital at Hope Lodge. There was no rinderpest in the depots during the year.

Conservancy Carts, etc.—During the year under report 56 rubbish and 26 box carts and 2002 dust bins and 290 night soil buckets were manufactured.

Motor Lorries.—36 motor lorries were employed for the removal of rubbish, filth and sewage. 1 Federal and 2 New Ford lorries were purchased during the year.

Tipping Platforms.—The two model tipping platforms constructed at Basin Bridge and Langs Garden Pumping Station continued to serve very satisfactorily. The platform at Triplicane was abolished as per resolution of the Council dated 8-8-1933. In its place a new tipping platform was opened at the Krishnampet Incinerator.

Removal of rubbish.—About 5,45,087 cart loads of rubbish were removed from the City during the year as against 4,78,750 cart loads in the previous year.

84,744 cart-loads were disposed of at the Incinerator by separation and incineration, 2,98,238 cart loads of rubbish were used in reclamation works, at the Choolai Burning Ground, Railway land at Korukkupet, Salt Cottars and the People's Park moat and ponds. The balance was deposited in the dumping grounds at Korukkupet, Ottery, Rifle Range and Mylapore.

The Incinerator at Krishnampet continued to function throughout the year. The Incinerator at Basin Road was closed for repairs from 17-8-1933. Permits for the removal of 1,04,115 cart loads of incinerator ash and screened earth were granted to private parties free of charge for purposes of reclamation.

Disposal of filth.—The three pail depots at Ice House Road, DeMellow's Road and Langs Garden worked throughout the year. About 1,06,198 cart loads of filth were removed from the city, of which 8,2248 cart loads were flushed into sewers at the Pail Depots. The balance was trenched at the Ottery and Korukkupet Night Soil Depots. The amount realised by the sale of manure from the trenching grounds during the year 1933-34 was Rs. 6100.

Public Latrines.—The number of public latrines in the city during the year was 268 of which 210 were flushout, 36 masonry, and 22 sanded latrines. 28

new flushout latrines were constructed. 3 sanded and 4 masonry latrines were converted into flushout ones and 4 flushout latrines were extended by the provision of additional seats. Sand was renewed in all the sanded latrines. 1063 gallons of Hycol, and other disinfectants, 4204 parabs of chunam and 119 lbs. of bleaching powder were used for the disinfection of drains, street corners, dust bins and night soil buckets. 4 public latrines at the following places were demolished as their existence were objected to by the public.

1. China Bazaar Road.
2. Alangatha Pillai Street.
3. Khana Bagh Street.
4. Bandy Venkatesa Naick Street.

During the year under report 40 zinc enclosures were constructed at a cost of Rs. 5000 for keeping the night soil buckets.

Private scavenging.—Under Section 197 of Act IV of 1919 the Corporation undertook the conservancy of some private institutions and the amount realised thereby was Rs. 22,719-11-11 against Rs. 23,739-5-2 in the previous year. As usual special arrangements were made for efficient conservancy during all the important festivals in the City. The conservancy of South Indian Athletic Association Grounds was attended to departmentally during the Park Fair 1933-34 on payment of fees.

Labour.—There was no trouble from labourers during the year. Bonus was granted to the coolies who retired on account of old age or infirmity as per regulations issued in G.O. No. 4942 L. & M. dated 22-12-1931. 301 conservancy coolies are occupying houses in model lines and 193 live in huts on Corporation land. No additional lines could be constructed for want of funds though the demand for them is increasing year after year.

General.—The total expenditure on conservancy for the financial year 1933-34 was Rs. 9,30,655-9-6 (Rs. 55,081-1-5 Capital and Rs. 8,75,574-8-1 ordinary) against Rs. 9,23,639 for 1932-33 (Rs. 51,665 Capital and Rs. 8,71,974 ordinary). The amount spent on wages of conservancy coolies was Rs. 5,82,560.

Anti-Malarial Measures.

During the year 1933 Anti-Malarial measures were carried out by a staff consisting of 2 Supervisors, 6 Maistries and 68 coolies under the direct control of the Medical Officer.

Control of Tanks and Ponds :—502 tanks and ponds existed in the City at the beginning of the year under report. These were responsible chiefly for the breeding of Anopheles mosquitoes. The methods of control adopted were to keep those used for irrigation and garden purposes free from weeds, moss, floating matter and rank vegetation all round with the sole object of enabling the larvicidal fish to feed on the mosquito larvae, and to petrolise unused ponds weekly or to fill them up.

As a result of the action taken by the Health Department, 320 private tanks and ponds were cleaned and petrolised and 7 private tanks filled up. The Malaria staff cleaned 176 tanks and ponds on payment of charges by the owners, and 144 tanks were attended to by the owners themselves. The amount collected for services rendered in this connection during the year was Rs. 1926-1-0.

The public ponds and tanks belonging to the Corporation were also attended to by the staff. 8 such tanks were cleaned periodically during the year. The Corporation staff cleaned 5 private tanks free of charge on account of their receiving the storm water of the surrounding area.

9 ponds were reclaimed during the year, of which 2 belonged to the Corporation. Out of the 7 private ponds reclaimed, 4 were done by the private owners and 3 by the Corporation at the cost of the owners after notification.

Control of Wells :—Wells form the chief breeding places for mosquitoes (culex and anopheles) especially in central and overcrowded divisions. The severe mosquito nuisance and malarial incidence in such divisions are from wells in a neglected condition.

2 fishermen and 4 fishing coolies introduced larvicidal fish into private and public wells in the City as in previous years. During the year 14,476 wells were inspected for the introduction of fish. Of these, 2086 wells were inspected

twice during the same year. A detailed statement of the wells examined during the year is furnished below :

—	1st inspection.	2nd inspection (after 10 months).	Total.
No. of wells found filled up ...	407	19	426
No. of wells found covered with Cuddapah slabs ...	225	7	232
No. of wells examined ...	11,758	2,060	13,818
No. of wells with fish alive ...	4,230	1,162	5,392
No. of wells with fish dead ...	7,528	898	8,426
Percentage of wells with fish dead to total wells examined ...	64	43.6	61
No. of wells breeding Culex and Anopheles mosquitoes either alone or together ...	2,218	189	2,407
Percentage of wells breeding mosquitoes to the total wells examined.	18.9	9.2	17.5
No. of wells breeding Anopheline larvae ...	801	56	857
Percentage of wells breeding Anopheline larvae to total wells examined.	6.8	2.7	6.2
No. of bad wells petrolised by the staff during the inspection ...	269	28	297
No. of wells in which larvicidal fish was introduced ...	11,102	1,972	13,074

The results of wells inspected twice during the year unmistakably establish the need for re-stocking fish at shorter intervals. Once in 3 months all the wells should be inspected and re-stocked with fish. The fish die within 3 months for lack of food or for some other reason. Unless they are always in sufficient numbers and the wells are kept constantly free from all floating matter, no effective and proper control can be established. The present staff is inadequate for the purpose and requires to be augmented.

744 bad wells were reported to the divisional Sanitary Inspectors and fish were introduced into them soon after report from the Inspectors that they had been cleaned and cleared of silt.

The introduction of trap-doors for unused wells was insisted upon as an alternative to filling or covering with cuddapah slabs with the double object of preventing ingress of mosquitoes and keeping away all objectionable materials from falling into the wells which would otherwise be harmful to the life and usefulness of the larvicidal fish in them.

The larvicidal fish are obtained from local tanks and ponds lying on the out-skirts of the City. They are *Haplochilus Melanostigma* (Mundaikannoo), *Panchax* (Pachai Mundaikannu or Nama Kandai), *Chela* (Vellichai Kundai) and *Barbus* (Chinna Kullai Kandai).

The fish gangs inspected the premises and compounds during the introduction of fish into wells and destroyed mosquito larvae found in tins, pots, broken vessels, cisterns, blocked-up drains, etc. The inmates were shown the larvae and were instructed to prevent such breeding in future.

Control of Public Drains, Cesspools, etc. :—The Corporation maintains 2 maistries and 14 coolies for oiling work. There are about 90 covered drains, 220 open drains, 100 ditch drains, 1290 cesspools and 466 gulley traps. These were petrolised once a week. Stagnant pools, pits and low-lying lands were also attended to.

Inspection doors were constructed over some of the covered drains during the year to facilitate easy cleaning and oiling. In some of the surface drains which are covered and buried underground, thus making difficult frequent

and proper attention by the staff, mosquitoes breed freely. Special attention was paid to them by cleaning and oiling them once a week, and thus nuisance was kept under control.

A mixture of liquid fuel and kerosene oil was used for petrolising. Saw dust or used cotton waste soaked in the mixture was used wherever necessary to give a continuous film of oil. Oil balls were used for some of the big drains.

Control of the River Cooum, Buckingham Canal and Otary Nulla:— Mosquito breeding is not un-common along the edges of the Cooum river and Buckingham Canal and in Otary Nulla and accounts for the nuisance in the localities concerned. The present oiling staff is too inadequate to attend to these places systematically. Sufficient number of gangs are therefore required to keep the situation under control.

*Control of Lowlands:—*In addition to 9 ponds reclaimed during the year, 4 pits and 22 lowlying lands were reclaimed including those in DeMellows Road, Peoples' Park, portions of the Perambur tank, lands near Kodambakam High Road and near Chetpet. The Malaria lorry with a gang of 12 coolies was employed in the reclamation of the Choolai Burial Ground in DeMellows Road and Perambur Tank during the year.

*Control of Mosquito Breeding in Private Premises:—*Due to inadequacy of the staff a regular inspection of all houses and compounds for detection and destruction of breeding places of mosquitoes was not possible. The Medical Officer investigated into all complaints received about mosquito nuisance and took immediate steps to mitigate it. The breeding of mosquitoes inside private premises was brought to the notice of the persons concerned and the work of destruction was carried out in their presence. Proper instructions were given to them to prevent such happenings in future. It is regrettable to note that in several instances the instructions issued to them in person or through correspondence were not carried out systematically, and in such instances breeding re-appeared and the nuisance consequently continued to exist.

*Mosquito Survey:—*A special feature of this report is the survey of anopheles mosquitoes in the City carried out during the year. Spleen survey and examination of blood slides were done in a selected area and the report on these is given elsewhere. The previous survey was conducted prior to 1921 by a special staff which was disbanded about the end of 1921. Since then there has been no further survey. The present staff was organised in 1927 and continued to carry out only anti-mosquito measures.

Anopheles breeding in tanks, ponds, wells, cisterns, the river Cooum and the Buckingham Canal, came under survey. The larvae were collected during inspections and bred out for adult identification. Larval identification was not undertaken for want of time and assistance.

(a) *Survey of tanks and ponds:—*Anopheles Fuliginosus and Anopheles Culicifacies were found to breed in some of the tanks in the divisions of Tondiarpet, Korukupet, Perambur, Vepery, Kilpauk, Nungambakkam, Royapettah and Mylapore. Of these, A. Culicifacies is reckoned to be the most dangerous malaria-carrier. Anopheles Minimus var Varuna considered as a probable dangerous malaria-carrier was found to breed in some tanks in Perambur, Kilpauk, Nungambakkam and Royapettah divisions. There were also other anopheline species prevalent in the City but of no malarial importance.

The prevalence of anopheles including malaria-carrying species demands specific measures to be adopted. The dusting of Paris green mixture—the best known anopheline larvicide—should be widely used for all tanks, ponds, irrigation fields, etc. The present method of clearing weeds, moss, and rank vegetation does not satisfactorily help to control the breeding as the tanks revert to their original condition a few days after cleaning. Nor is it possible to make the owners clean them once a week or at short intervals. Breeding starts as soon as weeds or moss begin to grow in them. A separate gang for dusting of Paris green is, therefore, suggested, so that the anopheles population may be kept under control.

(b) *Survey of Wells:—*As stated elsewhere 857 wells were found to breed anopheles. With the facilities available, it was found possible to identify the larvae from 506 wells as Anopheles Stephensi. It is very probable that the larvae found breeding in the remaining wells or at least in a great majority of them were those of the A. Stephensi. This species breeds too largely in wells

and is considered to be the most dangerous malaria-carrier. All unused and consequently neglected domestic wells form the favourite resort of this mosquito. *A. Stephensi* was found to breed in the wells of all the municipal divisions particularly Korukupet, Kothwal Bazar, Mofuskhan, Seven Wells, Sowcarpet, Pedunaikenpet, Trevelyan Basin, Park Town, Choolai and Purasawalkam. The existence of this species should be viewed with anxiety for the prevalence and spread of malaria.

The need for inspection and introduction of larvicidal fish into wells at least once in 3 months has been emphasised elsewhere. The suggestion to fill up wells or cover them with cuddapah slabs is generally objected to by the citizens on religious grounds. The control of general mosquito nuisance including malaria demands therefore fish introduction at shorter intervals as explained already.

(c) *Survey of the Cooum River and the Buckingham Canal*.—During the year under report the Medical Officer inspected the banks of the river and the canal and found the larvae of both *Culex* and *Anopheles* mosquitoes breeding along the weedy margins. *Anopheles Subpictus* (Rossi) was the only species prevalent in the entire extent of the river and the canal. The foul condition is responsible for the breeding of *Culex* and Rossi group of *Anopheles* and does not favour breeding of other anopheline species. But *A. Fuliginosus* was noted to breed in the portion of the river to the west of the Munro Bridge where the water is fairly clean.

Since the river and the canal are responsible for mosquito nuisance in the localities through which they pass, a separate gang for each is necessary to clean and oil the edges regularly.

Blood Slides.—During the year 92 blood slides were examined microscopically for malarial parasites. 50 or 54 per cent of the slides were positive. As the Seven Wells and Peddunaikenpet divisions showed a large number of wells breeding *A. Stephensi*, blood films were called for from the Medical Officer in charge of the Corporation Mint Street Dispensary to which the residents of the divisions referred to resorted for treatment. 74 blood films of the total examined were received from this dispensary and 43 or 58 per cent of them were positive. Examination of blood slides from all dispensaries could not be undertaken for want of a separate staff. In addition to these slides, the smears taken from children during the spleen survey were also examined and the results are given below.

Spleen Survey.—During the year 425 children in Seven Wells division (10th division) were examined by the Medical Officer for spleen enlargement. Blood smears were taken from them at the same time. 90 or 21 per cent of the children showed enlarged spleen. 23 or 5.4 per cent of them had malarial parasites in their peripheral blood. The children included those living in dwelling houses in 1st Narayanan Street, Theagaroya Pillai Street, and Veerangavadu Murugesu Mudali Street, and also those reading in the three Corporation Schools in Seven Wells division. The details of the survey are given below according to the different places at which the survey was conducted.

	No. of children examined.	No. of children with enlarged spleen.	Percentage to total.	No. of children with parasites.	Percentage to total.
House to house visits ...	89	18	20	3	3.4
Corporation Boys' School, Seven Wells Street ...	97	24	25	10	10.3
Do. Malayappen Street...	151	20	13	6	3.9
Do. Somasundara Mu- daly Street ...	88	28	32	4	4.5
Total ...	425	90	21	23	5.4

The cost of quinine purchased during 1933 for use in Corporation Hospitals and Dispensaries was Rs. 3,600.

Conclusion :—Mosquitoes are beyond doubt a grave menace to public health. The diseases borne by them such as malaria and filariasis are having a baneful influence on the health of the City. So long as there is the risk of infection these diseases are certain to make headway and devitalise the citizens rendering them susceptible to other diseases. The risk should be removed by adequate anti-mosquito measures. The present staff is not sufficient for the entire City and needs reorganisation in the light of facts and information given in this report. The staff was organised in 1927 and it cannot be expected to cope with the needs of the City as they stand at present. An investigation staff is necessary to find out the extent of malaria incidence in all its aspects in the different parts of the City. All tanks and ponds should be Paris-greened; all wells should be inspected and restocked with fish once in 3 months instead of once in 10 to 11 months; and the Cooum river, the Buckingham Canal and the Otary Nulla should be cleaned and oiled regularly. An adequate staff is, therefore, necessary to control the general mosquito nuisance and malaria in the City.

Report on the Medical Inspection of Corporation Schools for the year 1933-1934.

Staff.—As in previous years the work of medical inspection was carried on by four Medical Inspectors and two Medical Inspectresses.

Findings of Medical Inspection.—There has been an increase in the strength of all the schools during the year under report. The total number on the rolls was 20587 boys and 12706 girls. 18363 boys and 10215 girls were subjected to medical inspection as against 17297 boys and 10209 girls in the previous year. The average attendance in all the schools was 16605 in the case of boys and 9823 in the case of girls. The percentage of boys examined to the total number on rolls was 89.20 in boys and 80.40 in girls, the corresponding percentages for the previous year being 88.55 and 81.29 respectively. Due to the inadequacy of staff, girls reading in boys schools could not be examined.

Out of the total number examined 11220 boys (61.10 per cent) and 4926 girls (48.22 per cent) were defective and required treatment. The percentage of defectives for the previous year was 58.91 in boys and 53.02 in girls. The slight increase in the percentage of defectives in boys was mainly contributed by figures under malnutrition and infectious diseases. A reduction was noticed in the incidence of the diseases of the nose and throat. A very large number of entrants had enlarged spleen due to Malaria. The anti-malaria staff concentrated its attention in and around schools where the incidence was high.

Cleanliness, Condition of the skin, of scalp, body, and nails.—Personal cleanliness was wanting in 2504 boys (13.64 per cent) 528 girls (5.17 per cent) as against 14.31 per cent and 5.90 per cent respectively in the previous year. Wherever bath rooms were available in the schools the children made use of them. In other schools dirty children had their baths in the school taps during the recess hour. In schools where midday meals were distributed, the school staff was advised to insist on the children bathing before sitting for meals. Instructions in personal hygiene were also given to the staff and the children.

Malnutrition.—4301 boys (23.42 per cent) and 198 girls (1.94 per cent) were ill-nourished, the percentages for the previous year being 22.69 and 3.19 respectively. There has been a rise in the percentage this year which is mainly due to entrants of the previous year whose general condition was bad. Most of the children reading in the Corporation elementary schools are drawn from the poorer classes and improvement in general health will mainly depend upon the success of the measures taken to improve the economic condition and to provide them with better housing accommodation and food. It is only then that permanent benefit can be expected. Cod liver oil was stocked in large quantities in one of the dispensaries and was given to undernourished children.

Teeth and Mouth.—2962 boys (16.13 per cent) and 1143 girls (11.19 per cent) had complaints pertaining to the teeth and the mouth as against 16.73 per cent and 12.81 per cent respectively in the previous year. Stomatitis formed the major portion of defects (1980). On careful investigation into the habits and diet of these children it was found that their food mainly consisted of starch (boiled rice) with an excess of spices and without any other nutritious elements such as proteins or vitamins. Nourishing articles of food such as milk, buttermilk, ghee, fruits etc., were absent in their daily diet. The Medical Inspectors pointed out to the parents this deficiency and persuaded them to improve the dietary of their children.

Dental caries was found in 1298 children. Where the decay was not advanced, treatment at Corporation dispensaries was resorted to. In others, cleaning and filling of caries teeth were advised. In badly decayed cases extraction of the offending teeth was suggested. 828 children had tartar teeth. Scaling of teeth was advised to such of them as had a very bad collection of tartar.

Nose and Throat.—Enlarged tonsils and cervical and submaxillary glands formed the bulk of the defects under this head. 4703 boys (25.61 per cent) and 2125 girls (20.80 per cent) had diseases and defects pertaining to the nose and throat. The corresponding percentages for the previous year were 27.57 and 22.75 respectively. 5838 children had enlargement of tonsils while 996 had enlarged glands of the neck. 925 children were advised Tonsillectomy as the condition was associated with other complications. In other cases conservative treatment was given at the Corporation dispensaries. 89 children having adenoids and 8 having nasal polypus were advised operative treatment at Government General Hospital by the specialist.

Eye Diseases.—454 boys (2.47 per cent) and 430 girls (4.21 per cent) had defects in the eyes, as against 2.57 per cent and 3.74 per cent respectively in the previous year. Mostly they were conjunctivitis or xerosis brought about by poor diet. 205 children had xerosis of the eyes and 180 had conjunctivitis. All cases of sore eyes were excluded temporarily from the schools to prevent infection. The xerotic children were advised change of diet and use of Cod liver oil. The details of defects are shown in the statement.

Vision.—224 boys (1.22 per cent) and 35 girls (0.34 per cent) had defective vision. The percentage defective under this head in the previous year was 1.30 among boys and 0.12 among girls. 104 children were advised to wear glasses while 155 were advised to take Cod liver oil.

Ear Disease.—305 boys (1.66 per cent) and 172 girls (1.68 per cent) had Otitis and Otorrhoea as against 1.46 per cent and 1.83 per cent respectively in the previous year. Except simple cases of Otitis all others were advised treatment at the Ear, Nose and Throat Section, Government General Hospital.

Hearing.—7 boys (0.04 per cent) and 8 girls (0.08 per cent) as against 0.06 and 0.11 per cent in the previous year, were short of hearing. Treatment by the specialist was suggested and the school staff was advised to give them seats close to the teachers.

Speech.—51 boys (0.28 per cent) and 11 girls (0.11 per cent) had defects of speech. Mostly they were either stammerers or lispers. The percentages for the previous year were 0.38 among boys and 0.13 among girls.

Circulatory System.—199 boys (1.08 per cent) and 32 girls (0.31 per cent) had defects of heart and anaemia as against 1.07 per cent and 0.39 per cent respectively in the previous year. Organic disease of the heart was found in 47 children. In 69, functional disorders mostly due to Hookworm were noticed. 115 children were anaemic due to Malaria and Hookworm. They were treated at the local dispensaries. In cases of organic defects of heart bordering on decompensation, institutional treatment was suggested.

Tuberculosis.—Minute examination of the children for detecting Tuberculosis in its incipient stages revealed 23 boys (0.13 per cent) and 20 girls (0.20 per cent) showing early signs of the disease. The corresponding percentages for the previous year were 0.10 and 0.29 respectively. In seven children requiring only general treatment as good food and Cod liver oil, prescriptions were

given for treatment at the Corporation dispensaries, while other cases were referred to the Tuberculosis Institute. By way of health education, the Medical Inspectors arranged talks on the subject with the parents who were instructed regarding nature of the disease and the necessity for early and proper action on their part. Out of the 43 children affected, the lungs were the seat of the disease in 35 and in 5 cases the glands were involved. Two children were having tubercular infection of the skin and they were advised X-ray treatment at the Government General Hospital. One child had tubercular disease of the hip joint and was referred to the Government General Hospital.

Respiratory Diseases.—565 boys (0.38 per cent) and 107 girls (1.05 per cent) were having ailment of the respiratory system. The percentage of incidence in the previous year was 3.13 among boys and 3.18 among girls. 647 children had Bronchitis and 25 had Bronchial Asthma. Suitable treatment was given at the local dispensaries.

Abdominal organs.—446 boys (2.43 per cent) and 30 girls (0.29 per cent) were defective under this head as against 1.64 per cent and 0.67 per cent respectively in the previous year. 274 children had enlarged spleen due to malaria compared with 96 in the previous year. This increase in the number of children with spleen was mainly among the entrants. Out of 274 affected 179 were entrants. 245 of these children were in the north range while only 29 were in the south. The parents of all these were met and advised to take their children to the dispensaries for treatment. The school staff was supplied with a list of these children and was requested to pay special attention to them to ensure regular treatment. The Medical Inspectors in addition examined these children at the re-inspections. The results of treatment given are shown in the following up statement. Children having hernia and hydrocele were advised operative treatment whilst others, having minor complaints of the stomach or bowels, were treated at the local dispensaries.

Bones and Joints.—540 boys (2.94 per cent) and 29 girls (0.28 per cent) were having affections of the bones and joints. The percentages for the previous year were 28.6 among the boys and 0.41 among girls. Most of the defects were deformities of chest or other bones (557) due to a previous attack of rickets in childhood.

Nervous and Psychic systems.—28 boys (0.15 per cent) and 2 girls (0.02 per cent) were having palsies and functional disorders of the nervous system as against 0.16 per cent and 0.08 per cent respectively in the previous year. 6 children had infantile palsies while the rest were functional disorders as incontinence of urine or neurosis. Suitable treatment was suggested to them.

Infectious and Contagious Diseases.—2514 boys (13.69 per cent) and 676 girls (6.62 per cent) had infectious diseases including skin diseases as against a percentage of 12.91 and 7.41 respectively in the previous year. Most of the defects were scabies (2297). Next to this tenia and fungi were common. 328 children had these conditions. 324 children had leprosy in early stage. A detailed report on this is given elsewhere. Isolation of the children having infectious skin complaints was arranged with the school staff and they were treated at the dispensaries.

Other diseases and defects.—1150 boys (6.26 per cent) and 345 girls (3.38 per cent) had defects or diseases not included in other items as against 8.79 per cent and 5.95 per cent in the previous year. The chief defects under this head were worms and minor injuries. 656 had worms and 398 had minor injuries. 164 children had phimosis and were advised circumcision.

Deformities.—58 boys (0.32 per cent) and 16 girls (0.16 per cent) had deformities compared with 0.42 per cent and 0.21 per cent respectively in the previous year. Details of defects noticed under this head are shown in the detailed statement.

Number without marks of vaccination.—A careful search among the children for vaccination marks revealed 70 boys (0.38 per cent) and 18 girls (0.18 per cent) not having clear marks. The percentages for the previous year were 0.42 among boys and 0.58 among girls. They were subsequently vaccinated.

Medical Treatment.—17534 children were advised treatment at the following institutions:—

	Boys.	Girls
1. Children sent to Corporation dispensaries ...	11152	3411
2. Children referred to		
(a) Government General Hospital ...	936	1168
(b) Ophthalmic Hospital ...	169	292
(c) Tuberculosis Institute ...	18	19
(d) Skin department of Govt. Hospitals, Corporation and other skin clinics ...	278	90
(e) Number admitted in Thirumani leper settlement ...	1	...
Total ...	12554	4980

Leprosy.—A careful survey of all the school children was made for detection of leprosy in its early stages. Early detection and treatment, systematic following up, education and propaganda by lectures and talks in the schools and visits to the homes of the affected children to detect the sources of infection formed the main features of the anti-leprosy work done in the schools this year. Early in the year arrangements were made with the Government General Hospital Skin Department for the examination and treatment of all the suspicious children by the specialist. They were taken in batches once a week to the hospital where they were examined and treated. In many cases, the parents also were present at the hospital. In addition to this, whenever the Corporation Honorary Medical Officer visited a dispensary near a school, children were taken there for examination. In certain cases the officer visited the schools where the affected children were examined by him.

During the year under report 324 children (1·13 per cent.) were having Hansen infection (Leprosy). 2 Children had the disease in the infectious stage. One of them was removed from the school and was undergoing treatment at the Choolai Clinic. The other boy from the Corporation School, Bazaar Road, Mylapore, was admitted into the Thirumani Leper Hospital, on the advice of the Medical Inspector. The other cases were non-infectious. The disease was found to be more common among the boys than among girls.

The distribution according to sex is as follows:—

	No. Defective.	Percentage to the total examined.	Percentage to the total of leprosy cases detected.
Boys ...	279	1·52	86·11
Girls ...	45	0·44	13·89
Total ...	324	1·13	100·00

From the above statement it can be seen that leprosy is prevalent more amongst boys than girls, the percentage of incidence being 86·11 in the former and 13·89 in the latter. These figures are in accordance with those obtained by Sir Leonard Rogers on a leper census of India, where he found that, of the total number of cases enumerated, 74 per cent. was in males and 26 per cent. in females. The parents of these children have been met and their family history enquired into thoroughly to investigate the sources of infection. The Medical Inspectors visited 276 homes of these pupils and detected 41 other cases, either parents, relatives of the children, or tenants living in the same house suffering from the disease. They were persuaded to attend the nearest skin clinic for treatment. Pamphlets on the subject were distributed to them. During the re-inspections of the schools the treatment given to these children was carefully followed up.

On the whole 274 children (84·57 per cent.) underwent treatment regularly at one or other of the skin clinics in the City. In 54 of these, there was slight improvement, sensation in the affected parts having partially returned while the rest had to continue treatment. The remaining 50 children did not

attend the dispensary regularly, though the parents had consented to do so. The difficulties encountered in this work were many. It was generally found difficult to convince the parents of the necessity for a prolonged course of treatment. The economic condition of the parents in nine out of ten was such that they could ill afford the expense of taking the patients regularly to the clinic. In some cases they could not spare the time as their employment demanded their attendance at the workspot throughout the day. They had to risk the loss of employment by paying the required attention to the needs of their children daily. Instances were also not wanting in which the parents objected strongly to their children being treated at the Clinics where advanced cases of leprosy with nodules on the face and deformities were treated and withdrew their children immediately.

Reinspections and Following-up work:—Special attention was directed to the following-up work during this year, and all the children having leprosy were kept under continuous observation. The details of work done in regard to this are shown separately. During the year under report 290 re-visits to schools were paid in addition to the routine inspections and 15165 re-examinations of children conducted. The details of results are shown separately in the form of a statement a summary of which is given below:—

Malnutrition:—285 children regained normal health after treatment. 2246 improved in weight as a result of treatment. 1202 children continued treatment as they did not show any improvement.

Teeth and Mouth:—4 children had their teeth cleaned at the Government General Hospital Dental Section. 34 had their caries teeth extracted, 568 children, who had stomatitis, were cured after treatment at the local dispensaries. In 444 children, the condition was improved while 599 had to continue treatment.

Enlarged Tonsils:—133 children underwent Tonsillectomy operation after medical advice and continued cod liver oil for improving their general health. 451 children who continued conservative treatment for Tonsils, obtained relief. In 1453, improvement was perceptible after long continued treatment. 1393 children continued treatment as they failed to show any improvement. A child, having nasal polypus, was operated on after medical advice.

Defective vision:—8 children had eyes tested for defective vision and wore glasses. 81 having the defect in a minor degree took cod liver oil as a result of which their vision improved. 73 children continued to take the oil as they did not show improvement.

Ear Disease:—179 children having Otitis and Otorrhoea underwent treatment at Corporation dispensaries and were cured. In 80 cases having similar complaints there was improvement after treatment.

Circulatory System.—54 anaemic children improved in health rapidly after treatment, while 34 continued treatment.

Tuberculosis.—In five children who had the disease in the early stages, further progress of the disease was arrested and they regained normal health. 7 continued treatment and their condition was found improved. 30 were still under treatment at the end of the year as the improvement in them was not rapid. One 'entrant' girl was detected with the disease in an acute condition and on the advice of the Medical Inspectress the girl was admitted at Temple Gardens, but expired after a short period in spite of treatment.

Respiratory Affections.—310 children who had Bronchitis were cured after treatment at the local dispensaries. In 70 children there was improvement while in the remaining 64, treatment had to be continued as the ailment was of a chronic nature.

Abdominal Organs.—Out of 274 children who had enlarged spleen, 51 were cured, in 92 the spleen was reduced in size while 118 continued treatment. 13 children could not be traced after the routine inspection as they were absent on all the re-inspection days. The Medical Officer (Malaria) also visited certain schools affected and directed his anti-malarial work to and around the schools affected. A case of jaundice was admitted into the Government General Hospital as an inpatient where it was cured. Three boys with inguinal hernia

underwent operation for radical cure. A case of nephritis was under treatment at General Hospital as inpatient and later left the institution cured.

Infectious and Contagious Diseases.—1466 children with scabies were treated at the local dispensaries and cured. 430 improved after treatment while 356 continued treatment as they were having chronic types of the disease. Children who had scabies and other infectious conditions were isolated from the healthy. They were also made to bathe daily and wash their clothes. 58 obtained relief for eczema at the local dispensaries. 12 children who had clinical signs of malaria were cured after treatment while in only one, treatment was advised to be continued as the child had not completely recovered.

The results of the following up done in regard to leprosy have already been explained.

Other diseases and defects.—17 children who had congenital phimosis underwent circumcision operation after medical advice.

Co-operation of Parents.—During the year under report 8365 parents were met at the school premises and given medical advice regarding the treatment of their children. The parents of most of the children who had defects of a serious nature were met and advised. In certain cases the parents themselves had ailments for which treatment was suggested.

Co-operation of Teachers.—The school staff continued its work of maintaining the list of defective children and the following up of the treatment given to the children. In addition to this a special list of children having leprosy was maintained in each school and they were followed up very carefully. In refractory cases the parents were met frequently with a view to persuade them and thereby assure regular treatment. The Medical Inspectors, in some cases, were helped by the teachers in tracing out the residences of children having leprosy when house visits were made to detect the possible sources of infection.

School Sanitation.—Particular attention was paid to the sanitary conditions of the schools by the Medical Inspection staff. 11 schools were considered as unfit for school purposes and 49 schools were found to possess very inadequate accommodation and were recommended minor repairs for the improvement of ventilation, latrine arrangements, etc

School Latrines.—Only forty five schools had flush-out latrines. Introduction of flush-out latrine was recommended for the remaining schools.

Water Supply.—All the schools have been provided with a sufficient number of taps for the supply of water. Schools in the 16th division especially the Perambur School suffered a great deal due to scarcity of water. This, however, appeared to be common in the division where the supply failed between 10 a.m. and 4 p.m.

Play Ground.—41 schools had no playground accommodation. In two schools children were taken to the model playground nearby.

School Equipment.—Every school had adequate furniture and equipment.

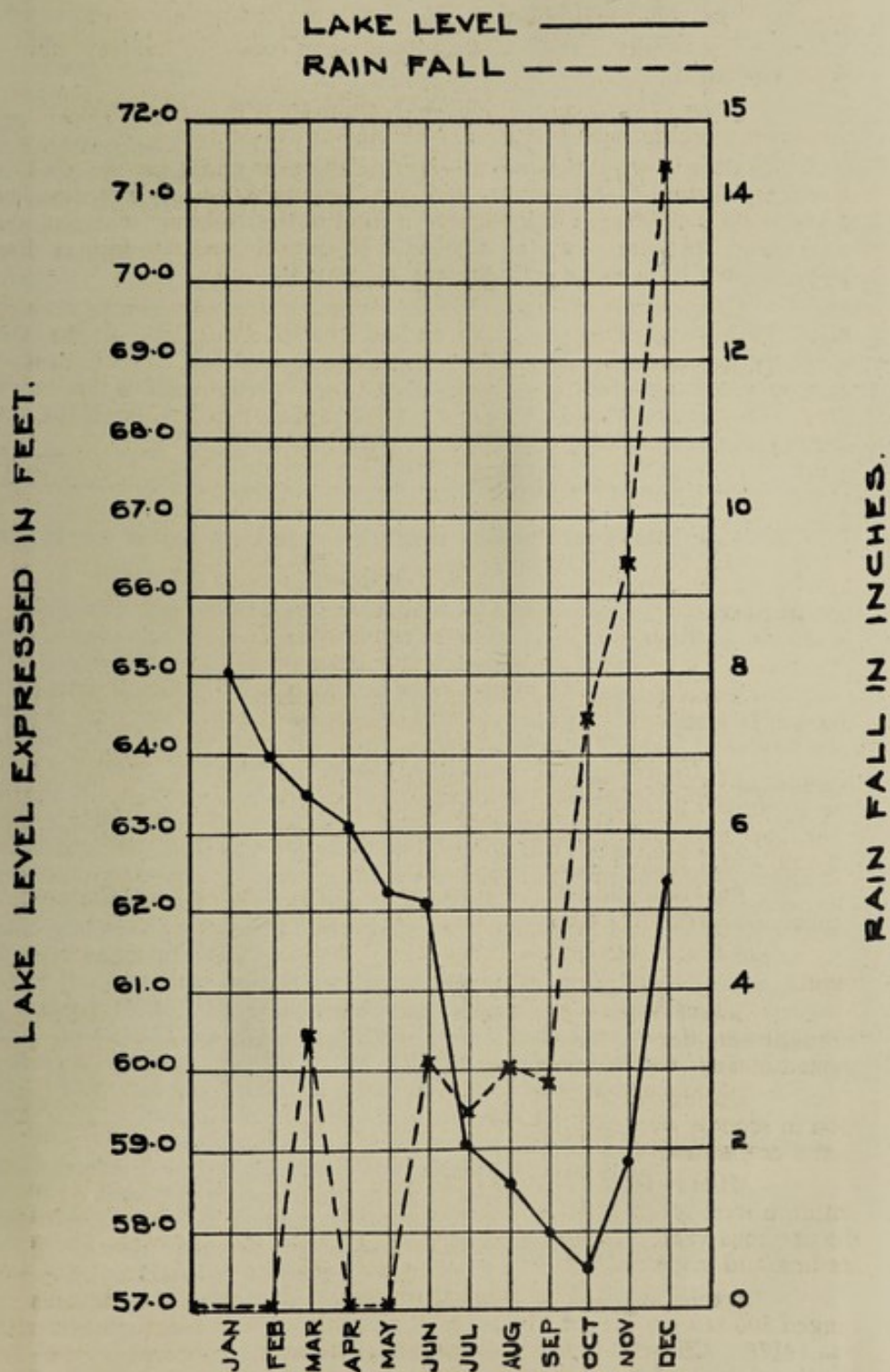
School Baths.—59 schools had bath rooms. Dirty children were brought here during the midday for baths and washing of clothing and they looked cleaner and brighter after this.

During the inspections this year, improvement, minor repairs or extension in schools were noticed in 12 schools. Six schools changed premises for better accommodation, ventilation, latrine arrangements, etc.

Midday Meals.—During the year under report 79 schools and 4200 children were given midday meals as against 78 schools and 4200 children in the previous year. The Medical Inspectors visited these schools at the time of feeding and inspected the sanitary arrangements made.

Propaganda.—The Medical Inspectors delivered 122 lectures and arranged 300 talks in the schools. The total attendance at these lectures and talks was 14176. Charts relating to school hygiene were exhibited in the divisional health exhibitions at Venkatarangam Pillai Street, Strahans Road, Perambur Barracks, and Lauders Gate Road, Kilpauk.

GRAPH 1
SHOWING THE RELATION BETWEEN
MONTHLY AVERAGE LAKE LEVEL
& RAIN FALL AT RED-HILLS LAKE 1933



THE UNIVERSITY OF CHICAGO
 DIVISION OF THE PHYSICAL SCIENCES
 DEPARTMENT OF CHEMISTRY
 LABORATORY OF PHYSICAL CHEMISTRY

REPORT OF THE
 PHYSICAL CHEMISTRY

FOR THE YEAR 1955

EDITED BY
 J. H. DILLON

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The details of propaganda work done are given below :—

No.	Subjects.	No. of lectures delivered.	No. of talks arranged.	Remarks.
1	Small-pox	8	23	
2	Cholera	15	29	
3	Tuberculosis	23	38	
4	Malaria	8	29	
5	Hookworm disease	4	5	
6	Leprosy	29	110	
7	Flies	1	3	
8	Personal Hygiene	15	37	
9	Ventilation & Housing	2	6	
10	Infectious diseases	1	...	
11	Mosquitoes	3	4	
12	Water-supply	...	2	
13	Worms	1	1	
14	Enlarged tonsils	1	5	
15	Dental caries	2	6	
16	Measles	2	...	
17	Cerebro-spinal Meningitis	1	...	
18	Other subjects	6	2	
		122	300	

Report of the Water Analyst for the year ending 31st December 1933.

General.

The year under report was conspicuous for the variety of the work turned out. Till last year the Water Analyst was confined to water analysis, but this year he had to do analysis of sewage and soil and to make bio-chemical studies of the river Cooum, Buckingham Canal, and some ponds. Sewage and soil analysis of Korukupet rubbish depot was undertaken to supply the necessary information to Dr. G. J. Fowler who has been asked by the Council to submit an estimate for a sewage purification plant (Activated Sludge Plant) for Madras. The results of the analyses are shown in Appendix A. A study of the pollution of the river Cooum and Buckingham Canal was undertaken to supply information regarding the present biological condition of the rivers to enable him to suggest remedial measures. These results are shown in Appendix B. Appendix C contains the results of an investigation to improve the condition of Krishnappa Naick Tank which is a source of nuisance to the inhabitants of the locality due to the decay of algal growths.

For the first time during the course of twenty years the Director, King Institute, Guindy, wrote a very favourable report upon our water-supply. In his report dated 30-5-1933, he wrote that "for the first time for many years sulphuretted hydrogen was not present in the effluent of any of the filter beds during this season. This fact has helped to make post-filtration chlorination a practical proposition". The improvement referred to was due to,

(i) putting up a cascading arrangement followed by rough filtration of raw water before entering the raw water conduit at Red Hills Lake;

(ii) allowing three hours' sunning and sedimentation for raw water in the improvised reservoir formed in the filter beds 15, 16 and 17 (the filtering materials having been removed from them) and rough filtration again in bed 17 before reaching the filters at Kilpauk ;

(iii) maintaining a low depth of fine sand, i.e., 9 inches instead of the usual 2-3 feet in filter beds ;

(iv) working the filters at a semi-rapid rate, i.e., 12 vertical inches per hour ;

(v) watching the filters carefully for the production of H_2S (by suspending lead-acetate papers in the filtered water chambers) and stopping them as soon as the test papers became brown.

By adopting the above measures throughout the year and without adding copper-sulphate to the lake as in last year, filtered water which was supplied to the city was free from H_2S and the concomitant growths of sulphur bacteria, and therefore was chlorinatable. The yearly average dose of chlorine applied to filtered water was 0.72 ppm. The average daily consumption for the year was 21.11 million gallons.

The Analyst was awarded "the Sir William Wedderburn Prize" in Chemistry for 1933 by the University of Madras for his thesis "On the production of sulphuretted hydrogen in the slow sand filters of Madras", particulars of which have already appeared in the Health Officer's Annual Report for 1932.

Scientific.

Red Hills Lake and Sholavaram Lake :—It has been stated almost in all the reports of investigations carried out both by the Government and the Corporation since 1914, that the Red Hills Lake water contains "excessive organic matter of vegetable origin" and to this have been ascribed all our filtration difficulties such as the production of sulphuretted hydrogen and the consequent development of sulphur bacteria in the filtered water chambers, the short duration of life of filters, etc. Every year empirical measures are adopted to get over difficulties arising from it without studying its nature and formation in a scientific manner. Treating the lake with copper sulphate with the object of preventing hosts of algae that would form in it will be practically useless if the general conditions for the existence and multiplication of organisms—the free floating algae—are not known. Further, every lake is a microcosm, an independent system in itself, and therefore a knowledge of the natural life-processes in fresh water lakes of Europe or America about which a vast amount of literature has already accumulated will not help materially in solving the problem. Therefore, limnological studies, extending over several years, of Red Hills Lake and of its feeder lake—Sholavaram Lake—are of utmost importance from the stand-point of our water works practice, besides being of great scientific interest. These studies were started during the year under report and their results are furnished in the tabular statements (tables 1 to 4). Some of the important results are considered below.

Physical Conditions—Meteorological Data.

Hours of bright sunshine, Percentage of cloudy day and velocity of wind.

In December 1933, the wind was most powerful; maximum hours of bright sunshine was recorded in February; and August had the maximum percentage of cloudy day (Table 1).

Rainfall:—The total rainfall for Red Hills Lake was 46.40 inches as against 39.06 inches in last year (vide Table I a—Graph I). During the period of ten years (from 1924–1933) highest rainfall was recorded in 1930, being 75.29 inches, lowest in 1926 being 26.20 inches (vide Table Ia and Graphs III & V.) The yearly average rainfall for the ten year period comes to 46.72 inches which is in excess of the total rainfall for the year under report by 0.32 inch.

Sholavaram Lake:—This is situated at a distance of about two and a half miles from Red Hills Lake, and had 53.44 inches of rainfall for the year (Table I-c).

Temperature of the Lake Region.

Highest mean temperature was recorded in May and lowest in February (Table I-d).

Lake Level.

Red Hills Lake:—Maximum level was recorded in January 1933 and minimum in October for the year (Table I-b and Graph I). For the ten year period (1924–1933), the yearly average was found to be maximum in 1930, and minimum in 1927 (Table I-b and Graphs III and V).

Sholavaram Lake:—Maximum level was recorded in January and minimum in July for the year (Table I-c).

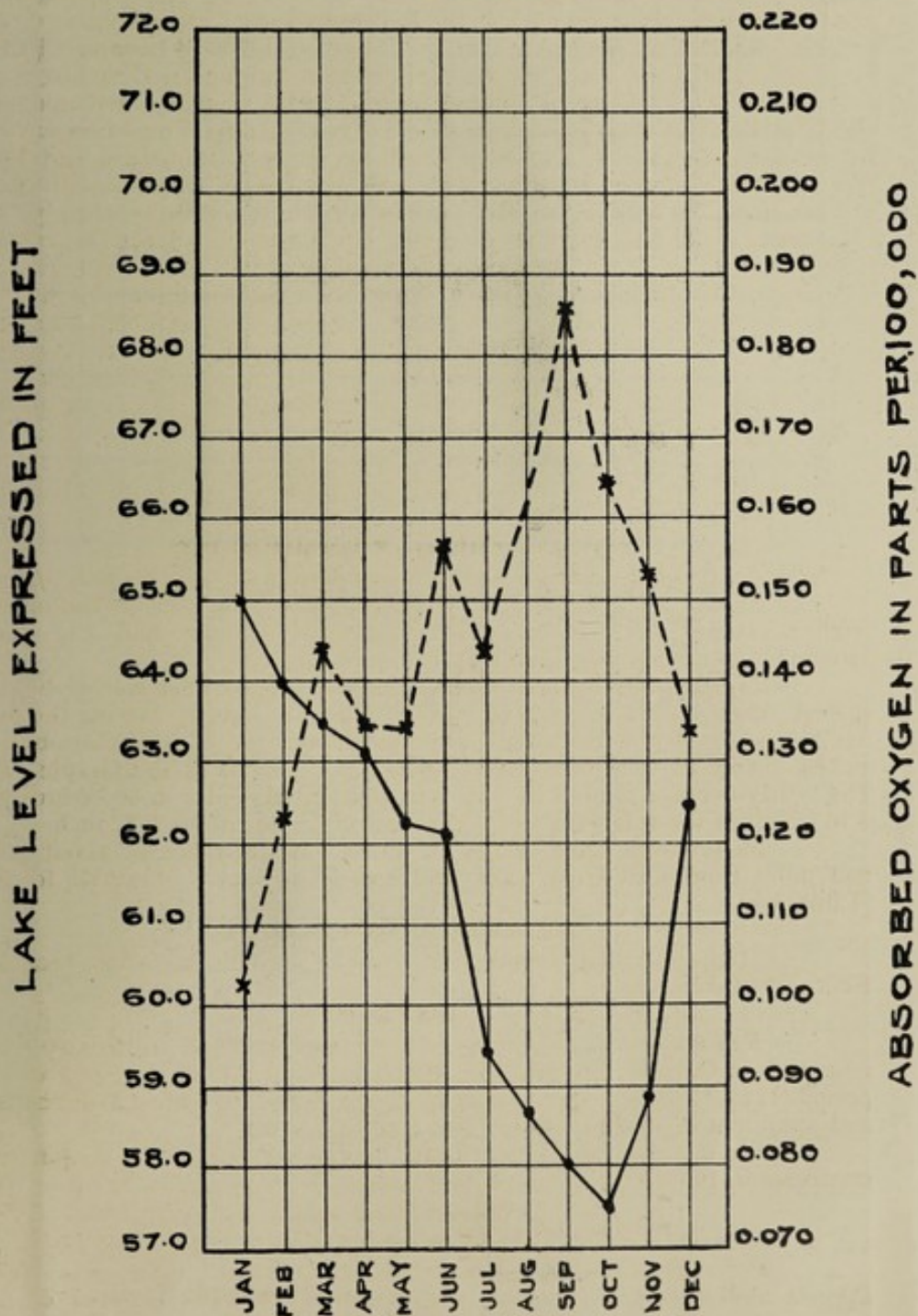
Chemical Conditions.

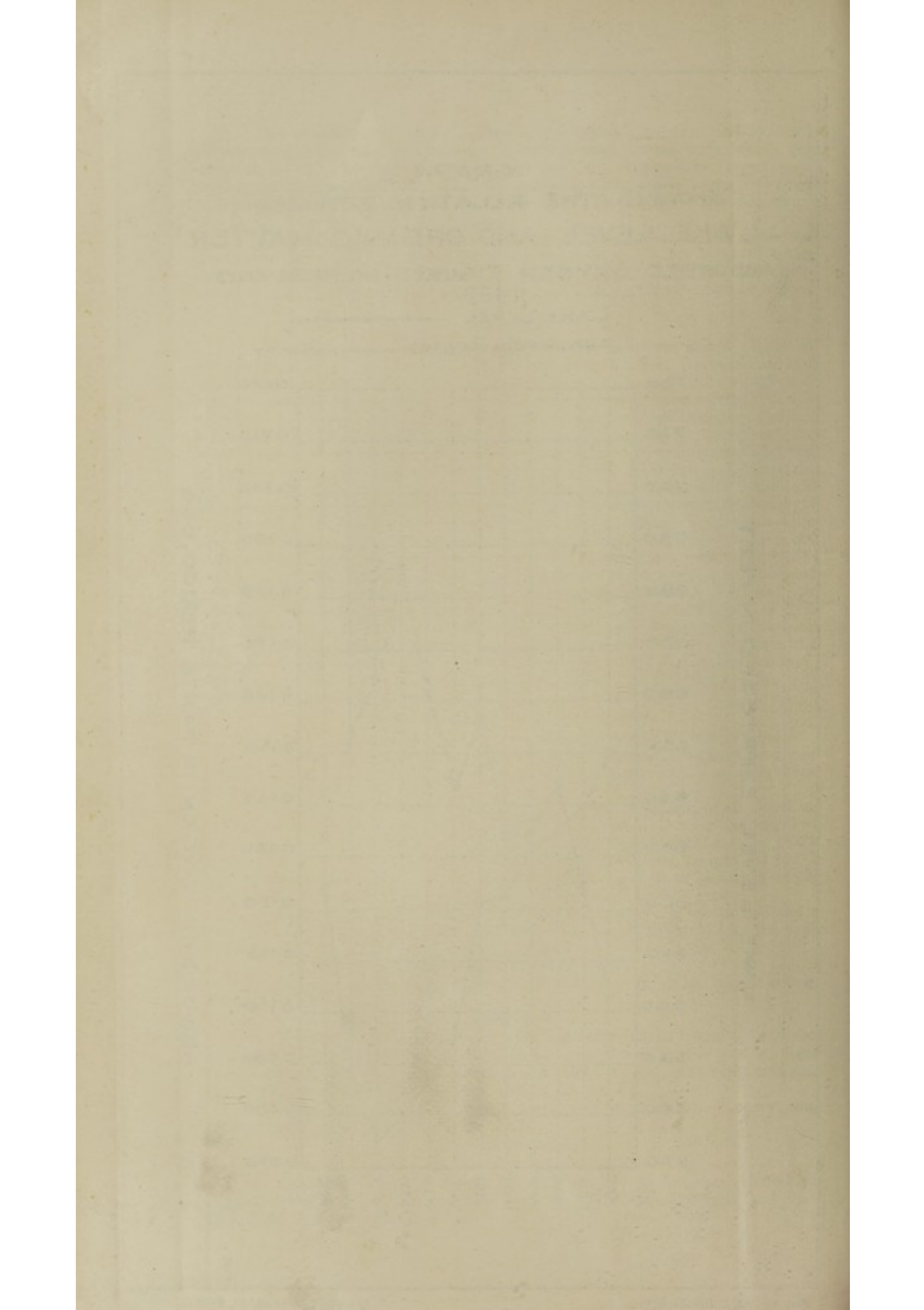
Dissolved gases.

Red Hills Lake:—In December the surface water was richest in oxygen, containing 5.41 c. c. per litre, while on 9-4-33, it was poorest and had only 4.64 c. c., per litre (Table II).

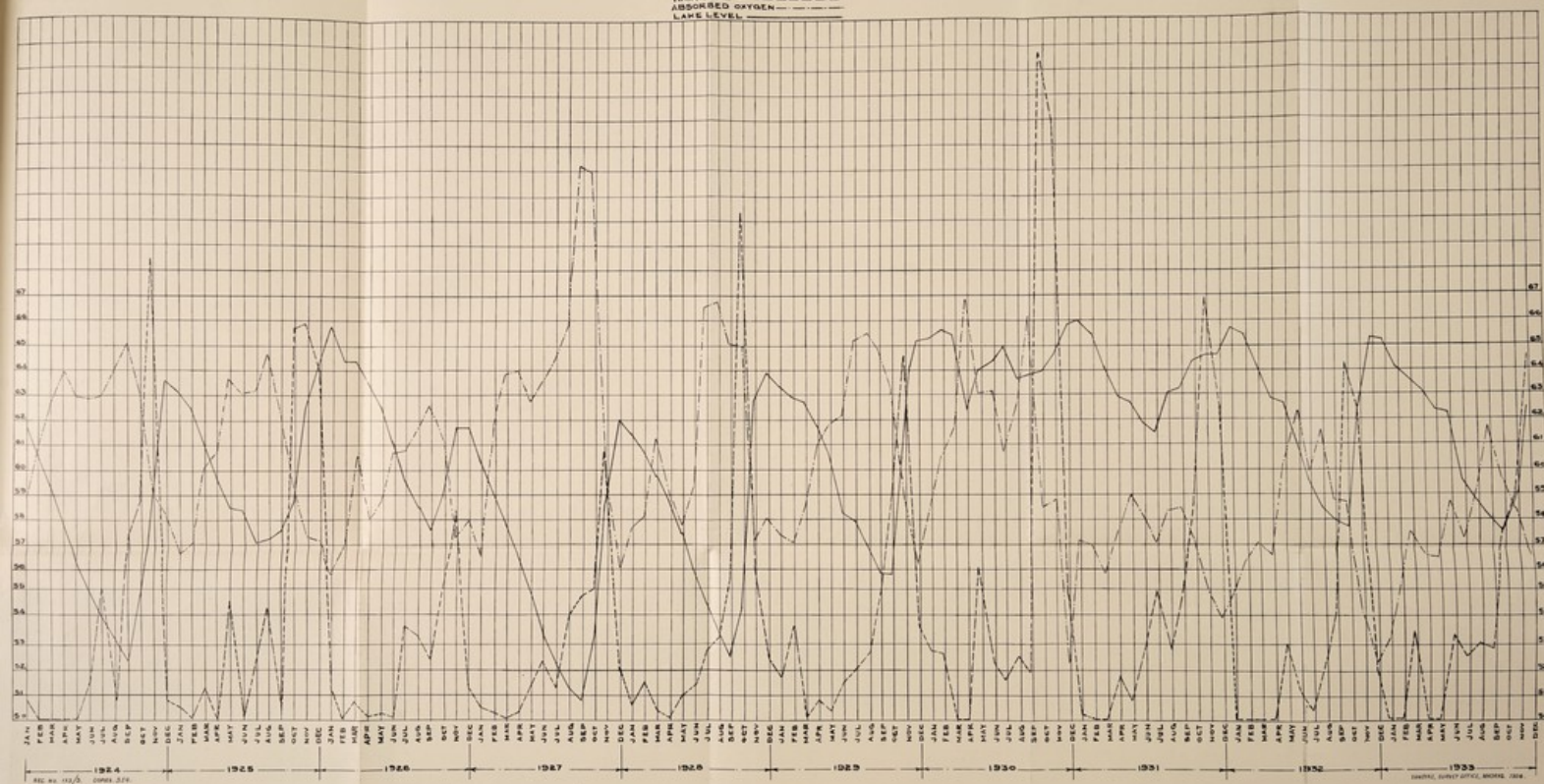
GRAPH 2 **SHOWING THE RELATION BETWEEN** **LAKE LEVEL AND ORGANIC MATTER** **(ABSORBED OXYGEN FIGURES) KILPAUK END** **1933**

LAKE LEVEL —————
 ABSORBED OXYGEN - - - - -





GRAPH NO 3 SHOWING THE SEASONAL VARIATIONS MONTH TO MONTH IN ORGANIC MATTER (ABSORBED OXYGEN),
LAKE LEVEL & RAIN FALL FROM 1924-1933.



Sholavaram Lake:—The oxygen content was highest in December, and lowest in October (data recorded only from July to December) (Table III).

Hydrogenion concentration (pH).

Red Hills Lake:—The pH values varied from 7.7 to 8.9. Maximum value was recorded on 30-4-33 and minimum on 23-12-33 (Table II).

Sholavaram Lake:—The variation was between 7.5 and 9.1. Maximum value was recorded on 9-4-33 and minimum on 23-12-33 (Table III).

Nitrogen Compounds.

Ammoniacal Nitrogen.

Red Hills Lake:—Except in March, April, May and December it was present in "traces" during other months (Table II).

Sholavaram Lake:—Except in February, March, April, July, August and October, in all other months it was present in "traces". (Table III).

Albuminoid Nitrogen.

Red Hills Lake:—The highest figure was in August and the lowest in December (Table II).

Sholavaram Lake:—Maximum figure was recorded in August and minimum in January and February (Table III).

Nitric Nitrogen and Nitrous Nitrogen.

In both the lakes, they were absent (Tables II and III).

Absorbed oxygen.

Red Hills Lake:—This was found to be highest in October and lowest in December (Table II).

Sholavaram Lake:—The maximum figure was in July and the minimum in February.

The latter contained more organic matter than the former (Table III).

Biological Conditions.

Bacteriological Results.

Red Hills Lake:—The bacteriological quality of the lake water was found to be varying from month to month. Lactose fermenters were present in 60 c. c. and upwards in the sample collected on 18-6-33, while they were found in 20 c. c., 10 c. c., 5 c. c., or 1 c. c., in the remaining months. The figure for total colonies per c. c., was highest in December and lowest on 9-4-33 (Table II).

Sholavaram Lake:—The lake water was of highest purity on 9-4-33 and for the other months the bacteriological quality of water was found to be varying. (Table III).

Raw Water at the Kilpauk End.

Physical conditions.

Temperature of surface water:—(recorded weekly for the second half year). The average monthly temperature was found to be maximum in August and minimum in December (Table IV).

Transparency:—(recorded from 21-4-33).—The raw water was most transparent in July and had the minimum degree of transparency in December (Table IV).

Chemical Conditions.

Dissolved Gases.

Dissolved oxygen:—This was estimated weekly for the second half-year. The raw water was richest in oxygen content in December and poorest in July (Table IV).

Free Carbonic acid (CO_2):—It was not detected throughout the latter half of the year except during the last week of December (Table IV).

Carbonic acid (calculated as CO_2) was at its maximum in October and minimum in December (Table IV).

Bicarbonic acid (calculated as HCO_3) was found to be maximum in September and minimum in June (Table IV).

Hydrogenion concentration (pH):—The pH values were found to increase gradually from 8.18 in January to a maximum of 8.7 in June after which there was a gradual fall to 8.22 in December (Table IV).

Combined chlorine:—This also showed a gradual increase from 4.27 parts per 100,000 in January to a maximum of 7.37 parts per 100,000 in August

after which the figure gradually decreased to 5.58 parts per 100,000 in December (Table IV).

Ammoniacal Nitrogen:—During the year this was found in "traces" almost in all the months. The yearly average showed a slight reduction over the corresponding result of last year (Table VI).

Albuminoid Nitrogen:—Maximum was reached in September and minimum in June. The yearly average showed a definite increase over the result of last year (Table VI).

Absorbed oxygen:—Organic matter as represented by this figure was highest in September and lowest in January (Graph II). Compared with last year the average for the year under report showed a slight reduction. For the ten year period (1924-1933) the yearly average was highest in 1927 and lowest in 1931 (Table VII, Graph V).

Biological Conditions.

Bacteriological results:—Raw water was of fair quality almost throughout the year. Lactose fermenters were present in 20 c. c. and upwards in 10.4% of the samples; in 10 c. c. and upwards in 19%; in 5 c. c. and upwards in 50.1%; in 1 c. c. and upwards in 20.5% of the samples analysed during the year. The average total colonies per c. c. was 840. (Table IX).

Coarse Filtered Raw Water.—Raw water before reaching the filters was forced through a layer of coarse filtering materials (without fine sand) placed right across its path in the form of a sloping bund in bed 13. The arrangement was effective in reducing a portion of the organic matter till September only, and thereafter the raw water deteriorated instead of improving in quality. The filtering materials had served their purpose and badly needed a thorough cleaning. Consequently the yearly average figures for organic matter as represented by "absorbed oxygen" showed an increase over the corresponding raw water figure (Table VI).

A similar deterioration in quality was noticed on the bacteriological side also (Table IX).

Filtrates from Beds:—Bacteriologically, the number of first class samples (L.F. in ± 60 c.c.) for the year was found to be about 18 per cent (Table IX). On the chemical side, the oxidisable organic matter and albuminoid nitrogen were reduced to about 20 per cent and 10.5 per cent respectively, while the ammoniacal nitrogen showed a distinct increase over the coarse filtered water (Table VI).

Test tap (Kilpauk Pumping Station):—Samples collected from this place were chlorinated filtered water samples. The dose of chlorine applied to the water is given in Table VIII.

The average percentage of first class samples (L.F. ± 60 c.c.) for the year was found to be only 71.9 (Table IX). This figure is rather low as one would expect to get nearly 100 per cent. The low figure is due to the fact that for the first few months of the year, the arrangement for mixing chlorine water with the filtered water was not quite satisfactory. It was perfected only towards the end of the year and consequently the percentage of first class samples also increased towards the close of the year. The average percentage reduction of total colonies per c.c. was about 46 (Table IX). On the chemical side a reduction of about 16 per cent in oxidisable organic matter (absorbed oxygen) was noticed over the corresponding figure for filtrates from beds, due primarily to chlorination. The figures for "Ammonias" did not show any improvement, (Table VI), but nearly resembled the averages for "filtrates from beds".

Distribution system:—The water as distributed did not show much difference on the chemical side, while there was a distinct falling off in quality on the bacteriological side over the test tap samples (Table IX).

Complaints from consumers:—Frequent complaints were received for the presence of animalcules in water. The places were inspected and remedial measures such as scouring the pipe lines of the locality, arranging complete circulation of water etc., were suggested to the Works Department for execution.

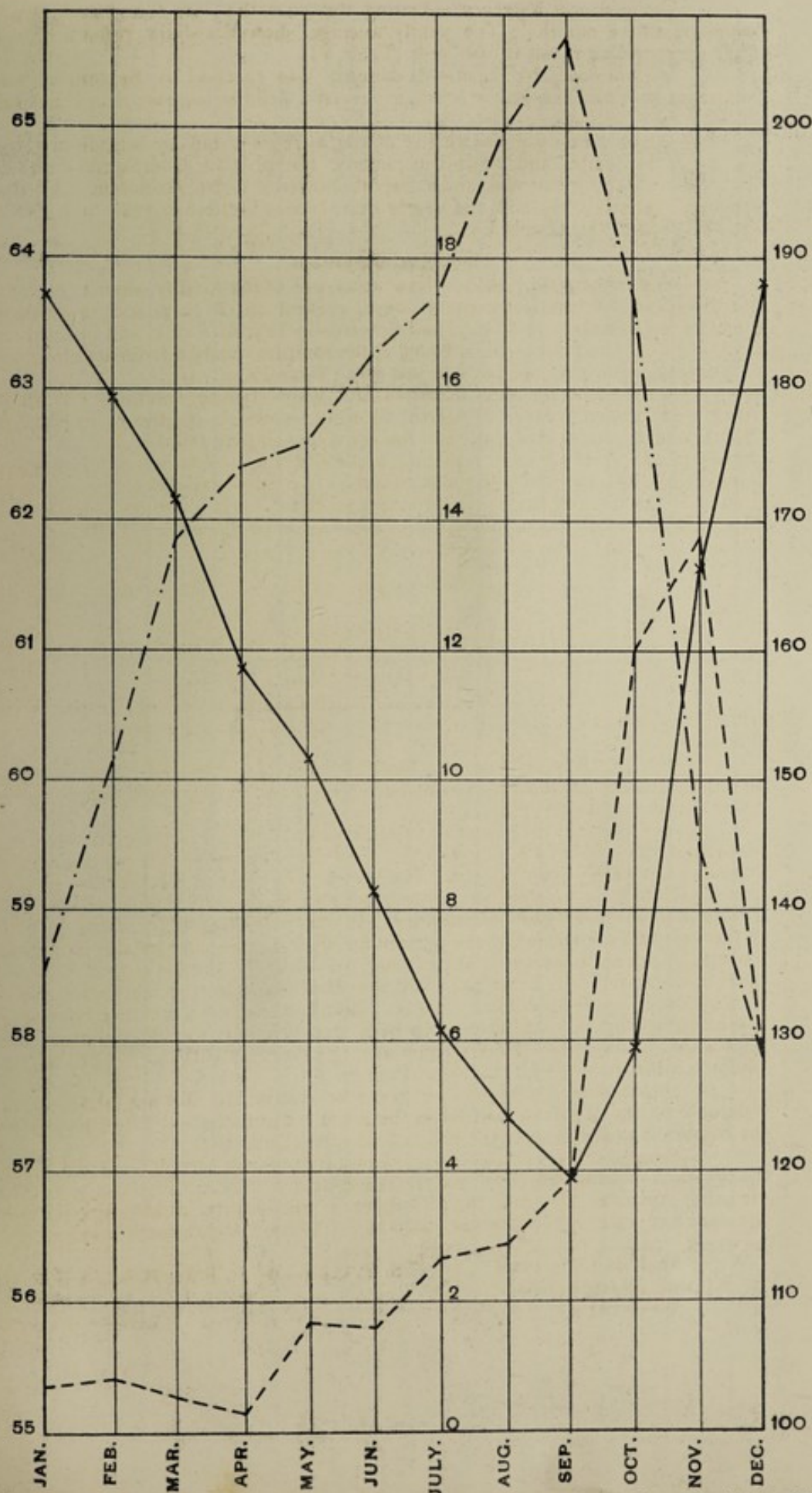
Water Analysis Laboratory,
Kilpauk, Water Works.
30-4-1934.

S. V. GANAPATI, B.A., M.Sc., A.I.C.,

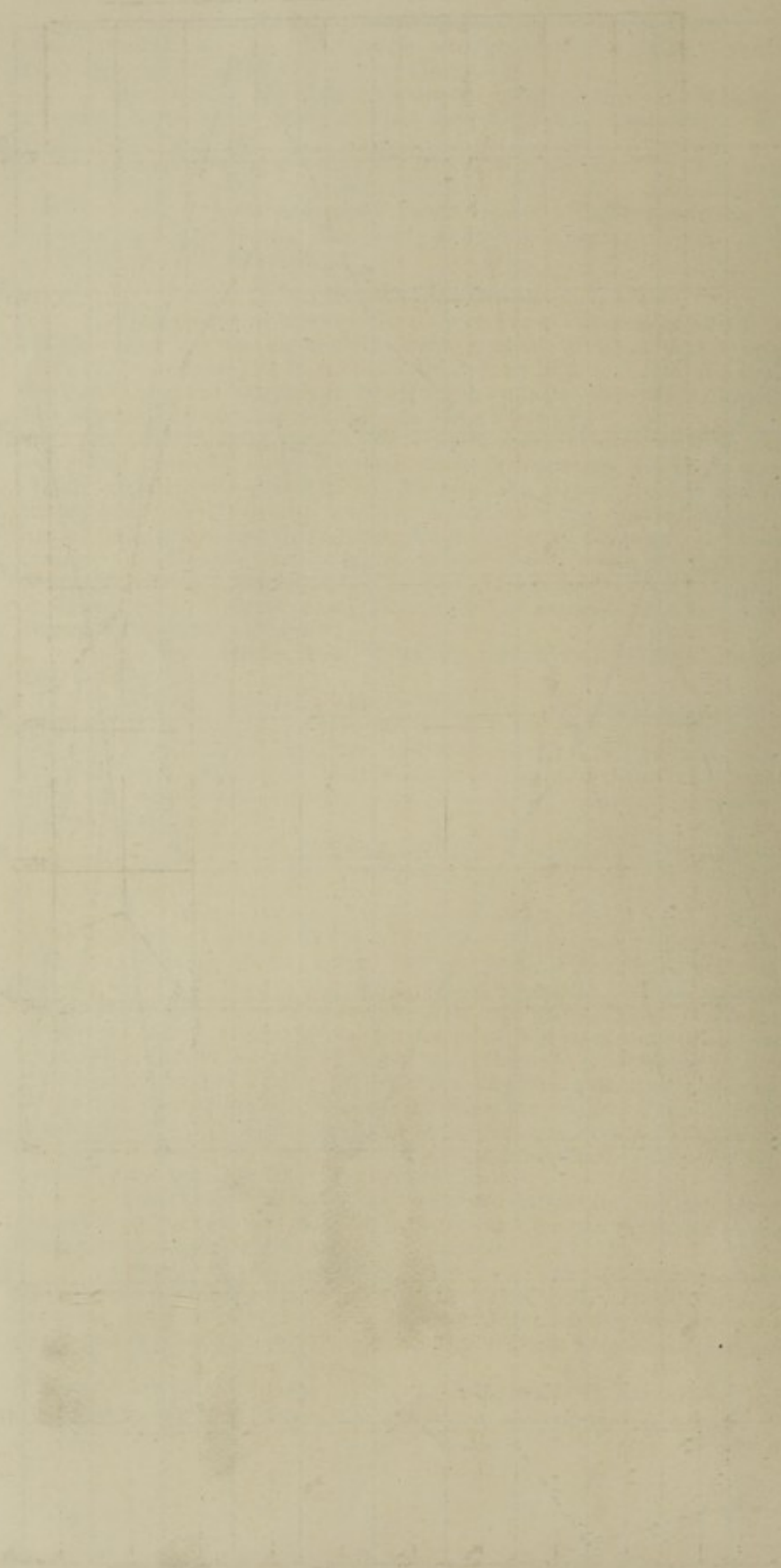
Water Analyst.

GRAPH No. 4
Showing the Seasonal variations in
Organic Matter (ABSORBED OXYGEN), Lake level
and Rain fall using month war Average from 1924-1933.

Rain fall — — — — —
 Organic Matter —
 Lake level —————

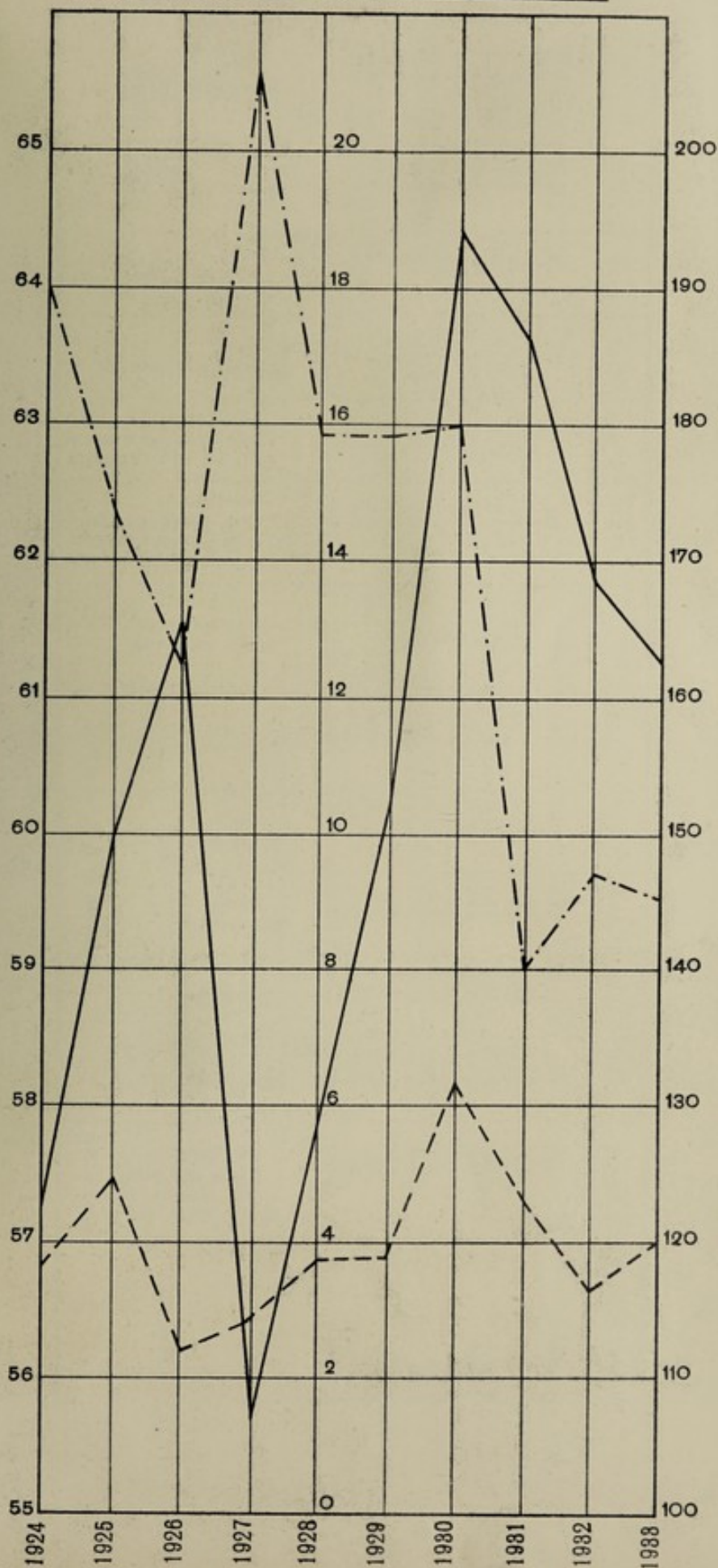


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GRAPH No. 5
Showing the Annual variations in Organic Matter
(ABSORBED OXYGEN) Lake level and Rain fall
from 1924-33

Organic Matter
Rain fall - - - - -
Lake level _____



VITAL STATISTICS (STATEMENTS).

Annual Form No. A :—Meteorological Data for 1933—Madras.

Latitude:—13° 4' North.

Longitude:—80° 15' East.

Months.	Barometer.	Reading of Thermometer.						Difference between dew point temperature and Mean air temperature.	Degree of humidity complete Saturation being 100.	Prevailing direction of wind.	Number of days on which rain fell.	Rainfall.	
		Mean daily reading reduced to 32° F Sea level and gravity.	Dry.		Dew point.		Mean Maximum Solar radiation.						
			Maximum.	Minimum.	Mean daily range.	Mean daily value.						Mean daily value.	
January	29.938	84.1	69.4	14.7	76.2	67.3	Not available	76	NE by N
February	889	85.4	68.4	17.0	76.7	67.9		77	E by S	...	3.42	3.17	
March	852	86.6	71.5	15.1	78.8	71.0		80	S E	1	0.03	0.03	
April	793	91.5	77.4	14.1	83.7	75.9		80	S E	3	0.07	0.01	
May	705	94.9	80.4	14.5	86.1	75.4		74	S, S E	10	0.88	0.21	
June	657	98.6	81.6	17.0	87.9	70.7		60	SW by S	17	0.95	0.14	
July	662	96.1	79.8	16.3	85.7	73.7		71	do	11	3.00	1.55	
August	705	92.8	78.8	14.0	84.1	73.8		75	S by W	10	1.25	0.37	
September	705	93.5	78.7	14.8	84.7	71.4		68	S W by S	15	9.85	3.30	
October	760	86.9	75.5	11.4	79.9	73.4		83	S W	12	5.73	3.28	
November	851	84.8	72.5	12.3	78.1	72.0		84	NE by N	8	15.00	7.78	
December	879	82.5	69.1	13.4	75.4	68.7		82	do	90	40.18	...	
Annual Mean ...	29.783	89.8	75.3	14.5	81.4	71.8	9.6	76	S. E.	90	40.18	...	

Annual Form No. I—Births registered by divisions during the year 1933.

1	2	3			4			5			6	7	8	9		10	11
Divisions.	Districts.	Population according to the Census of 1931.			No. of births registered.			Ratio of births per 1000 of Population.			Number of Males born to every 100 Females born.	Excess of births over deaths per 1000 of population.	Excess of deaths over population.	Mean ratio of births per 1000 during previous 5 years.		Still births.	Illegitimate births.
		Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.							
1	Royapuram	10,949	11,003	21,952	487	452	939	44.5	41.1	42.8	107.7	6.7	12.3	39.9	41.2	33	24
2	Fondiarpet	13,189	12,722	25,911	720	651	1,371	51.6	51.2	52.9	110.6	8.1	49.2	46.3	47.8	90	37
3	Washermanpet	13,064	12,599	25,663	638	633	1,271	48.8	50.2	49.5	100.8	5.3	44.9	42.7	43.8	58	6
4	Korukkupet	13,191	12,347	25,538	564	544	1,108	42.8	44.1	43.4	101.7	3.8	35.5	36.3	36.4	61	9
5	Harbour	5,483	3,221	8,704	183	162	345	33.1	50.3	39.6	113.0	...	25.8	39.4	30.6	19	14
6	Muthialpet	8,377	5,880	14,257	246	245	491	29.4	41.7	31.4	100.4	19.0	24.5	36.2	29.3	16	5
7	Katchaleswarapet	6,856	5,851	12,707	272	253	525	39.7	43.2	41.3	107.5	4.1	35.6	33.5	37.4	23	13
8	Kothawal Bazaar	4,013	2,537	6,550	89	86	175	23.2	33.9	26.7	103.5	...	20.9	32.2	25.3	10	1
9	Ammen Koil	10,078	9,124	19,202	433	395	828	43.0	43.3	43.1	109.5	4.9	38.4	41.5	39.9	33	1
10	Seven Wells	10,414	9,880	20,294	407	389	796	39.1	39.4	39.2	100.0	...	34.4	35.7	35.0	32	11
11	Sowcarpet	4,160	3,034	7,194	99	103	202	23.8	33.9	28.1	96.1	...	20.9	26.7	23.3	8	2
12	Peddunaickenpet	11,135	10,412	21,547	473	511	984	42.5	49.1	45.7	92.6	2.7	38.9	39.9	39.4	30	4
13	Trevelyan Basin	9,681	9,235	18,916	391	346	740	40.7	37.5	39.1	113.9	4.4	35.3	33.9	34.6	23	9
14	Esplanade	2,325	1,581	3,906	58	55	113	24.9	32.8	28.9	105.5	9.0	22.8	29.1	25.3	6	2
15	Park Town	9,615	7,568	17,183	334	329	663	34.7	43.5	38.6	101.5	3.1	31.5	37.7	34.2	26	3
16	Perambur	23,176	20,641	43,817	1,014	991	2,008	43.8	48.2	45.8	102.0	11.5	36.1	39.1	37.5	43	51
17	Choolai	14,249	13,239	27,488	700	677	1,377	49.1	51.1	50.1	103.4	10.3	45.3	43.2	44.3	47	25
18	Purasawalkam	13,968	13,086	27,054	592	559	1,151	42.4	42.7	42.5	105.9	8.1	39.2	40.1	39.7	45	21
19	Vepery	12,373	9,764	22,137	476	475	951	33.5	48.6	43.0	100.2	6.1	32.7	41.0	36.8	36	6
20	Egmore	15,353	14,022	29,375	815	801	1,616	53.0	57.1	55.0	101.7	21.6	48.9	51.6	50.2	126	12
21	Kilpauk	13,075	11,259	24,334	469	426	895	35.3	37.3	36.8	110.1	8.3	31.4	35.4	33.2	63	7
22	Nungambakkam	14,512	12,726	27,238	524	492	1,016	36.1	38.7	37.3	106.5	9.2	33.7	35.8	34.7	57	19
23	Chintadripet	13,917	12,928	26,845	675	617	1,292	48.5	47.7	48.1	109.4	9.1	42.8	42.8	42.8	63	15
24	Tiruvateswarapet	16,223	15,148	31,371	799	797	1,596	49.3	52.6	50.9	100.3	7.4	45.3	44.8	45.0	79	27
25	Chepauk	9,394	7,698	17,092	483	369	852	51.4	47.9	49.8	130.9	16.9	40.2	49.0	44.2	62	5
26	Triplicane	10,301	9,213	19,514	397	345	742	38.5	37.4	38.0	115.1	6.0	36.0	38.5	37.2	36	19
27	Amir Mahal	10,135	9,480	19,615	405	463	868	40.0	48.8	44.3	87.5	...	42.8	40.4	41.7	44	2
28	Mirshabpet	13,860	13,483	27,343	679	600	1,279	49.0	41.5	46.8	113.2	...	43.5	42.1	42.8	94	9
29	Royapettah	17,284	15,919	33,203	768	720	1,488	44.4	45.2	44.8	106.7	11.2	31.1	35.9	34.9	63	4
30	Mylapore	10,863	10,407	21,270	434	417	851	45.0	40.1	40.0	104.1	5.3	31.6	31.1	31.4	48	5
Total		3,41,223	3,06,007	6,47,230	14,627	13,906	28,533	42.9	45.4	44.1	105.2	6.2	38.1	40.1	39.0	1380	368

Annual Form No. II—Statement of Deaths during the year 1933.

1	2	3	4	5	6	7	8	9	10																				
Districts.	Population according to the Census of 1931.				No. of deaths registered		Deaths per 1,000 of population from										All causes.		Mean ratio of deaths per 1,000 during previous five years.										
	Area in acres.	Density per acre.	Total.		Total.		No. of deaths of males to every 100 females.	Cholera.	Small-pox.	Measles.	Plague.	Malaria.	Enteric fever.	Other fevers.	Dysentery and Diarrhoea.	Tuberculosis.	Other respiratory diseases.	Injuries.	Deaths from child birth.	All other causes.	Males.	Females.	Total.	Males.	Females.	Total.			
			Males.	Females.	Males.	Females.																							
1	Royapuram	557	39.4	10,949	11,003	21,952	371	420	791	88.3	0.09	1.0	...	0.05	0.1	4.0	2.4	1.1	7.3	0.3	10.6	19.3	33.9	38.2	36.0	39.2	36.0	37.6	
2	Tondiarpet	...	...	13,189	12,722	25,911	613	549	1,162	115.1	0.2	1.1	...	0.1	0.08	4.6	3.7	1.3	9.9	0.6	12.4	22.5	46.5	43.2	44.8	42.7	43.8	43.2
3	Wahermanpet	...	...	13,064	12,899	25,963	601	522	1,123	115.1	0.1	1.6	...	0.8	0.08	4.5	3.5	1.6	10.3	0.5	11.0	18.2	46.0	41.4	43.8	42.9	44.6	43.7
4	Korukkupet	2,093	12.2	13,191	12,847	26,038	620	490	1,110	106.1	0.04	1.4	...	0.1	...	4.1	3.9	1.6	9.1	0.4	12.6	18.2	39.4	39.7	39.6	39.2	38.6	38.9	
5	Harbour	...	...	6,483	8,241	14,724	186	168	354	110.7	...	...	...	...	...	7.0	3.9	0.8	8.5	0.6	14.5	17.6	33.9	32.2	40.7	33.7	49.4	39.5
6	Muthialpet	...	...	8,377	5,880	14,257	189	160	349	118.1	...	...	...	...	...	4.3	1.9	0.7	4.4	0.3	4.1	11.3	22.6	27.2	24.5	21.1	29.6	24.6
7	Katchalewarpet	...	...	6,856	5,881	12,737	235	202	437	101.8	...	...	...	...	...	5.0	3.0	1.2	8.1	0.6	7.6	15.7	34.7	40.2	37.2	31.2	34.9	32.9
8	Kothaval Bazaar	96	68.2	4,013	2,537	6,550	110	102	212	107.8	...	...	...	...	...	0.2	0.3	4.3	2.6	1.4	5.2	0.5	11.4	15.9	27.4	40.2	32.4	23.9
9	Ammen Koll	110	174.6	10,078	9,124	19,202	357	377	734	94.7	0.3	1.2	...	0.3	0.2	5.6	3.2	1.7	10.9	0.2	13.3	14.2	35.4	41.3	38.2	34.8	39.2	36.9	
10	Seven Wells	123	165.0	10,414	9,880	20,294	409	387	796	107.2	0.2	1.4	0.05	0.4	0.1	6.2	6.6	2.5	11.3	0.7	12.6	17.0	39.3	39.2	39.2	44.7	45.2	44.0	
11	Sowcarpet	58	130.8	4,160	3,034	7,194	121	116	236	105.2	...	...	...	...	...	0.7	0.3	7.1	1.8	1.3	6.6	0.3	21.8	13.8	29.1	37.9	32.8	29.1
12	Peddinackempet	...	...	11,135	10,412	21,547	488	438	926	111.4	0.6	1.8	...	0.1	...	6.3	4.0	2.1	11.3	0.2	11.2	15.3	43.8	42.1	43.0	35.6	39.6	37.5
13	Trevellayan Basin	...	...	9,631	9,235	18,866	343	314	657	109.2	0.2	0.6	0.05	...	...	0.4	0.05	3.6	2.6	0.9	9.0	0.3	10.3	16.5	35.4	34.0	34.7	34.6
14	Esplanade	...	...	2,325	1,581	3,906	45	33	78	136.4	...	...	...	...	...	0.8	2.3	3.6	6.7	...	17.7	9.0	19.4	20.9	20.0	26.7	32.8	29.2
15	Park Town	...	...	9,615	7,568	17,183	324	285	609	113.7	0.3	0.9	0.1	...	...	0.2	0.2	3.3	2.3	0.9	8.9	0.8	13.6	17.1	33.7	37.7	25.4	32.1
16	Perambur	...	...	23,176	20,641	43,817	809	697	1,506	116.1	...	...	...	...	...	0.07	0.1	3.5	5.1	0.9	8.8	0.2	10.0	14.4	34.9	33.8	34.4	30.4
17	Choolai	...	...	14,249	13,239	27,488	552	543	1,095	101.7	...	...	...	...	...	...	2.5	6.0	1.8	12.7	0.5	5.8	14.8	35.7	41.0	39.8	41.1	41.0
18	Parasawalkam	...	...	13,968	13,086	27,054	439	428	867	89.0	...	...	...	...	...	0.04	0.07	1.5	6.7	1.7	11.2	0.2	8.7	12.6	31.4	37.1	34.4	35.2
19	Vepery	...	...	12,313	9,764	22,077	443	373	816	118.8	...	...	...	...	...	0.09	0.1	1.7	4.1	3.0	10.9	0.8	13.7	14.8	33.8	33.2	36.9	33.8
20	Egmore	...	...	15,363	14,022	29,385	492	488	980	100.8	...	...	...	...	...	0.03	0.2	2.0	3.5	1.8	7.4	0.2	17.9	16.6	32.0	34.8	33.3	31.0
21	Kilpauk	...	...	13,075	11,959	25,034	374	320	694	116.9	0.2	0.4	0.04	...	...	0.04	0.4	0.8	2.9	1.9	6.2	0.2	13.2	15.0	28.6	28.4	28.8	29.7
22	Nungambakkam	...	...	13,917	12,923	26,840	375	391	766	95.9	0.04	0.8	...	...	...	0.3	0.04	0.6	3.3	1.7	7.5	0.3	14.8	13.0	28.8	30.7	29.8	29.8
23	Chintadripet	...	...	16,223	15,148	31,371	715	650	1,365	110.0	0.1	0.9	...	...	...	0.04	0.07	2.4	0.4	2.3	10.5	0.3	11.6	16.7	38.7	38.7	35.7	36.6
24	Tiruvattewarpet	...	...	7,698	7,994	17,092	293	270	563	108.6	0.2	0.8	0.06	...	...	0.2	0.1	4.3	4.4	0.8	9.2	0.6	8.1	22.5	44.1	42.9	43.5	39.2
25	Chepauk	...	...	10,301	9,213	19,514	309	316	624	98.1	...	...	...	...	...	0.2	0.3	2.5	3.9	1.5	6.4	0.4	14.1	16.0	31.2	35.1	32.9	27.1
26	Tripplicane	...	...	10,135	9,480	19,615	431	446	877	96.6	...	...	...	...	...	0.2	0.3	2.7	3.3	1.3	6.8	0.5	13.5	14.1	30.0	34.2	32.0	30.1
27	Amir Mahal	...	...	13,860	12,483	26,343	665	654	1,319	101.7	0.2	0.7	0.4	...	...	0.3	0.1	4.0	3.7	1.1	8.9	0.7	11.5	24.3	42.6	47.0	44.7	40.7
28	Mirashpet	...	...	17,254	15,219	32,473	650	587	1,237	100.6	0.63	1.3	0.09	...	...	0.09	0.2	3.1	4.2	1.1	9.1	0.4	8.7	13.7	32.4	35.0	33.6	28.1
29	Royapettah	...	...	10,863	10,407	21,270	364	374	738	97.3	...	...	...	...	...	0.05	0.09	0.5	3.8	0.8	8.7	0.1	16.5	16.8	33.6	35.9	34.7	31.0
30	Mylapore	...	...	3,412.3	3,06,007	6,47,230	12,713	11,787	24,500	107.9	0.1	1.3	0.08	...	...	0.2	0.1	3.2	4.1	1.6	9.2	0.5	11.6	16.9	37.2	38.6	37.9	34.2
Total							328	3,412.3	3,06,007	6,47,230	12,713	11,787	24,500	107.9	0.1	1.3	0.08	36.6	35.3

* Includes 158 and 402 deaths in the Government Royapuram and General Hospital of patients admitted from mofussil and destitutes.

Annual Form No. III.—Deaths Registered by Divisions during each month of the year 1933.

1	2	3										4		
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths Registered during the year 1933.
1	Royapuram	92	50	57	83	75	59	59	52	60	57	60	87	791
2	Tondiarpet	115	88	92	91	72	61	98	87	93	92	145	125	1,162
3	Washermanpet	103	99	135	80	78	70	82	69	71	98	118	120	1,123
4	Korukkupet	80	67	93	87	63	53	77	76	72	88	108	126	1,010
5	Harbour	40	34	25	21	41	27	9	25	38	31	33	30	354
6	Muthialpet	28	41	21	30	30	27	33	28	27	27	32	28	349
7	Katchaleswararpet	64	42	46	40	50	35	21	31	30	39	34	41	473
8	Kothawal Bazaar	22	17	20	20	15	10	11	17	15	20	25	20	212
9	Ammen Koil	77	80	84	82	50	46	35	50	43	47	72	68	734
10	Seven Wells	99	71	105	76	89	65	75	78	41	71	82	192	954
11	Sowcarpet	21	24	13	23	22	32	13	15	12	19	24	18	236
12	Peddunackpet	83	67	71	97	78	53	65	70	50	68	102	122	926
13	Trevelyan Basin	58	48	64	53	70	55	36	47	53	49	60	64	657
14	Esplanade	48	38	50	30	38	31	35	46	38	38	40	45	480
15	Park Town	65	63	54	49	41	49	41	49	38	34	57	69	609
16	Perambur	124	124	131	129	147	118	106	108	100	128	133	158	1,506
17	Choolai	95	73	95	83	91	83	69	80	99	100	103	119	1,095
18	Purasawalkam	87	85	90	65	73	71	78	68	66	73	82	93	932
19	Vepery	88	46	67	65	72	60	57	64	71	70	73	83	816
20	Egmore	83	70	68	71	91	65	78	94	73	89	104	94	980
21	Kilpauk	79	53	51	37	63	41	55	43	52	51	81	85	694
22	Nungambakkam	69	51	64	68	71	62	55	65	67	58	56	80	766
23	Chintadripet	81	86	96	58	96	81	92	87	75	77	90	119	1,038
24	Tiruvateswararpet	100	112	128	134	130	112	103	89	94	104	101	135	1,365
25	Chepauk	47	45	37	47	54	42	48	34	36	57	61	55	563
26	Triplicane	50	45	50	61	52	46	50	35	47	50	83	55	624
27	Amir Mahal	69	57	88	74	88	64	61	52	76	78	75	95	877
28	Mirahibpet	146	116	137	112	91	98	97	64	92	94	133	134	1,319
29	Royapettah	85	81	89	97	93	71	86	83	85	86	131	127	1,117
30	Mylapore	74	44	77	67	45	47	55	69	44	56	70	90	738
Total		2,272	1,917	2,198	2,039	2,069	1,760	1,780	1,775	1,758	1,949	2,376	2,697	24,500

Annual Form No. IV—Deaths registered according to age by divisions during the year 1933.

1	2	3	4		5		6		7		8		9		10		11		12		
Divisions.	Districts.	Under 1 year	1 year and under 5 years.		5 years and under 10 years.		10 years and under 15 years.		15 years and under 20 years.		20 years and under 30 years.		30 years and under 40 years.		40 years and under 50 years.		50 years and under 60 years.		60 years and upwards.		
			Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.			
1	Royapuram	138	137	58	86	13	15	5	5	8	13	14	27	31	23	20	23	18	58	62	
2	Tondiarpet	222	194	103	97	17	10	7	8	11	13	37	43	44	41	25	48	27	84	70	
3	Washermanpet	224	173	97	114	21	23	8	5	10	16	34	42	43	35	24	36	17	93	65	
4	Korukkupet	186	161	66	95	18	15	16	8	11	14	34	42	38	20	20	30	23	81	74	
5	Harbour	60	53	36	40	5	4	5	1	4	6	14	13	13	15	6	13	7	16	26	
6	Muthialpet	49	54	33	29	6	7	3	1	7	6	23	16	9	10	8	14	14	26	15	
7	Katchaleswarapet	75	62	41	38	7	7	2	4	7	4	21	30	17	15	19	21	19	28	40	
8	Kothawal Bazaar	30	23	10	18	5	3	3	...	6	5	9	10	6	9	9	16	9	13	19	
9	Amnen Koil	106	104	56	70	14	16	6	6	5	9	26	37	29	28	23	28	25	54	60	
10	Seven Wells	122	110	66	57	16	15	9	11	17	24	47	42	53	60	31	43	34	87	64	
11	Sowcarpet	34	27	9	12	5	4	1	4	4	6	11	16	11	13	6	15	14	18	20	
12	Peddunaickenpet	177	125	83	68	20	16	6	14	7	23	25	41	35	40	28	29	24	64	59	
13	Trevelyan Basin	120	81	64	48	11	10	5	2	9	17	24	38	20	25	13	18	18	50	62	
14	Esplanade	18	14	17	15	11	4	11	2	17	13	66	14	9	12	12	35	13	27	8	
15	Park Town	95	71	48	53	13	5	7	4	8	10	22	27	29	23	19	26	23	53	52	
16	Perambur	268	223	140	132	37	21	10	17	20	16	60	52	56	55	37	43	31	120	115	
17	Choolai	185	162	108	113	25	23	10	6	13	27	31	41	38	30	31	34	37	85	86	
18	Purasawalkam	152	162	78	90	17	22	4	11	9	18	19	36	29	22	35	24	18	78	82	
19	Vepery	134	87	78	69	19	9	8	5	7	17	27	42	31	32	23	23	42	74	61	
20	Egmore	193	128	66	10	17	11	3	13	11	23	36	49	36	57	30	31	35	65	79	
21	Kilpauk	82	84	39	40	10	8	3	5	12	16	46	28	45	27	34	21	36	67	55	
22	Nungambakkam	121	114	49	68	13	16	6	4	8	14	28	40	36	23	24	25	26	70	59	
23	Chintadripet	185	153	95	96	26	8	6	9	14	15	32	43	33	29	40	38	32	70	75	
24	Tiruvateeswarapet	212	182	104	113	38	30	15	14	23	20	47	55	46	45	40	45	42	145	126	
25	Chepauk	105	74	48	37	8	5	10	5	7	14	15	30	22	30	22	19	21	35	39	
26	Triplacane	107	86	49	63	13	20	4	4	5	6	19	25	16	21	19	14	21	56	52	
27	Amir Mahal	125	148	76	76	25	18	5	6	7	14	28	34	28	21	26	17	23	24	83	
28	Mirshibpet	227	212	154	128	27	33	15	29	12	20	33	59	37	31	31	25	36	18	90	
29	Royapettah	186	163	92	108	25	29	7	13	20	20	39	56	29	32	34	25	41	87	90	
30	Mylapore	121	113	74	80	22	17	5	8	11	20	18	24	15	24	24	13	23	51	61	
Total		4,060	3,489	2,036	2,118	503	425	206	224	310	438	889	1,086	980	853	920	632	883	669	1,862	
Ratio per 1,000		277.6	250.3	66.1	69.2	14.1	12.5	6.1	7.0	9.2	13.0	12.4	15.9	16.5	18.4	24.3	22.5	45.5	41.5	162.5	191.0

Annual Form No. V.—Deaths registered according to class by divisions during the year 1933.

		3			4				5							
		Population as per Census of 1931.				Number of deaths registered.				Ratio of deaths per 1,000 of population.						
Divisions.	Districts.															
		Christians.	Hindus.	Mohammadans.	Others.	Total.	Christians.	Hindus.	Mohammadans.	Others.	Total.	Christians.	Hindus.	Mohammadans.	Others.	Total.
1	Royapuram	5,797	14,840	1,139	166	21,932	174	518	69	...	791	30.2	36.9	60.0	...	36.0
2	Tondiarpet	1,300	22,616	1,914	81	25,911	50	1,007	105	...	1,162	38.5	44.5	51.9	...	44.8
3	Washermanpet	888	23,635	1,778	11	25,563	35	1,017	71	...	1,123	39.4	41.1	41.1	...	43.8
4	Korukkupet	976	20,557	3,927	48	25,538	21	833	156	...	1,010	21.5	40.5	39.4	...	39.5
5	Harbour	503	3,491	4,677	23	8,704	3	139	212	...	351	6.0	39.8	45.2	...	40.7
6	Muthialpet	1,236	12,308	697	16	14,257	6	319	24	...	349	4.9	25.9	34.4	...	24.5
7	Katchaleswaranpet	1,838	9,822	993	52	12,707	39	378	56	...	473	21.2	38.5	56.3	...	37.2
8	Kothawal Bazaar	185	5,232	1,087	46	6,550	4	185	23	...	212	21.6	35.4	21.2	...	32.4
9	Ammen Koil	2,259	12,967	3,839	107	19,202	52	528	154	...	731	22.7	40.7	40.1	...	38.2
10	Seven Wells	1,571	17,329	1,265	129	20,234	47	672	77	...	796	29.1	38.8	60.9	...	39.2
11	Sowcarpet	14	6,658	34	488	7,194	...	234	2	...	236	...	33.1	58.8	...	32.8
12	Peddunackenpet	75	21,141	305	26	21,547	...	922	4	...	926	...	43.6	13.1	...	43.0
13	Trevelyan Basin	38	18,500	86	292	18,916	...	651	3	...	657	...	35.4	31.9	...	31.7
14	Esplanade	275	3,387	161	80	3,906	...	78	...	...	78	...	23.0	...	...	29.2
15	Park Town	665	16,169	219	110	17,183	16	592	1	...	609	21.0	36.6	4.5	...	35.4
16	Perambur	2,175	33,024	8,409	209	43,817	43	1,143	320	...	1,506	19.8	34.6	38.1	...	31.4
17	Choolai	1,427	25,525	507	29	27,486	37	1,032	26	...	1,095	25.9	40.4	51.3	...	39.8
18	Purasawalkam	4,088	22,347	528	91	27,054	89	825	18	...	932	21.8	36.9	31.1	...	34.4
19	Vepery	4,116	15,922	1,949	159	22,137	105	660	51	...	816	25.5	41.5	26.3	...	36.9
20	Egmore	5,080	21,313	2,902	90	29,385	112	762	106	...	980	22.0	35.8	36.5	...	33.3
21	Kilpauk	3,584	20,002	726	22	24,331	69	596	29	...	694	19.3	29.8	39.9	...	28.5
22	Nungambakam	4,365	21,036	1,723	114	27,238	87	631	47	...	765	19.9	30.0	27.3	2.8	28.1
23	Chintadripet	1,951	23,550	1,220	124	26,845	52	941	46	...	1,038	26.7	40.0	36.9	...	38.7
24	Tiruvateeswaranpet	1,071	13,646	10,578	76	31,371	31	813	521	...	1,365	28.9	41.4	49.3	...	43.5
25	Chepak	603	12,817	3,665	7	17,092	15	399	149	...	663	21.9	31.1	40.7	...	32.9
26	Triplicane	94	19,002	391	27	19,514	1	611	12	...	624	10.6	32.2	30.7	...	32.0
27	Amir Mahal	785	11,314	7,505	11	19,615	28	481	365	...	877	36.9	42.8	48.6	...	44.7
28	Mirahibpet	1,145	20,816	5,271	81	27,313	21	992	396	...	1,319	18.3	47.6	58.1	...	48.5
29	Royapettah	2,481	28,612	1,956	154	33,203	59	976	82	...	1,117	23.7	34.1	41.9	...	33.6
30	Mylapore	3,507	17,147	581	32	21,270	99	612	27	...	738	28.2	35.7	46.2	...	34.7
Total		54,122	5,20,176	70,031	2,901	6,47,230	1,337	20,065	3,095	1	24,500	24.7	38.6	44.2	0.7	37.9

* Includes 158 and 402 deaths in the Government Rayapuram and General Hospital of Patients admitted from Moffusil and destitutes.

Annual Form No. VI.—Deaths registered from "CHOLERA" by division during each month of the year 1933.

1	2	3												4			5		6
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratio of deaths per 1000 of population.		Mean ratio per 1,000 during previous five years.	
														Males.	Females.	Total.			
1	Royapuram	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	0.2	0.09	0.4
2	Tondiarpet	...	...	...	...	...	...	...	...	...	...	2	2	...	3	1	0.2	0.2	0.3
3	Washermanpet	...	...	...	...	...	...	...	...	...	...	3	3	1	2	1	0.2	0.1	0.2
4	Korukkupet	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	0.04	0.4	0.4
5	Harbour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
6	Muthialpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1
7	Katchaleswarapet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2
8	Kothawal Bazaar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
9	Annen Koil	...	...	...	...	...	...	...	...	...	...	...	5	2	3	0.2	0.3	0.3	0.3
10	Seven Wells	...	...	...	...	...	...	...	...	...	...	3	2	4	5	0.4	0.1	0.4	0.4
11	Sowcarpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1
12	Peddunaickenpet	...	...	...	...	...	...	...	...	...	...	7	5	6	12	0.5	0.6	0.2	0.2
13	Trevelyan Basin	...	...	...	...	...	...	...	...	...	...	2	1	1	3	0.1	0.2	0.2	0.2
14	Esplanade	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.5
15	Park Town	...	...	...	...	...	...	...	...	...	...	...	5	2	3	0.2	0.4	0.3	0.1
16	Perambur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
17	Choolai	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.6
18	Purasawalkam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
19	Vepery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
20	Egmore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
21	Kilpauk	...	...	...	...	...	...	...	...	...	...	...	4	...	...	0.3	0.2	0.2	0.2
22	Nungambakam	...	...	...	...	...	...	...	...	...	...	...	1	1	1	0.07	...	0.04	0.1
23	Chintadripet	...	...	...	...	...	...	...	...	...	...	...	4	2	4	0.1	0.2	0.1	0.2
24	Tiruvattewarapet	...	...	...	...	...	...	...	...	...	1	1	5	3	7	0.2	0.3	0.2	0.1
25	Chepauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2
26	Triplacane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
27	Amir Mahal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
28	Misahibpet	...	...	...	...	...	...	...	...	...	...	3	2	2	5	0.1	0.2	0.2	0.6
29	Royapettah	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	0.06	0.03	0.2
30	Mylapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1
	Total	...	...	...	...	...	...	...	...	...	2	18	42	30	32	62	0.03	0.1	0.3

Annual Form No. VII—Deaths registered from 'SMALL-POX' by Divisions during each month of the year 1933.

1	2	3												4		5		6
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratio of deaths per 1,000 of population.		Mean Ratio per 1,000 during five years.
														Males.	Females.	Males.	Females.	
1	Royapuram	2	1	4	5	2	2	1	2	2	1	1	...	10	12	0.9	1.1	1.0
2	Tondiarpet	...	...	...	...	...	...	...	...	...	...	...	...	13	15	1.0	1.2	1.1
3	Washermanpet	...	...	...	...	...	...	...	...	...	...	...	...	23	18	1.8	1.4	1.6
4	Korukkupet	...	...	...	...	...	...	...	...	...	...	...	...	23	13	1.7	1.0	1.4
5	Harbour	...	...	...	...	...	...	...	...	...	...	...	...	9	5	1.6	1.5	1.6
6	Muthialpet	...	...	...	...	...	...	...	...	...	...	...	...	12	4	1.4	0.7	1.1
7	Katchaleswaranpet	...	...	...	...	...	...	...	...	...	...	...	...	16	17	2.3	2.9	2.6
8	Kothawal Bazaar	...	...	...	...	...	...	...	...	...	...	...	...	10	2	2.5	0.8	1.8
9	Ammen Koil	...	...	...	...	...	...	...	...	...	...	...	...	12	12	1.2	1.3	1.2
10	Seven Wells	...	...	...	...	...	...	...	...	...	...	...	...	10	16	0.96	1.6	1.3
11	Sowcarpet	...	...	...	...	...	...	...	...	...	...	...	...	4	2	1.0	0.7	0.8
12	Peddunaickenpet	...	...	...	...	...	...	...	...	...	...	...	...	17	21	1.5	2.0	1.8
13	Trevelyan Basin	...	...	...	...	...	...	...	...	...	...	...	...	4	8	0.4	0.9	0.6
14	Esplanade	...	...	...	...	...	...	...	...	...	...	...	...	4	3	1.7	1.9	1.8
15	Park Town	...	...	...	...	...	...	...	...	...	...	...	...	11	5	1.1	0.7	0.9
16	Perambur	...	...	...	...	...	...	...	...	...	...	...	...	20	24	0.9	1.1	1.0
17	Choolai	...	...	...	...	...	...	...	...	...	...	...	...	18	15	1.3	1.1	1.2
18	Purasawalkam	...	...	...	...	...	...	...	...	...	...	...	...	13	18	0.9	1.4	1.1
19	Vepery	...	...	...	...	...	...	...	...	...	...	...	...	11	8	0.9	0.8	0.9
20	Egmore	...	...	...	...	...	...	...	...	...	...	...	...	6	15	0.4	1.1	0.7
21	Kilpauk	...	...	...	...	...	...	...	...	...	...	...	...	6	4	0.5	0.4	0.4
22	Nungambakam	...	...	...	...	...	...	...	...	...	...	...	...	11	11	0.8	0.9	0.8
23	Chintadripet	...	...	...	...	...	...	...	...	...	...	...	...	11	11	0.9	0.9	0.9
24	Tiruvateswaranpet	...	...	...	...	...	...	...	...	...	...	...	...	16	9	1.0	0.6	0.8
25	Chepauk	...	...	...	...	...	...	...	...	...	...	...	...	1	8	0.9	1.4	1.1
26	Triplicane	...	...	...	...	...	...	...	...	...	...	...	...	17	15	1.6	1.6	1.6
27	Amir Mahal	...	...	...	...	...	...	...	...	...	...	...	...	14	7	1.4	0.7	1.1
28	Mirshibpet	...	...	...	...	...	...	...	...	...	...	...	...	50	50	3.6	3.7	3.7
29	Royapettah	...	...	...	...	...	...	...	...	...	...	...	...	19	23	1.1	1.4	1.3
30	Mylapore	...	...	...	...	...	...	...	...	...	...	...	...	24	37	2.2	3.6	2.9
Total		58	95	174	147	79	53	81	52	42	30	16	16	126	141	1.2	1.3	1.3
																		0.4

Includes 2 deaths in the Government Rayapuram Hospital of Patients admitted from Moffusil and destitutes.

Annual Form No. VIII. --Deaths registered from 'MEASLES' by divisions during each month of the year 1933.

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1	2	3												4		5			6
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratio of Deaths per 1,000 of Population.		Mean ratio per 1000 during previous five years.	
														Males.	Females.	Total.			
1	Royapuram	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.05
2	Tondiarpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.04
3	Washermanpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.02
4	Korukkupet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.02
5	Harbour	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6	Muthialpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.04
7	Katchaleswararpet	..	..	..	..	..	..	..	..	..	..	..	1	..	0.1	..	0.1	0.08
8	Kothawal Bazaar	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	Annen Koil	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	Seven Wells	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.05
11	Sowcarpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.05
12	Peddunaickenpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13	Trevelyan Basin	1	..	1	2	..	..	..	..	..	..	..	1	2	0.09	0.1	0.1	0.09
14	Esplanade	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	Park Town	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.1
16	Perambur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	Choolai	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.05
18	Purasawalkam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.03
19	Vepery	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	0.01
20	Egmore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.05
21	Kilpauk	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	0.07
22	Nungambakam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	Chintadripet	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	0.04
24	Tiruvateeswararpet	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.1
25	Chepauk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0.2
26	Triplicane	..	3	..	1	2	1	1	2	2	..	..	..	..	..	..	..	0.04
27	Amir Mahal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	Mirsahibpet	..	2	1	2	1	..	3	..	..	..	2	..	..	..	..	..	0.02
29	Royapettah	1	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	0.03
30	Mylapore	..	..	2	1	2	1	..	1	..	..	..	..	..	..	..	..	0.09
Total		4	5	5	7	6	2	4	3	3	..	2	2	24	20	44	0.07	0.05	

Annual Form No. IX--Plague--Nil.

Annual Form No. X.—Deaths registered from "MALARIA" by divisions during each month of the year 1933.

1	2	3												4		5		6
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratio of deaths per 1,000 of population.		Mean ratio per 1,000 during five years.
														Males.	Females.	Males.	Females.	
1	Royapuram	...	...	...	...	...	...	...	...	1	2	...	...	1	...	0.09	...	0.9
2	Tondiarpet	...	...	...	...	...	...	...	...	...	2	...	...	6	...	0.5	0.3	1.0
3	Washermanpet	...	...	...	...	...	...	...	...	...	2	...	...	11	10	0.8	0.8	2.1
4	Korukkupet	...	...	...	...	...	...	...	...	...	...	...	...	4	5	0.3	0.4	1.3
5	Harbour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3	2.0
6	Muthialpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.7	0.8
7	Katchaleswaranpet	...	...	...	...	...	...	...	...	...	...	...	...	2	3	0.3	0.5	0.9
8	Kothawal Bazaar	...	...	...	...	...	...	...	...	...	...	...	...	1	...	0.2	...	1.2
9	Ammen Koil	...	...	...	...	...	...	...	...	...	...	...	...	1	...	0.1	0.4	0.9
10	Seven Wells	...	...	...	...	...	...	...	...	...	...	...	...	2	4	0.2	0.4	1.1
11	Sowcarpet	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0.5	1.0	0.8
12	Peddunaickenpet	...	...	...	...	...	...	...	...	...	...	...	...	2	3	0.2	0.4	0.9
13	Trevelyan Basin	...	...	...	...	...	...	...	...	...	...	...	...	3	4	0.3	0.4	0.7
14	Esplanade	...	...	...	...	...	...	...	...	...	...	...	...	4	1	...	0.6	2.0
15	Park Town	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0.2	0.1	0.5
16	Perambur	...	...	...	...	...	...	...	...	...	...	...	...	3	...	0.1	...	0.6
17	Choolai	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1.6
18	Purasawalkam	...	...	...	...	...	...	...	...	...	...	...	...	1	...	0.07	...	1.1
19	Vepery	...	...	...	...	...	...	...	...	...	...	...	...	1	2	0.08	0.1	1.2
20	Egmore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1	0.5
21	Kilpauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.08	...	0.4
22	Nungambakkam	...	...	...	...	...	...	...	...	...	...	...	...	6	...	0.4	0.2	0.8
23	Chintadripet	...	...	...	...	...	...	...	...	...	...	...	...	3	...	0.3	0.1	0.9
24	Tiruvateeswaranpet	...	...	...	...	...	...	...	...	...	...	...	...	3	4	0.2	0.3	1.2
25	Chepauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3	0.4	0.3
26	Triplicane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2	0.2	0.4
27	Amir Mahal	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0.2	0.4	0.9
28	Mirshahibpet	...	...	...	...	...	...	...	...	...	...	...	...	2	4	0.2	0.4	0.8
29	Royapettah	...	...	...	...	...	...	...	...	...	...	...	...	1	5	0.07	0.1	0.7
30	Mylapore	...	...	...	...	...	...	...	...	...	...	...	...	2	1	0.1	0.1	0.7
	Total	...	...	...	...	...	...	...	...	...	...	...	...	66	74	0.2	0.2	0.9

* Includes 3 and 4 deaths in the Government Royapuram and General Hospital of patients admitted from mofussil and destitutes.

Annual Form No. XI.—Deaths registered from "ENTERIC FEVER" by divisions during each month of the year 1933.

1	2	3												4		5		6		
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Males.	Females.	Ratio of deaths per 1000 of the Population	Mean ratio per 1,000 during five years.	
														Males.	Females.					
1	Royapuram	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0.2	0.1	0.1	0.1
2	Tondiarpet	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0.2	0.08	0.04	0.04
3	Washermanpet	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	0.08	0.08	0.1	0.1
4	Korukkupet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1
5	Harbour	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2
6	Mulhalpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.3
7	Katchaleeswaranpet	...	...	...	...	2	...	1	...	1	...	...	...	...	4	3	0.4	0.2	0.3	0.2
8	Kothawal Bazaar	...	...	...	...	...	1	...	...	...	2	...	...	...	2	1	0.2	0.4	0.3	0.3
9	Ammen Koil	...	...	...	...	...	...	...	...	1	1	1	...	...	4	3	0.3	0.1	0.2	0.2
10	Seven Wells	1	...	...	...	...	...	...	1	...	...	...	1	...	1	1	0.1	0.1	0.1	0.3
11	Sowcarpet	...	...	...	1	...	...	...	1	...	...	...	...	...	2	2	0.5	...	0.3	0.3
12	Peddunaickenpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.2	0.2
13	Trevelyan Basin	...	...	...	...	1	...	...	...	...	1	...	...	...	...	1	0.1	...	0.05	0.2
14	Esplanade	...	1	1	...	1	2	...	1	...	1	2	...	...	8	0	...	0.6	0.3	2.6
15	Park Town	...	1	...	...	...	1	1	...	1	1	...	...	...	4	3	0.3	0.1	0.2	0.3
16	Perambur	...	1	1	...	...	1	...	1	...	1	...	1	...	6	5	0.2	0.05	0.1	0.1
17	Choolai	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0.1
18	Purasawalkam	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	0.07	0.08	0.07	0.2
19	Vepery	...	...	...	...	2	...	...	...	...	...	1	...	...	2	...	...	0.2	0.1	0.2
20	Egmore	1	1	...	...	1	...	...	2	1	...	1	...	...	7	4	0.3	0.2	0.2	0.3
21	Kilpauk	...	...	...	...	1	2	1	...	1	...	1	...	...	9	7	0.5	0.2	0.4	0.2
22	Nungambakkam	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	0.08	0.08	0.04	0.1
23	Chintadripet	...	...	...	...	...	...	...	...	1	1	...	...	...	2	1	0.07	0.08	0.07	0.3
24	Tiruvateeswaranpet	...	...	...	...	...	...	...	...	1	1	...	...	...	4	2	0.1	0.1	0.1	0.2
25	Chepauk	...	1	1	...	...	...	...	...	1	2	1	...	...	5	3	0.3	0.3	0.3	0.4
26	Triplicane	...	...	1	...	...	1	2	...	...	1	...	...	...	4	1	0.4	0.1	0.3	0.4
27	Amir Mahal	...	...	...	...	...	...	...	...	1	...	1	...	...	2	2	...	...	0.1	0.2
28	Mirshahibpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0.07	0.07	0.07	0.1
29	Royapettah	...	...	...	...	...	...	...	...	1	1	4	...	...	6	4	0.1	0.2	0.2	0.2
30	Mylapore	...	1	...	1	...	...	...	...	...	...	...	...	...	2	2	...	...	0.09	0.2
Total		4	7	7	4	8	9	5	6	11	11	12	6	54	36	90	0.1	0.1	0.2	0.2

* Includes 1 and 8 deaths in the Government Royapuram and General Hospital of patients admitted from moffull and destitutes.

Annual Form No. XII.—Deaths registered from "OTHER FEVERS" by divisions during each month of the year 1933.

1	2	3												4			5		6		
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of Deaths per 1,000 of population.		Mean ratio per 1,000 during previous five years.		
														Males.	Females.	Total.	Males.	Females.		Total.	
1	Royapuram	...	11	6	9	11	7	2	5	10	5	5	4	13	44	88	4.0	4.0	4.9		
2	Tondiarpet	...	15	13	11	10	6	11	12	12	6	13	12	58	60	118	4.4	4.7	5.2		
3	Washermanpet	...	5	13	12	5	2	1	7	12	12	17	20	56	60	116	4.3	4.8	3.4		
4	Korukkupet	...	4	6	7	10	4	8	4	10	16	17	17	55	49	104	4.2	4.0	3.3		
5	Harbour	...	4	9	2	5	8	3	7	11	8	2	2	28	33	61	5.1	10.2	3.9		
6	Muthialpet	...	3	10	1	8	4	8	7	3	4	5	6	32	30	62	3.8	5.1	2.8		
7	Katchaleswaranpet	...	11	9	5	6	5	5	6	2	4	1	4	29	35	64	4.2	6.0	3.8		
8	Kothawal Bazaar	...	2	2	3	1	4	4	1	2	3	2	3	13	15	28	3.2	6.0	2.4		
9	Annen Koil	...	8	15	15	9	4	9	10	4	9	10	8	45	61	107	4.6	6.7	3.4		
10	Seven Wells	...	10	8	11	10	3	11	13	10	6	16	9	53	70	122	5.1	7.1	3.4		
														*1	*2	*3					
11	Sowcarpet	...	2	3	1	5	4	9	2	4	5	7	3	28	23	51	6.7	7.6	2.8		
12	Peddunaickenpet	...	6	12	10	12	9	13	17	11	8	11	16	69	67	136	6.2	6.4	3.0		
13	Trevelyan Basin	...	4	2	8	3	8	4	4	6	...	7	8	40	29	69	4.1	3.1	3.5		
14	Esplanade	...	2	...	3	1	2	1	1	1	...	...	2	5	1	6	3.4	3.8	4.1
														*3	*5	*8					
15	Park Town	...	4	5	6	6	6	6	3	5	3	1	6	31	25	56	3.2	3.3	3.2		
16	Perambur	...	14	9	12	16	15	14	17	12	6	16	13	83	69	152	3.6	3.3	2.4		
17	Choolai	...	3	3	6	4	9	14	4	5	7	5	7	39	29	68	2.2	2.2	1.0		
18	Purasawalkam	...	2	8	1	2	3	6	1	5	...	4	7	16	24	40	1.7	1.8	0.7		
19	Vepery	...	4	4	4	4	3	3	1	1	...	4	4	14	24	38	1.1	2.5	2.2		
20	Egmore	...	4	5	5	1	4	8	4	6	8	3	6	27	31	58	1.8	2.2	1.9		
21	Kilpauk	...	2	...	...	...	3	5	...	2	2	1	2	6	13	19	0.5	1.2	1.1
22	Nungambakam	...	2	2	...	...	1	2	3	1	...	...	1	8	9	17	0.6	0.7	1.5
23	Chintadripet	...	3	6	4	3	4	3	7	2	8	8	13	35	28	63	2.5	2.2	2.4		
24	Tiruvateeswaranpet	...	16	15	11	9	24	8	7	11	11	7	8	59	74	133	3.6	4.9	3.2		
25	Chepauk	...	3	4	6	1	5	4	3	2	3	4	3	28	15	43	3.0	1.9	1.8		
26	Triplicane	...	6	4	5	3	6	2	4	5	2	6	5	19	34	53	1.8	3.7	1.5		
27	Amir Mahal	...	8	5	10	6	10	6	2	3	9	10	6	40	39	79	3.9	4.1	5.0		
28	Mirahibpet	...	2	3	2	1	2	2	1	2	1	1	2	9	10	19	0.6	0.7	1.4		
29	Royapettah	...	6	7	5	10	5	7	7	10	9	16	15	61	42	103	3.5	2.6	1.4		
30	Mylapore	...	...	1	1	1	...	1	...	1	...	1	3	4	6	10	0.4	0.6	1.1
Total		...	166	190	176	168	171	177	168	151	147	154	199	228	1039	1056	2095	3.0	3.5	3.2	2.7

* Includes 3 and 8 deaths in the Government Royapuram and General Hospital of patients admitted from mofussil and destitutes.

Annual Form No. XIII.—Deaths Registered from "DYSENTERY and DIARRHOEA" by Divisions during each month of the year 1933.

1	2	3												4			5			6
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of Deaths per 1,000 of population.			Mean ratio per 1000 during previous 5 years
														January.	February.	March.	Males.	Females.	Total.	
1	Royapuram	5	4	2	3	3	...	5	2	6	7	8	8	18	35	53	16	32	48	4.5
2	Tondiarpet	6	5	8	5	1	3	8	7	12	13	13	15	51	42	96	41	33	74	5.3
3	Washermanpet	15	16	28	18	17	13	4	4	1	8	7	7	82	59	141	63	47	55	6.0
4	Korukkupet	7	10	15	13	7	9	7	9	3	6	6	6	56	43	99	42	35	39	5.6
5	Harbour	5	2	4	2	4	4	3	2	3	3	...	2	16	18	34	29	56	29	4.9
6	Muthialpet	...	3	4	5	2	3	1	3	4	1	...	...	16	11	27	19	19	19	2.1
7	Katchaleswarpet	4	3	6	4	8	2	...	4	2	...	4	2	18	20	38	26	34	30	3.2
8	Kothawal Bazaar	...	1	2	1	2	...	4	...	1	1	8	2	9	8	17	22	32	26	2.7
9	Annen Koil	9	9	6	5	5	6	4	5	2	3	4	3	21	40	61	21	44	32	4.2
10	Seven Wells	19	12	13	11	16	9	10	11	3	10	7	10	51	45	96	49	46	47	5.6
11	Sowcarpet	3	1	1	1	1	2	1	1	1	...	1	...	26	12	38	14	23	18	2.4
12	Peddunaickenpet	15	9	11	12	7	4	5	5	5	4	6	4	46	41	87	41	39	40	4.7
13	Trevelyan Basin	2	3	9	6	2	6	...	7	5	6	2	2	29	21	50	30	23	26	3.3
14	Esplanade	6	3	2	3	1	1	...	2	1	4	2	1	3	5	8	13	32	21	7.2
15	Park Town	3	6	5	2	...	...	5	4	1	4	2	2	21	18	39	22	24	23	2.8
16	Perambur	12	27	21	15	18	14	16	16	18	28	22	16	119	104	223	51	50	61	4.9
17	Choolai	17	12	21	15	12	11	12	15	16	14	16	4	78	87	165	55	66	60	6.4
18	Purasawalkam	21	12	11	12	14	15	8	12	14	14	13	7	83	70	153	59	53	57	6.7
19	Vepery	12	1	11	5	7	7	5	11	9	10	4	8	48	42	90	39	13	41	4.0
20	Egmore	8	5	2	9	17	6	10	13	15	5	9	3	60	42	102	39	30	35	4.6
21	Kilpauk	8	5	4	6	10	5	10	3	5	3	6	6	35	35	71	28	31	29	3.9
22	Nungambakam	6	5	11	7	8	8	9	11	9	6	5	6	41	50	91	28	39	33	3.6
23	Chintadripet	9	7	10	9	12	10	12	12	12	4	10	1	54	54	108	39	42	40	5.1
24	Tiruvateswarpet.	10	8	9	18	22	14	18	8	11	10	4	5	64	78	137	39	48	44	4.7
25	Chepauk	6	6	1	4	6	7	4	6	8	4	9	6	37	30	67	39	39	39	3.3
26	Triplicane	9	6	4	4	6	7	7	2	3	1	11	4	33	31	64	32	34	33	3.9
27	Amir Mahal	6	4	9	8	13	9	4	5	11	3	1	...	40	33	73	39	35	37	4.7
28	Mirshabpet	26	15	15	21	15	21	19	5	15	14	20	6	98	94	192	71	70	70	7.0
29	Royapettah	11	11	10	14	8	15	9	10	8	13	20	10	59	80	139	34	50	42	5.1
30	Mylapore	19	6	3	7	3	5	2	8	7	2	6	12	42	38	80	39	37	38	5.5
Total		279	215	253	248	247	216	202	203	214	201	223	164	1,382	1,288	2,670	41	42	41	4.8

* Includes 38 and 18 deaths in the Government Royapuram and General Hospital of patients admitted from mofussil and destitutes.

Annual Form No. XIV.—Deaths registered from "TUBERCLE" including Tubercle of the Lungs by divisions during each month of the year 1933.

Divisions.	Districts.	3												4		5		Mean ratio per 1,000 during previous five years.					
														Ratio of deaths per 1000 of population.		Ratio of deaths per 1000 of population.							
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Males.	Females.						
1	Royapuram	...	...	3	2	2	...	2	1	3	5	5	1	14	10	24	13	0.9	1.1	1.3	0.9	1.1	1.0
2	Tondiarpet	...	...	3	1	1	...	1	...	9	5	4	4	22	11	33	1.7	0.9	1.3	1.7	0.9	1.3	1.4
3	Washermanpet	...	...	...	2	4	3	5	...	3	4	4	4	22	19	41	1.7	1.5	1.6	1.7	1.5	1.6	2.6
4	Korukkupet	...	...	3	2	3	3	7	2	2	4	4	4	29	13	42	2.2	1.1	1.5	2.2	1.1	1.5	2.5
5	Harbour	...	...	2	...	1	2	1	...	...	...	...	1	5	2	7	0.9	0.6	0.8	0.9	0.6	0.8	1.3
6	Muthialpet	...	...	...	1	1	...	1	1	...	1	...	4	4	6	10	0.5	1.0	0.7	0.5	1.0	0.8	0.8
7	Katchaleswaranpet	...	...	1	1	1	...	...	1	...	3	...	3	7	2	9	1.7	0.8	1.4	1.7	0.8	1.4	1.7
8	Kothawal Bazaar	...	...	3	3	3	...	2	...	...	3	3	2	20	12	32	2.0	1.3	1.7	2.0	1.3	1.7	1.9
9	Ammen Koil	...	...	3	3	3	...	2	...	...	3	3	2	15	13	25	1.4	1.3	1.4	1.4	1.3	1.4	1.4
10	Seven Wells	...	...	5	8	6	4	2	5	2	4	2	7	19	14	23	...	0.9	0.8	...	0.9	0.8	1.2
11	Sowcarpet	...	...	...	1	...	3	1	1	...	...	1	2	3	6	9	0.7	2.9	1.3	0.7	2.9	1.3	1.8
12	Peddunaickenpet	...	...	2	3	4	3	4	4	2	6	5	4	22	24	46	2.0	2.3	2.1	2.0	2.3	2.1	2.0
13	Trevelyan Basin	...	...	2	3	1	2	2	1	...	1	1	1	7	10	17	0.7	1.1	0.9	0.7	1.1	0.9	1.4
14	Esplanade	...	...	5	3	6	2	7	1	5	3	8	7	...	3	3	...	0.9	0.8	...	0.9	0.8	1.2
15	Park Town	...	...	1	1	...	...	1	2	4	...	2	2	8	7	15	0.8	0.9	0.9	0.8	0.9	0.9	1.1
16	Perambur	...	...	2	2	3	...	2	6	3	3	5	4	20	8	28	0.9	0.9	0.9	0.9	0.9	0.9	1.0
17	Choolai	...	...	4	3	5	6	5	3	3	7	3	3	27	23	50	1.9	1.7	1.8	1.9	1.7	1.8	2.6
18	Purasawalkam	...	...	3	6	7	3	3	4	2	2	3	3	24	22	46	1.7	1.7	1.7	1.7	1.7	1.7	2.6
19	Vepery	...	...	6	5	2	6	2	6	11	7	5	7	25	41	66	2.0	4.2	2.0	2.0	4.2	2.0	2.0
20	Egmore	...	...	4	5	5	6	4	3	1	8	6	5	28	24	52	1.8	1.7	1.8	1.8	1.7	1.8	2.1
21	Kilpauk	...	...	5	1	5	4	4	2	2	3	4	7	33	13	46	2.5	1.1	1.9	2.5	1.1	1.9	1.6
22	Nungambakkam	...	...	5	7	2	4	7	3	2	4	3	5	27	19	46	1.9	1.5	1.7	1.9	1.5	1.7	1.6
23	Chintadripet	...	...	3	3	7	7	4	9	5	4	4	3	31	30	61	2.2	2.3	2.3	2.2	2.3	2.3	2.6
24	Tiruvateeswaranpet	...	...	1	1	6	4	1	2	1	2	1	1	14	11	25	0.9	0.7	0.8	0.9	0.7	0.8	1.7
25	Chepauk	...	...	2	3	4	3	2	2	3	3	3	...	6	20	26	0.6	2.6	1.5	0.6	2.6	1.5	2.2
26	Triplicane	...	...	1	1	2	...	4	3	3	4	2	2	14	12	26	1.4	1.5	1.3	1.4	1.5	1.3	1.8
27	Amir Mahal	...	...	2	3	4	...	2	1	1	1	1	...	13	9	22	1.3	0.9	1.1	1.3	0.9	1.1	1.9
28	Mirshahpet	...	...	10	2	1	8	3	3	3	...	4	9	23	25	48	1.7	1.9	1.8	1.7	1.9	1.8	1.6
29	Royapettah	...	...	6	5	6	1	3	3	1	3	2	6	20	18	38	1.2	1.1	1.1	1.2	1.1	1.1	1.4
30	Mylapore	...	...	2	1	1	...	1	3	4	...	2	2	5	12	17	0.5	1.2	0.8	0.5	1.2	0.8	1.5
Total		67	61	89	86	94	88	80	79	78	90	87	103	561	450	1011	1.6	1.5	1.6	1.6	1.5	1.6	1.9

* Includes 23 and 50 deaths in the Government Royapuram and General Hospital of patients admitted from Meffual and destitutes.

1		2		3			4		5		6									
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of Deaths per 1,000 of population.		Mean ratio per 1000 during previous five years.	
														Males.	Females.	Total.	Males.	Females.		Total.
1	Royapuram	18	19	13	19	14	11	14	14	5	4	14	20	71	89	160	6.5	8.1	7.3	7.1
2	Tondiarpet	27	17	23	16	15	18	19	17	18	25	35	26	137	119	256	10.4	9.4	9.9	8.6
3	Washermanpet	24	...	36	24	20	27	15	22	18	18	28	33	134	131	265	10.5	10.4	10.3	10.9
4	Korukkupet	21	...	22	20	20	19	19	23	10	20	21	37	115	117	232	8.7	9.5	9.1	8.6
5	Harbour	4	6	3	5	11	5	...	4	9	7	12	8	28	34	74	7.3	10.6	8.5	10.3
6	Muthialpet	7	8	1	4	6	6	4	6	5	5	6	5	40	35	63	3.3	6.0	4.4	6.9
7	Katchaleswaranpet	14	6	8	2	14	7	6	6	10	12	7	11	60	43	103	8.8	7.3	8.1	8.5
8	Kohwal Bazaar	1	5	2	3	4	...	...	2	3	2	7	5	17	17	34	4.2	6.7	5.2	6.3
9	Ammen Koil	26	18	23	30	13	10	10	20	11	8	24	16	111	98	209	11.0	10.7	10.9	10.4
10	Seven Wells	23	18	22	18	21	15	14	14	12	24	17	31	115	101	216	11.0	10.7	10.6	11.2
														*8	*5	*13				
11	Sowcarpet	4	5	2	3	4	4	3	4	1	6	5	6	21	26	47	5.0	8.6	6.5	8.1
12	Peddunaickenpet	20	17	14	29	19	9	14	22	18	22	29	40	145	108	253	4.0	10.4	11.3	10.3
13	Trevelyan Basin	9	11	19	10	24	13	14	7	9	8	20	26	105	65	170	10.8	7.0	9.0	9.7
14	Esplanade	5	6	7	6	5	5	6	2	6	9	6	3	16	4	20	6.7	2.5	5.1	12.3
														*36	*10	*16				
15	Park Town	15	16	11	12	12	14	12	6	6	14	18	17	80	73	153	8.3	9.6	8.9	9.1
16	Perambur	29	32	28	35	49	31	25	27	29	29	33	37	221	163	384	9.5	7.9	8.8	9.9
17	Choolai	25	22	25	33	33	24	22	25	33	31	33	42	177	171	348	12.4	12.9	12.7	12.9
18	Purasawakam	26	32	31	21	21	21	29	19	23	31	23	25	134	168	302	9.6	12.8	11.2	11.2
19	Vepery	28	15	22	16	25	25	17	16	15	19	19	27	146	95	241	11.8	9.7	10.9	10.1
20	Egmore	14	12	12	27	25	11	15	24	14	16	25	19	108	109	217	7.0	7.8	7.4	7.8
21	Kilpauk	14	12	13	5	10	10	12	12	8	14	18	23	77	74	151	5.9	6.6	6.2	7.1
22	Nungambakkam	13	10	14	18	25	19	12	20	18	9	16	27	108	95	203	7.4	7.5	7.5	6.8
23	Chintadripet	28	22	24	19	26	23	23	17	20	21	30	28	143	138	281	10.3	10.7	10.5	10.0
24	Tiruvateswaranpet.	16	13	28	14	22	41	30	15	21	17	23	49	161	128	289	9.9	8.4	9.2	7.0
25	Chepauk	7	7	11	7	10	8	9	6	3	13	15	13	61	48	109	6.5	6.2	6.1	7.4
26	Triplicane	12	9	15	11	12	11	7	7	8	11	21	9	67	66	133	6.5	6.2	6.1	7.4
27	Amir Mahal	20	7	9	19	16	11	12	10	14	20	8	28	85	66	133	6.5	7.2	6.8	6.9
28	Mirshabpet	42	34	30	29	23	21	24	21	20	22	31	28	166	168	174	8.4	9.4	8.9	7.7
29	Royapettah	22	14	30	24	26	18	21	23	22	21	40	41	157	145	302	12.6	12.5	12.2	8.9
30	Mylapore	13	11	15	18	10	16	13	16	8	18	22	25	97	88	185	8.9	8.5	8.7	6.7
	Total	527	395	513	497	534	453	423	427	411	476	603	708	3,147	2,820	5,967	9.2	9.2	9.2	8.8

* Includes 18 and 46 deaths in the Government Royapuram and General Hospital of patients admitted from moffussil and destitutes.

Annual Form No XVI.—Deaths registered from "INJURIES" by divisions during each month of the year 1933.

Divisions	Districts.	3												4			5			Mean ratio per 1000 during previous five years.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Total.	
1	Royapuram	...	...	...	...	...	...	...	...	...	...	...	...	6	...	6	0.5	...	0.3	0.3
2	Tondiarpet	...	...	...	...	...	...	...	...	...	...	...	...	9	...	9	0.7	0.6	0.6	0.3
3	Washermanpet	...	...	...	...	...	...	...	...	...	...	...	...	8	...	8	0.5	0.3	0.5	0.4
4	Korukkupet	...	...	...	...	...	...	...	...	...	...	...	...	7	...	7	0.5	0.2	0.4	0.5
5	Hartour	...	...	...	...	...	...	...	...	...	...	...	...	5	...	5	0.9	...	0.6	0.7
6	Muthialpet	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4	0.5	...	0.3	0.3
7	Katchaleswarpet	...	...	...	...	...	...	...	...	...	...	...	...	5	...	5	0.7	0.3	0.6	0.5
8	Kothawal Bazaar	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	0.5	0.4	0.5	0.5
9	Ammen Koil	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	0.3	0.1	0.2	0.2
10	Seven Wells	...	...	...	...	...	...	...	...	...	...	...	...	10	...	10	1.0	0.3	0.6	0.4
11	Sowcarpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Peddunaickenpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Trevelyan Basin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Esplanade	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Park Town	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Perambur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	Choolai	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Purasawalkam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	Vepery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Egmore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Kilpauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22	Nungambakam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Chintadripet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	Tiruvateeswarpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Chepauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	Triplicane	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	Amir Mahal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	Mirahibpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Royapettah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Mylapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		29	24	31	17	26	21	29	23	24	19	20	37	201	102	303	0.6	0.3	0.5	0.4

* Includes 1 and 46 deaths in the Government Royapuram and General Hospital of patients admitted from moffussil and destitutes.

Annual Form No. XV/II.—Deaths registered from "CHILD BIRTH" by divisions during each month of the year 1933.

DIVISIONS.	Districts.												3			4		5		Mean ratio per 1000 during previous five years.										
													Total.		Ratio of Deaths per 1,000 of live births delivered.		Total.													
													Males.	Females.	Males.	Females.														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	Royapuram	...	1	2	...	1	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
2	Tondiarpet	...	2	1	...	1	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
3	Washermanpet	...	3	1	...	1	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
4	Korukkupet	...	2	1	...	1	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
5	Harbour	...	1	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
6	Muthialpet	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
7	Katchaleswarapet	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
8	Kothawal Bazaar	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	Annam Koil	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Seven Wells	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	Sowcarpet	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	Peddunaickenpet	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	Trevelyan Basin	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	Esplanade	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Park Town	...	3	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
16	Perambur	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
17	Chicolai	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
18	Purasawalkam	...	1	...	...	3	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
19	Vepery	...	...	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	Egmore	...	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21	Kilpauk	...	2	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
22	Nungambakkam	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
23	Chintadripet	...	2	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
24	Tiruvaleswarapet	...	3	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
25	Chepak	...	1	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
26	Triplacane	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
27	Amir Mahal	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
28	Mirahibpet	...	3	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
29	Royapettah	...	...	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
30	Mylapore	...	2	...	...	1	...	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...	1	...
	Total.	29	20	20	19	32	37	23	29	21	40	32	29	...	...	331	...	...	116	...	...	...	...	...	...	...	...	...	...	...

Annual Form No. XVIII.—Deaths registered from "Other Causes" by divisions during each month of the year 1933.

1	2	3												4		5		6		
Divisions.	Districts.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.		Ratio of deaths per 1000 of population.		Mean ratio per 1,000 during five years.		
														Males.	Females.	Males.	Females.			
1	Royapuram	56	26	24	41	47	40	30	22	33	34	29	41	207	216	423	18.9	19.6	19.3	17.3
2	Tondiarpet	61	47	38	52	45	29	48	47	38	39	77	61	313	269	582	23.7	21.1	22.5	19.9
3	Washermanpet	41	56	45	20	29	23	40	25	32	49	59	48	263	204	467	20.1	16.2	18.2	17.0
4	Korukkupet	39	46	33	31	25	25	21	34	44	39	59	58	230	234	464	17.4	19.0	18.2	15.5
5	Harbour	21	16	12	9	13	12	6	12	12	12	15	15	83	70	153	15.1	21.7	17.6	14.5
6	Muthialpet	16	13	10	10	14	9	15	14	13	14	20	13	93	68	161	11.1	11.6	11.3	9.8
7	Katchaleswarannpet	22	14	21	21	14	16	7	13	13	18	21	19	95	164	199	13.9	17.8	15.7	13.5
8	Kothwal Bazaar	15	4	10	12	3	6	6	11	9	7	11	10	50	54	104	12.5	21.3	15.9	13.1
9	Annen Koil	25	31	29	28	22	15	9	14	18	23	27	31	139	133	272	13.8	14.6	14.2	14.3
10	Seven Wells	39	23	37	20	33	23	28	30	12	24	34	37	150	121	271	14.4	12.2	12.4	18.1
														*52	*22	*74				
11	Sowcarpet	9	11	7	8	12	13	2	6	6	6	9	7	54	42	96	13.0	13.8	13.3	14.6
12	Peddunaickenpet	35	23	28	24	29	22	13	25	12	27	42	50	176	154	330	15.8	14.8	15.3	15.0
13	Trevelyan Basin	87	26	22	29	32	27	16	23	22	26	27	24	148	164	312	15.3	17.8	16.5	15.2
14	Esplanade	24	20	21	15	19	20	15	34	20	16	20	24	18	17	35	7.7	10.7	9.0	10.8
														*178	*36	*213				
15	Park Town	35	28	26	24	23	26	14	28	22	13	25	29	157	136	293	16.3	18.0	17.1	15.8
16	Perambur	65	43	60	57	53	49	44	33	36	56	55	78	333	296	629	14.4	14.3	14.4	12.7
17	Choolai	41	29	29	31	27	25	24	30	34	36	46	56	204	204	408	14.3	15.4	14.8	14.6
18	Purasawalkam	24	27	36	22	22	19	29	22	22	24	37	48	165	177	342	11.8	13.5	12.6	12.9
19	Vepery	36	13	20	26	27	15	26	25	26	30	40	33	189	138	327	15.3	14.1	14.8	15.3
20	Egmore	51	38	39	23	30	28	39	43	38	47	54	58	254	234	488	16.5	16.7	16.6	14.2
21	Kilpauk	44	29	26	23	31	17	26	24	31	29	47	38	200	165	365	15.3	14.7	15.0	13.7
22	Nungambakkam	45	29	29	26	29	17	15	28	30	36	30	39	170	183	353	11.7	14.4	13.0	11.3
23	Chintadripet	32	42	40	21	43	36	42	45	34	37	37	63	253	219	472	18.2	16.9	17.6	15.6
24	Tiruvatesvaranpet	54	72	69	77	46	40	44	54	49	58	63	81	378	327	705	23.3	21.6	22.5	18.3
25	Chepauk	24	28	12	28	24	17	25	15	17	28	24	31	145	128	273	15.4	16.6	16.0	14.5
26	Triplicane	20	19	19	30	19	17	17	13	24	27	39	31	148	127	275	14.1	13.8	14.1	15.2
27	Amir Mahal	22	36	52	28	38	29	37	31	45	40	52	57	228	219	477	22.5	26.3	24.3	18.6
28	Mirshahibpet	63	41	50	37	40	35	39	29	36	49	75	81	299	276	575	21.6	20.5	21.0	16.6
29	Royapettah	42	40	47	37	44	25	37	30	37	36	46	52	229	225	454	13.2	14.1	13.7	11.7
30	Mylapore	36	18	41	21	18	18	26	38	24	32	28	46	184	174	358	16.9	16.7	16.8	14.2
Total		1096	896	912	831	856	694	749	797	790	912	1158	1259	5785	5,165	10,950	16.9	17.0	16.9	15.3

* Includes 14 and 213 deaths in the Government Ryapuram and General Hospital of patients admitted from medical and Destitutes.

Annual Form No. XIX—Comparing the deaths from some of the principal diseases during the year with the deaths during the previous 5 years.

Years.	Cholera.		Small-Pox.		Measles.		Plague.		Malaria.		Enteric Fever.		Other fevers.		Dysentery and Diarrhoea.		Tuberculosis other than Pulmonary.		Respiratory Diseases.				Injuries.		Deaths from child births.		All other causes.		Total Deaths.	
	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000 Births.	Deaths.	Ratio per 1,000.	Deaths.	Ratio per 1,000.		
1928	708	1.0	251	0.5	59	0.1	...	...	1599	3.0	177	0.3	1555	2.9	3931	7.4	163	0.4	1649	3.2	6879	13.0	262	0.5	366	15.4	9116	17.2	26715	50.5
1929	16	1.3	506	1.0	68	0.1	...	...	681	1.3	120	0.2	1731	3.0	3127	5.9	17	0.03	1354	2.6	5324	10.1	242	0.5	304	13.1	8915	16.9	22415	42.4
1930	43	0.03	188	0.4	16	0.03	...	...	283	0.5	126	0.2	1961	3.7	3056	6.8	151	0.3	924	1.7	5256	9.9	249	0.5	328	12.7	10258	19.4	22839	43.2
1931	153	0.08	24	0.04	3	0.006	...	...	277	0.4	166	0.3	1748	2.7	2746	4.2	177	0.3	843	1.3	5743	8.9	275	0.4	299	11.6	10708	16.5	23162	35.8
1932	5	0.008	176	0.3	16	0.02	1	0.002	165	0.3	101	0.2	1646	2.5	2644	4.1	170	0.3	747	1.2	5509	8.5	267	0.4	279	10.0	10564	16.3	22990	34.4
Mean of the last 5 years...	185	0.3	229	0.4	32	0.05	0.2	0.03	601	0.9	140	0.2	1728	2.7	3101	4.8	136	0.2	1103	1.7	5742	8.9	259	0.4	315	11.0	9912	15.3	23484	36.3
1933	62	0.1	537	1.3	44	0.07	...	...	140	0.2	90	0.1	205	3.2	2670	4.1	156	0.2	855	1.3	5967	9.2	303	0.5	331	11.6	10950	16.9	24500	37.9

Annual Form No. XX—Table of Deaths for 1933 arranged in accordance with the international list (Fourth Revision 1929) as adopted for use in England and Wales, Scotland and Northern Ireland¹.

Classification No.	Causes of death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
I. INFECTIOUS AND PARASITIC DISEASES.														
1	Typhoid Fever	4	7	7	4	8	9	5	6	11	11	12	6	90
6	Small-pox	58	95	174	147	79	53	81	52	44	30	10	16	839
7	Measles	4	5	5	7	6	2	4	3	3	2	2	3	44
9	Whooping Cough	3	3	7	3	6	4	2	4	7	2	6	8	55
10	Diphtheria	...	2	3	1	...	...	...	2	2	2	...	...	12
11	Influenza (Including influenza Pneumonia)	...	...	...	...	...	...	...	1	1	4	1	3	10
12	Cholera	...	...	...	...	...	...	...	...	...	2	18	42	62
13	Dysentery	163	124	140	139	137	124	110	106	102	106	135	94	1481
15	Erysipelas	...	2	4	...	4	1	1	1	...	...	2	1	16
16	Acute Poliomyelitis	...	...	...	1	...	...	...	...	2	...	1	...	4
18	Cerebro-spinal meningitis	...	...	...	...	...	...	...	...	...	1	...	...	1
21	Rabies	...	...	...	...	...	...	...	...	...	...	...	...	6
22	Tetanus	4	4	3	8	6	2	5	7	8	6	11	6	70
23	Tuberculosis of the Respiratory System	47	60	74	67	83	72	79	68	68	82	74	91	853
24	Tubercle of Larynx	...	...	2	...	...	...	1	...	...	...	...	...	1
25	Tuberculous meningitis	...	...	...	...	...	...	...	...	...	...	...	...	3
26	Tuberculosis of Intestine and Peritoneum	18	11	11	15	7	15	8	11	7	6	8	8	125
27	" " bones and joints	1	...	2	1	2	1	1	...	2	1	3	2	14
29	" " Lymphatic System	1	...	...	3	2	...	1	...	3	7	8	15	66
33	Leprosy	6	3	9	1	2	...	1	2	3	...	3	2	20
34	Syphilis	1	3	2	...	2	1	1	...	4	...	...	1	6
34-a	Congenital Syphilis	...	...	1	...	...	...	...	...	...	...	...	...	2
35	Other Venereal Diseases	1	...	1	...	...	...	...	...	...	...	...	...	4
35 : 2	Gonorrhoea	1	...	1	...	...	...	...	...	...	...	...	...	2
36	Purulent Infection—	...	...	...	...	...	...	...	...	...	...	...	...	2
a	Septicaemia	14	9	9	16	13	12	14	7	11	7	7	8	127
b	Sepsaemia	...	...	1	...	1	...	...	...	1	...	...	...	3
b	Pyæmia	2	3	4	6	7	6	2	5	3	4	6	4	52
c	Gas Gangrene	...	...	1	1	...	...	...	...	...	...	...	...	2
38	Malaria	12	9	10	14	15	10	7	4	15	14	12	11	133
39	Malarial cachexia	1	...	...	1	1	...	...	1	2	...	...	1	16
39	Kala Azar	2	...	4	1	...	3	...	1	...	2	...	1	1
40	Rat-bite fever	...	...	...	...	...	1	...	...	...	...	...	...	1
40	Ankylostomiasis	6	12	7	5	6	6	4	6	8	1	4	5	65
42	Flarial Elephantiasis	...	...	...	...	...	...	...	...	...	...	...	...	2
42	Filariasis	1	1	2	...	2	1	...	2	...	3	...	2	14
43	Worms	...	2	...	...	3	1	2	2	...	1	...	2	15
43	Sprue	...	1	...	...	1	...	...	1	4	...	...	...	3

Infectious and Parasitic Diseases.

[illegible]

Annual Form No. XX—Table of Deaths for 1933 arranged in accordance with the international list (Fourth Revision 1929) as adopted for use in England and Wales, Scotland and Northern Ireland.—*contd.*

Classification No.	Causes of death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Diseases of the Nervous System and Sense Organs— <i>Contd.</i>	VI. DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS—(Contd.)													
	82-a (2) Apoplexy	4	3	5	2	...	1	1	1	2	1	1	1	22
	82-b (2) Cerebral thrombosis	16	19	13	13	5	11	23	17	19	26	27	28	217
	82-c (1) Hemiplegia	10	10	4	9	6	9	11	10	13	4	13	14	113
	82-c (2) Other paralyzes of unstated origin	...	1	...	...	...	...	...	...	1	...	...	...	2
	83 General paralysis of the insane	3	1	2	...	2	...	...	...	2	1	...	...	13
	84 Other forms of insanity	2	...	2	1	2	2	1	2	1	1	...	...	13
	85 Epilepsy	66	61	54	50	37	41	26	42	39	36	61	62	575
	86 Infantile convulsions (under 5 years of age)	1	9	9	3	5	2	6	...	3	3	8	12	61
	87 Other diseases of the nervous system	1	1	...	2	1	...	...	1	1	...	...	...	6
Diseases of the Circulatory System.	87-b Neuritis	1	1	...	...	...	...	...	2	1	1	2	1	9
	88 Diseases of the eye and annexe	...	1	1	...	1	2	...	...	1	1	1	...	9
	89 Diseases of the ear and of the mastoid sinus	...	1	1	...	...	2	...	...	1	1	1	...	9
	VII. DISEASES OF THE CIRCULATORY SYSTEM.													
	90 Pericarditis	...	...	1	...	...	...	2	5	2	...	2	1	13
	92 Chronic endocarditis Valvular diseases	15	10	12	11	10	12	9	11	5	18	17	20	150
	92-4 Endocarditis not returned as acute or chronic	21	2	11	...	5	...	1	2	1	1	4	2	50
	98-c Myocarditis not distinguished as acute or chronic.	4	8	18	9	19	19	7	6	10	12	8	15	135
	94 Angina Pectoris	2	2	1	1	1	...	1	...	2	2	1	...	13
	95-b (2) Other diseases of the heart (undefined)	51	41	47	49	50	35	58	48	29	65	70	71	614
Diseases of the Respiratory System.	Cardiac dropsy	1	2	4	2	2	2	2	...	1	1	1	4	23
	Aneurysm	...	...	...	...	...	...	...	...	1	...	1	...	3
	97 Arterio-sclerosis	2	...	...	...	...	...	...	6	...	1	1	...	10
	98 Gangrene	1	2	2	2	2	3	1	3	3	2	1	5	27
	98-b Cancer of the oris	10	...	...	...	...	...	1	...	...	...	...	4	15
	99 Other diseases of the arteries	...	1	2	...	8	...	...	...	...	...	...	10	21
	100-1 Haemorrhoids	...	...	1	...	...	2	1	...	2	3	2	6	17
	101 Diseases of the Lymphatic system	10	...	2	1	2	4	2	...	1	1	...	8	33
	103 Other diseases of the circulatory system	7	2	5	...	2	5	8	...	6	2	8	1	46
	VIII. DISEASES OF THE RESPIRATORY SYSTEM.													
Diseases of the Respiratory System.	106-a Acute Bronchitis	17	9	12	9	10	6	8	15	8	13	22	16	145
	106-b Chronic Bronchitis	50	43	30	25	39	24	19	11	31	11	33	41	379
	106-c Bronchitis not distinguished as acute or chronic	6	8	10	9	2	9	9	7	10	11	15	19	104
	107 Broncho-Pneumonia	299	205	307	296	302	283	262	257	244	268	360	424	3,507
	108 Lobar Pneumonia	63	49	48	60	75	50	41	52	41	50	60	66	655

Diseases of the Respiratory System.		71	63	75	73	82	74	66	51	67	84	79	110	894
109	Pneumonia (not otherwise defined)	...	...	...	...	...	...	...	...	1	1	3	1	894
110-1	Empyema	...	...	...	...	...	...	...	...	2	2	1	4	8
110-2	Other Pleurisy	...	...	...	...	...	...	...	...	2	2	1	4	36
111-1	Hypostatic congestion of lung	...	...	...	...	...	...	...	...	1	1	3	...	13
112	Asthma	14	13	20	17	17	11	11	23	14	9	24	24	197
113	Pulmonary Emphysema	...	...	...	...	...	...	...	...	3	...	2	3	22
114	Other diseases of the respiratory system	2	3	2	2	1	2	2	4	2	3	2	3	28
IX. DISEASES OF THE DIGESTIVE SYSTEM.														
115-1	Diseases of the teeth and gums	...	...	1	2	...	...	...	...	...	...	...	...	3
115-3	Diseases of the tonsils	...	...	...	...	...	...	...	...	2	...	2	3	8
116	" Oesophagus	...	...	...	...	...	...	...	...	2	...	2	2	8
117 (a)	Ulcer of the stomach	8	9	6	4	12	4	...	10	12	6	9	5	11
117 (b)	" of the duodenum	4	4	4	9	2	4	...	5	5	4	6	12	85
118-1	Gastritis	30	17	10	18	11	2	...	6	9	5	11	11	59
118-2	Obstruction of Pylorus	...	...	...	...	...	1	...	...	3	...	1	...	180
119-120	Diarrhoea and Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	6
" a-1	Colitis	81	61	95	75	81	1	...	61	83	68	46	40	808
" a-2	Infantile Diarrhoea	3	3	1	1	1	1	...	6	4	6	7	10	45
121	Intestinal Toxaemia	32	27	22	33	28	31	33	80	25	21	84	20	336
122	Appendicitis	...	...	...	...	...	...	...	...	2	...	2	2	9
122-a (1)	Hernia	5	2	3	2	2	2	...	2	1	...	1	2	22
122-b	Strangulated Hernia	1	...	1	1	3	...	...	...	...	1	...	...	7
123	Intussusception	1	...	...	...	...	...	...	...	...	...	...	...	28
123-1	Other diseases of the intestines	...	...	...	...	...	...	...	...	...	...	...	...	75
123-3	Constipation	...	...	...	...	...	...	...	...	...	...	...	...	5
124 (b)	Perforation of intestine	2	...	2	1	5	1	...	4	4	1	4	...	29
125-2	Biliary Cirrhosis	23	10	19	29	4	12	15	15	18	2	16	17	17
	Cirrhosis of Liver	...	...	1	...	35	...	...	...	...	17	...	...	226
	Atrophy of Liver	...	...	...	...	...	...	...	...	...	1	...	...	2
	Cholaemia	...	...	1	...	...	...	...	...	...	...	...	...	2
	Enlargement of Liver	4	10	2	3	26	7	...	2	6	8	...	...	94
	Hepatitis	1	...	4	1	2	1	2	8	1	...	4	1	25
	Abscess of Liver	2	2	2	1	2	2	...	1	...	2	1	1	16
126	Biliary Calculi	...	...	...	...	...	...	...	...	...	...	...	...	1
127-2	Catarrhal Jaundice	...	...	...	...	...	...	...	...	...	...	...	...	66
129	Peritonitis	9	8	5	3	7	5	...	6	5	3	11	4	80
	X. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.	1	1	3	3	3	2	...	1	1	3	3	9	
Diseases of the Genito-Urinary System.														
130	Acute Nephritis—	17	10	15	12	13	9	5	10	2	12	8	15	128
131	Acute Bright's Disease	...	...	...	...	...	...	...	...	...	...	...	...	...
132	Chronic Nephritis—	29	21	32	31	28	18	13	13	26	20	19	36	286
	Renal Dropsy	7	18	12	8	5	7	4	2	3	10	11	12	99
133 (a)	Uraemia	5	2	7	4	2	6	6	5	4	15	14	4	74
133 (b)	Pyelitis	...	1	1	1	...	...	2	6	2	...	12	1	26
	Suppression of Urine	1	1	1	...	...	6	4	...	2	1	2	1	19

Annual Form No. XX.—Table of Deaths for 1933 arranged in accordance with the International list (Fourth Revision 1929) as adopted for use in England and Wales, Scotland and Northern Ireland.—*contd.*

Classification No.	Causes of death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
	X. NON-VENERIAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA—(Contd.)													
134 (a)	Renal Calculus	...	...	...	...	...	...	...	...	...	...	...	...	2
134 (b)	Calculi of the bladder	...	...	...	...	...	...	...	...	...	...	...	...	7
135 (a)	Cystitis	11	1	...	4	...	4	3	10	...	1	4	1	38
135 (b)	Incontinence of Urine	...	...	...	...	...	...	...	...	...	...	...	...	1
136 (a)	Stricture of the Urethra	7	1	2	4	...	3	1	2	1	4	1	...	27
136 (b)	Rupture of Urethra	...	...	1	...	...	...	...	...	...	...	...	...	3
137	Diseases of the Prostate	2	...	...	...	...	1	...	...	...	...	...	...	5
138	Abscess of the Scrotum	...	...	...	...	3	1	...	...	...	...	3	4	6
	Hydrocele	...	...	...	...	...	...	...	2	...	1	...	...	4
	Orchitis	...	...	...	1	...	...	...	...	...	...	...	...	4
	Dysmenorrhoea	...	...	...	...	...	...	2	...	1	...	...	2	3
139 (b)	Menorrhagia	4	...	...	1	...	...	...	...	...	...	...	1	8
	XI. DISEASES OF PREGNANCY CHILD BIRTH AND THE PUERPERAL STATE.													
141-2	Abortion	...	...	1	1	...	1	...	...	2	3	2	2	12
143	Vesicular mole	...	...	...	1	...	...	...	...	...	...	...	...	1
144	Puerperal Haemorrhage	1	1	...	...	2	...	1	1	1	...	1	...	8
a	Placenta praevia	...	1	2	1	...	...	...	...	1	...	2	...	8
144-b	Post Partum Haemorrhage	1	2	2	1	2	2	1	2	2	4	2	2	22
	Puerperal anaemia	...	...	...	1	2	...	1	...	2	...	1	...	7
	Retained Placenta	1	...	...	1	...	...	...	...	...	1	2	1	8
145	Puerperal sepsis	21	10	11	10	15	20	11	21	12	20	14	13	178
146 (1)	Eclampsia	1	3	1	...	4	2	8	2	...	7	2	3	33
146 (2)	Albuminuria of Pregnancy	...	...	1	1	2	...	...	...	...	...	2	...	1
147	Other Toxaemias of Pregnancy	2	1	1	1	2	...	...	1	2	1	2	5	19
148-b	Sudden death after delivery	1	1	...	1	1	1	...	...	...	2	2	1	10
149	Caesarean section	...	1	1	1	2	1	...	2	...	...	1	...	11
	Difficult labour	1	1	1	1	2	2	1	2	...	...	...	...	11
	Prolonged labour	...	...	1	1	2	2	1	...	...	...	1	...	8
	XII. DISEASES OF THE SKIN AND CELLULAR TISSUE.													
151	Carbuncle	4	1	2	2	7	6	5	4	2	1	1	...	35
152 (1)	Cellulitis	7	4	4	3	6	3	7	6	3	2	10	3	58
152 (2)	Multiple Abscess	2	2	4	8	5	3	7	6	8	4	12	4	65
153	Other diseases of the skin	3	...	4	4	3	2	1	3	...	...	2	1	23
	Elephantiasis	...	...	...	...	...	...	...	...	...	...	...	...	1
	Ulcer (undefined)	...	2	1	1	...	...	1	...	1	...	1	...	7

Diseases of Bones & Joints.		XIII. DISEASES OF BONES AND ORGANS OF LOCOMOTION.													
154	Osteomyelitis	...	...	...	...	...	...	...	...	...	...	...	...	...	7
155	Periostitis	...	...	...	...	...	...	...	...	...	...	...	...	...	6
156-a	Acute Arthritis	...	...	...	...	...	...	...	...	...	...	...	...	...	12
Congenital Malformation.		...	...	...	...	...	...	...	...	...	...	...	...	...	...
157-c (3)	Imperforate Anus	...	...	...	...	...	...	...	...	...	...	...	...	...	10
157-c (5)	Congenital malformation	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Diseases of early Infancy.		...	...	...	...	...	...	...	...	...	...	...	...	...	...
158	XV. DISEASES OF EARLY INFANCY.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Congenital debility	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Inanition	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malnutrition	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Marasmus	...	...	...	...	...	...	...	...	...	...	...	...	...	...
159	Premature birth	...	...	...	...	...	...	...	...	...	...	...	...	...	69
160	Injury at birth	...	...	...	...	...	...	...	...	...	...	...	...	...	110
161-a	Atelectasis	...	...	...	...	...	...	...	...	...	...	...	...	...	77
	Asphyxia neonatorum	...	...	...	...	...	...	...	...	...	...	...	...	...	311
161-b	Icterus neonatorum	...	...	...	...	...	...	...	...	...	...	...	...	...	1939
		...	...	...	...	...	...	...	...	...	...	...	...	...	15
		...	...	...	...	...	...	...	...	...	...	...	...	...	168
		...	...	...	...	...	...	...	...	...	...	...	...	...	83
		...	...	...	...	...	...	...	...	...	...	...	...	...	5
Old age.		...	...	...	...	...	...	...	...	...	...	...	...	...	...
162-b	XVI. OLD AGE.	...	...	...	...	...	...	...	...	...	...	...	...	...	1587
	Old age	...	...	...	...	...	...	...	...	...	...	...	...	...	...
163	XVII. DEATHS FROM VIOLENCE.	...	...	...	...	...	...	...	...	...	...	...	...	...	7
	Suicide by solid or liquid poisons and corrosive substances.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
165	" by hanging	...	...	...	...	...	...	...	...	...	...	...	...	...	12
166	" by drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	14
168	" by cutting or piercing instruments	...	...	...	...	...	...	...	...	...	...	...	...	...	3
171	" by other means	...	...	...	...	...	...	...	...	...	...	...	...	...	5
173	Homicide by firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	1
175	" other means	...	...	...	...	...	...	...	...	...	...	...	...	...	2
176	Attacks by Venomous animals.—	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Snake bite	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sting of Scorpion	...	...	...	...	...	...	...	...	...	...	...	...	...	...
177	Food poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179	Other acute accidental poisoning (not by gas)	...	...	...	...	...	...	...	...	...	...	...	...	...	...
181	Accidental Burns	...	...	...	...	...	...	...	...	...	...	...	...	...	...
183	" Drowning	...	...	...	...	...	...	...	...	...	...	...	...	...	...
186	" Injury	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Motor accident	...	...	...	...	...	...	...	...	...	...	...	...	...	...
189	Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...
191	Sun-Stroke	...	...	...	...	...	...	...	...	...	...	...	...	...	...
194	Other and unstated forms of accidental violence.	...	...	...	...	...	...	...	...	...	...	...	...	...	...
194-2	Accidental fracture	...	...	...	...	...	...	...	...	...	...	...	...	...	...
195	Violent deaths of unstated nature	...	...	...	...	...	...	...	...	...	...	...	...	...	...
198	Hanging (Legal execution)	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Annual Form No. XX--Table of Deaths for 1933 arranged in accordance with the international list (Fourth revision 1929) as adopted for use in England and Wales, Scotland and Northern Ireland--*contd.*

Classification No.	Causes of Death.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Ill-defined diseases.	XVIII. ILL-DEFINED DISEASES.													
	199 Sudden death	...	...	...	...	1	...	1	...	...	1	1	1	5
	200 (1) Heart failure	45	31	27	35	23	28	41	33	23	30	39	48	403
	Weak heart	1	...	...	...	...	...	...	...	...	...	3	1	5
	200 (2) Other ill-defined causes	...	1	...	...	...	3	2	...	2	...	...	...	5
	Abdominal disease	5	4	...	...	2	...	...	...	2	6	2	4	29
	Ascites	11	7	11	5	3	...	6	9	3	4	10	10	79
	Coma	...	...	...	1	...	...	...	...	...	...	...	...	1
	Debility age 10-50 years	18	16	32	25	48	57	39	27	47	32	22	27	390
	Inanition age 10 years and over	8	2	2	1	1	...	...	3	2	4	3	1	27
	Malnutrition age 10 years and over	...	1	...	...	...	...	...	...	1	...	...	1	3
	Marasmus age 10 years and over	...	...	...	...	...	...	...	...	...	1	...	...	1
	Pyrexia uncertain origin	163	189	170	162	168	174	168	147	144	147	194	223	2049
	Cause not specified	3	...	...	...	4	...	2	7	4	2	2	1	25
	200 (3) Post-operative shock	...	1	2	1	...	...	...	1	...	...	1	1	7
	Unknown	3	...	2	3	2	1	3	2	1	...	...	2	21

TABLE—A.

Comparative Statement of deaths from some of the principal diseases during the past 13 years.

Year.	Births.		Deaths.		Cholera.		Small-Pox.		Malaria.		Other Fevers.		Other Infectious diseases.		Plague.		Dysentery and Diarrhoea.		Respiratory diseases.		Infantile mortality under 1 year.		Children between 1 and 5 years.		Still Births.
	No. of Births Registered exclusive of Still Births	Birth-rate.	No. of Deaths registered exclusive of Still Births	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.	
1922	21,650	41.1	22,175	42.7	17	0.03	1121	2.1	763	1.4	1325	2.5	612	1.2	1	0.002	4167	7.9	4911	9.3	6669	308.0	4113	100.4	1274
1923	22,975	43.6	19,933	37.9	21	0.04	151	0.3	783	1.5	769	1.5	363	0.7	1	0.002	3778	7.2	4610	8.7	5837	254.0	3272	79.9	1312
1924	23,275	44.2	21,960	41.7	97	0.4	197	0.4	971	1.8	681	1.3	982	1.9	...	...	3700	7.0	5598	10.6	6148	264.1	3810	93.0	1274
1925	23,070	43.6	25,000	47.3	203	0.4	763	1.4	198	2.5	1039	2.0	682	1.3	...	...	4631	7.6	6416	12.1	6431	278.8	4656	112.9	1335
1926	22,000	41.6	23,776	45.0	98	0.2	60	0.1	1342	2.6	1343	2.7	565	1.1	...	...	3867	7.3	6470	12.2	6145	279.3	4120	100.0	1105
1927	24,760	46.8	22,361	42.3	512	1.0	32	0.06	1367	2.6	1259	2.1	...	...	...	...	3263	6.2	5816	12.9	5888	237.6	3806	92.3	1258
1928	23,729	44.9	26,715	50.5	708	1.3	251	0.5	1599	3.0	1732	3.2	1056	2.0	...	...	3927	7.4	8691	16.4	6806	286.8	4864	118.0	1321
1929	23,124	43.7	22,415	42.4	16	0.03	506	1.0	681	1.3	1861	3.5	612	1.2	...	...	3127	5.9	6695	12.7	5933	256.6	3875	94.0	1287
1930	25,662	48.5	22,839	43.2	43	0.08	188	0.4	283	0.5	2097	3.9	411	0.8	...	...	3056	5.8	6331	12.0	6258	243.9	3633	88.1	1260
1931	25,738	49.8	23,162	35.8	153	0.2	24	0.04	277	0.4	1914	3.0	1347	2.1	...	...	2746	4.2	5743	8.9	6391	248.3	3767	50.3	1318
1932	27,996	43.3	22,290	31.4	5	0.008	176	0.3	165	0.3	1747	2.7	1403	2.2	1	0.002	2644	4.1	5509	8.5	6622	236.5	3609	48.2	1326
1933	28,533	44.1	24,500	37.9	62	0.1	837	1.3	140	0.2	2185	3.3	519	0.8	...	...	2670	4.1	5967	9.2	7540	261.3	4154	67.7	1380

TABLE—B.
Rainfall.

Years.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
	January to March.	April to June.	July to September.	October to December.	
1928	Inches. 3.30	Inches. 0.33	Inches. 16.15	Inches. 31.69	Inches. 51.47
1929	8.29	2.77	13.72	27.64	52.42
1930	3.69	11.24	8.71	55.05	78.69
1931	0.05	6.76	17.94	33.73	58.53
1932	0.69	2.31	7.28	36.31	46.59
1933	3.42	0.98	5.20	30.58	40.18

TABLE—C.

Table of Births, Deaths and Infantile Death-rates for different Communities in the City of Madras for 1932 and 1933.

Race or Caste.	Population according to the census of 1931.	1933.						1932.					
		Total No. of Births.	Birth-rate.	Total No. of Deaths.	Death-rate.	Infantile Deaths.	Infantile Death-rate.	Total No. of Births.	Birth-rate.	Total No. of Deaths.	Death-rate.	Infantile Deaths.	Infantile Death-rate.
Europeans	3,581	27	7.5	40	11.2	2	74.1	56	15.6	37	10.3	7	125.0
Anglo-Indians	10,657	391	36.7	230	21.6	47	120.2	398	37.4	217	20.4	41	103.0
Indian Christians	39,884	1,470	36.9	1,067	26.8	222	151.0	1,379	34.6	979	24.6	180	130.5
Hindus	5,20,176	23,419	45.0	23,066	38.6	6,412	273.8	23,075	44.4	18,313	35.2	5,862	254.0
Mahomedans	70,031	3,223	46.0	3,096	44.2	857	265.9	3,088	44.1	2,741	39.1	532	172.3
Others	2,901	3	1.0	1	0.34	...	...	...	...	3	1.0	...	...
Total	6,47,280	28,533	44.1	24,500	37.9	7,540	264.3	27,996	43.3	22,290	34.4	6,622	235.5

TABLE-D.

Table of Birth and Death rates of principal sub-divisions of Hindu Community for 1932 and 1933.

Name of the Community.	Population.	1933				1932				
		Total Births.	Birth Rate.	Total Deaths.	Death Rate.	Total Births.	Birth Rate.	Total Deaths.	Death Rate.	
Brahmins	...	58,761	1,726	29.4	1,300	22.1	1,814	31.4	1,211	20.7
Chetties	...	37,949	1,655	43.6	1,602	42.2	1,756	46.3	1,333	35.3
Vellalah or Mudaliars	...	86,716	4,273	49.3	3,810	43.9	3,309	38.2	2,599	29.9
Baliyah or Naidus	...	60,263	1,973	32.7	1,904	31.6	2,350	39.0	1,924	31.9
Vannia or Naickers	...	69,650	3,464	49.7	3,055	43.9	3,452	49.6	2,508	36.0
Adi-Dravidas	...	73,701	2,966	40.2	3,051	41.4	2,699	36.6	2,178	29.6
Patnavars	...	11,309	446	39.4	489	43.2	469	41.4	416	36.8
Yadaval or Idayars	...	17,022	800	47.0	721	42.4	1,296	76.1	935	54.9
Viswakarma Brahmin or Kammalars	...	15,610	709	45.2	659	42.1	781	49.8	558	36.2

TABLE-E.

Table of Birth, Death and Infantile Death-rates by months for 1932 and 1933.

Months.	1933.							1932.				
	Total No. of Births.	Birth rate.	Total No. of Deaths.	Death rate.	Infantile Deaths.	Infantile Death rate on 1000 live births.	Total No. of Births.	Birth rate.	Total No. of Deaths.	Death rate.	Infantile Deaths.	Infantile Death rate on 1000 live births.
January	2,104	39.0	2,272	42.1	688	327.0	2,037	37.8	2,108	39.1	559	274.4
February	1,822	33.8	1,917	35.5	564	309.5	1,613	29.9	1,753	32.5	421	261.0
March	2,141	39.7	2,198	40.7	651	304.0	1,853	34.4	1,713	31.6	441	238.0
April	2,181	40.4	2,039	37.8	625	286.6	2,200	40.8	1,572	29.1	477	216.8
May	2,468	45.8	2,059	38.3	584	236.6	2,520	46.7	1,770	32.8	529	209.1
June	2,247	41.7	1,760	32.6	498	221.6	2,418	44.8	1,803	33.4	584	220.8
July	2,437	45.2	1,780	33.0	549	225.3	2,492	46.2	1,638	30.3	489	196.2
August	2,484	46.1	1,775	32.9	519	221.0	2,599	48.2	1,651	30.6	523	201.2
September	2,589	48.0	1,758	32.6	574	221.7	2,533	47.0	1,758	32.6	600	236.9
October	2,804	52.0	1,949	36.1	615	219.3	2,710	50.2	2,031	36.1	664	245.0
November	2,570	47.6	2,376	44.1	818	318.3	2,578	47.8	2,170	40.2	692	230.0
December	2,686	49.8	2,607	48.3	825	307.1	2,443	45.3	2,323	43.1	693	283.6
Total	28,533	44.1	24,500	37.9	7,540	264.3	27,996	43.3	22,290	34.4	6,622	236.5

TABLE-F.

Ratio of deaths among Children under one year of age per 1000 Live Births registered in each division for 1932 and 1933.

Divisions.	1933.		1932.	
	Infantile Mortality.	Infantile Death-rates.	Infantile Mortality.	Infantile Death-rates.
1	275	292.9	253	254.8
2	416	303.4	361	256.3
3	397	312.4	331	258.9
4	347	313.2	236	225.1
5	113	327.5	101	335.5
6	103	209.8	119	258.1
7	137	261.0	101	196.4
8	53	302.9	50	270.2
9	210	253.6	183	223.4
10	233	292.7	222	273.7
11	61	302.0	59	333.3
12	302	306.9	251	257.1
13	201	271.6	189	257.1
14	32	283.2	32	310.6
15	166	250.4	156	242.9
16	491	244.5	383	198.0
17	347	252.0	393	285.1
18	314	272.8	273	230.9
19	221	232.4	203	241.9
20	321	198.6	292	180.4
21	166	185.5	161	184.0
22	235	231.3	174	170.0
23	338	261.6	319	259.9
24	394	246.9	365	247.6
25	179	210.1	166	206.6
26	193	265.5	184	229.1
27	273	314.5	235	249.7
28	439	343.2	327	252.5
29	349	234.5	316	235.6
30	234	275.0	187	230.8
Total ...	7,540	264.3	6,622	236.5

TABLE-G.

Table of Infantile Mortality by months in the year 1933.

	Small-pox.	Measles.	Malaria.	Other fevers.	Dysentery and Diarrhoea.	Premature Birth.	Debility.	Nervous system.	Respiratory system.	All other causes.	Total of 1933.			Total of 1932.
											Males.	Females.	Total.	
January	...	6	1	...	72	201	4	56	190	124	328	360	688	559
February	...	19	..	1	52	148	6	48	135	113	308	256	564	421
March	...	31	...	40	79	145	7	46	218	85	349	302	651	441
April	...	33	3	41	66	127	5	40	198	112	313	312	625	477
May	...	10	1	29	69	131	4	32	198	109	328	266	594	529
June	...	10	1	41	53	118	3	36	172	62	257	241	498	534
July	...	14	2	57	66	117	6	24	189	73	284	265	549	489
August	...	8	1	38	67	123	3	31	172	106	285	264	549	523
September	...	7	1	37	81	140	4	36	173	95	332	242	574	600
October	...	2	...	32	67	211	6	34	169	94	356	259	615	664
November	...	1	1	39	67	240	3	52	252	162	452	366	818	692
December	...	2	1	51	43	268	5	54	296	115	468	357	825	693
Total	...	143	12	491	782	1,959	56	489	2,362	1,259	4,060	3,480	7,540	6,622

TABLE—H.
Table of percentage of Infantile Deaths from Principal causes in the year 1933.

Age Periods.	Small-pox		Measles.		Malaria.		Other Fevers.		Diarrhoea and Dysentery.		Premature Births.		Debility.		Nervous System.		Respiratory System.		All other Causes.		Total	
	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.	Total.	Ratio.
Under 7 days	...	...	...	...	1	0.07	24	1.56	16	1.04	1172	72.25	7	0.46	77	5.01	53	3.45	187	12.17	1537	20.4
7 days and under 1 month...	7	0.68	...	...	...	...	49	4.75	50	4.85	570	55.29	13	1.26	81	7.26	95	9.31	165	16.0	1031	18.7
1 month and under 4 months	19	1.45	4	0.31	2	0.15	69	5.27	117	8.93	179	13.75	22	1.68	142	10.84	390	29.79	865	27.86	1309	17.4
4 months and under 7 months	42	3.01	4	0.29	...	...	110	7.89	249	17.85	23	20.09	9	0.65	90	6.45	711	50.97	151	10.82	1395	18.5
7 months and under 10 months	52	3.17	4	0.24	2	0.12	165	10.08	242	14.75	6	0.37	2	0.12	73	4.45	783	47.71	312	19.01	1641	21.7
10 months and under 1 year.	23	3.67	...	...	1	0.16	64	10.21	108	17.22	3	0.48	3	0.48	26	4.15	329	52.47	70	11.16	627	8.3
Total	143	1.90	12	0.16	5	0.08	481	6.38	782	10.37	1959	25.93	56	0.74	489	6.48	2362	31.32	1250	16.58	7540	...

VACCINATION STATEMENT No. I.

Statement showing the number of births (Divisional and Hospital) verified during the calendar year 1933 and the number of vaccination of Infants under one year of age.

Divisions.	Total Births excluding still births.		Still births.		Deaths under one year.		Number of infants surviving.		Number of infants vaccinated under one year.		Percentage of vaccination to births registered.	
	Divisional.	Hospital.	Divisional.	Hospital.	Divisional.	Hospital.	Divisional.	Hospital.	Divisional.	Hospital.	Divisional.	Hospital.
1	621	350	10	13	104	53	517	297	320	144	51.5	41.1
2	841	509	20	60	162	91	679	418	395	82	47.0	16.1
3	949	354	23	24	130	64	819	290	536	143	55.5	40.4
4	836	295	21	30	103	30	733	265	542	174	64.9	59.0
5	259	58	10	3	58	7	201	51	102	26	40.0	44.8
6	381	95	8	6	67	15	314	80	186	49	48.8	51.5
7	393	123	14	9	60	25	333	98	235	34	60.0	27.6
8	117	66	3	3	17	13	100	53	51	19	43.6	30.0
9	569	255	12	19	89	31	480	224	245	91	43.1	35.7
10	547	235	10	12	113	49	434	186	243	50	44.5	21.3
11	154	46	3	8	45	3	109	43	43	9	28.0	19.6
12	766	207	15	18	153	28	613	179	261	34	24.5	16.4
13	596	136	5	12	110	39	486	97	312	41	52.4	30.1
14	85	24	1	3	12	2	73	22	27	4	31.8	16.6
15	543	124	5	12	100	20	443	104	268	48	49.4	38.7
16	1,604	333	34	29	236	73	1,368	260	1,001	115	62.4	31.5
17	1,103	249	19	22	176	51	927	198	643	89	58.3	35.7
18	907	248	16	17	168	39	739	209	405	113	44.6	45.6
19	547	320	20	15	96	49	451	271	367	198	67.1	62.0
20	666	983	14	92	107	95	559	888	393	270	59.0	27.5
21	638	303	26	33	76	37	532	266	412	153	67.7	50.5
22	695	352	19	39	115	60	580	292	445	162	64.0	46.0
23	801	426	28	31	167	72	634	354	517	181	64.5	42.5
24	1,169	495	29	46	298	66	871	429	630	129	51.0	26.1
25	472	390	4	19	68	50	404	340	203	67	43.0	17.2
26	529	230	15	16	69	37	460	193	210	64	40.0	27.8
27	727	134	25	17	213	49	514	85	349	73	48.0	54.5
28	968	392	30	55	230	63	738	329	467	103	45.3	26.3
29	1,076	355	42	34	170	68	906	287	588	113	51.7	31.8
30	697	166	26	23	151	31	546	135	376	63	54.0	38.0
Total.	20,226	8,253	507	720	3,663	1,310	16,563	6,943	10,775	2,841	53.3	34.4

Vaccination Statement II:—Showing particulars

Divisions.	Districts.	Population according to the census of 1931.	Number of Depots.	Number of Vaccinators.	Total No. of persons Vaccinated.			Average No. of persons Vaccinated by each Vaccinator.	Primary		
					Males.	Females.	Total.		Total		
									Males.	Females.	Total.
1	2	3	4	5	6	7	8	9	10	11	12
1	Royapuram	21,952			3,109	2,763	5,872		573	605	1,178
2	Tondiarpet	25,911			3,961	4,085	8,046		722	677	1,399
3	Washermanpet	25,663			6,522	2,455	8,977		639	599	1,238
4	Korukkupet	25,538			4,698	2,496	7,194		592	521	1,113
5	Harbour	8,704			4,584	485	5,069		249	164	413
6	Muthialpet	14,257			3,603	557	4,160		344	199	543
7	Katchaleswaranpet	12,707			6,240	1,303	7,543		416	268	684
8	Kothawal Bazaar	6,550			1,012	323	1,335		127	101	228
9	Amuren Kovil	19,202			3,351	4,775	8,126		442	555	997
10	Seven Wells	20,294			2,994	4,532	7,526		444	490	934
11	Sowcarpet	7,194			390	472	862		81	121	212
12	Peddunaickenpet	21,547			4,560	4,842	9,402		481	599	1,080
13	Trevelyan Basin	18,916			1,922	1,294	3,216		479	316	795
14	Esplanade	3,906			711	541	1,252		86	65	151
15	Park Town	17,183			1,521	863	2,384		403	312	715
16	Perambur	43,817	16	53	15,351	5,281	21,632	3694	1,427	1,198	2,625
17	Choolai	27,488			4,414	4,631	9,045		718	704	1,422
18	Purasawalkam	27,654			3,229	4,343	6,572		619	670	1,289
19	Vepery	22,137			3,531	2,138	5,669		577	562	1,139
20	Egmore	29,355			4,222	2,716	6,940		583	640	1,223
21	Kilpauk	24,334			6,478	3,426	9,904		1,08	513	1,021
22	Nungambakkam	27,238			7,999	5,361	13,360		598	592	1,190
23	Chintadripet	26,845			3,186	2,002	5,188		711	696	1,407
24	Timuvateeswaranpet	31,371			2,716	1,421	4,137		604	597	1,201
25	Chepauk	17,092			4,403	1,766	6,169		429	407	836
26	Triplacane	19,514			2,998	1,843	4,841		445	459	904
27	Amir Mahal	19,615			1,680	1,457	3,137		409	392	801
28	Mirsahibpet	27,343			3,834	2,904	6,738		698	649	1,347
29	Royapettah	33,203			5,404	4,783	10,187		909	896	1,805
30	Mylapore	21,270			2,443	1,526	3,969		523	458	981
...	Total	6,47,230			1,22,066	77,336	199,452	..	15,836	15,015	30,851

of Vaccinations during the Calendar year 1933.

Vaccination.				Successful.	Re-Vaccinations.			Percentage of Successful cases in which the results were known.		Persons Successfully Vaccinated per 1,000 of Population.	Average annual No. of persons successfully Vaccinated during the previous five years.		Average annual No. of deaths from Small-pox during the previous five years.		Average cost of each Successful Vaccination.	
					Unknown.	Total.	Successful.	Unknown.	Primary.		Re-Vaccinations.	Number.	Ratio per 1,000 of Population.	Number.		Ratio per 1,000 of population.
Under one year.	One year and under 6 years.	Six years & above.	Total.													
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
657	500	21	1,178	...	4,694	1,102	1,952	100.0	40.2	103.9	528	24.1	17	0.8		
909	467	23	1,399	...	6,647	1,294	2,943	100.0	34.9	103.9	1,554	60.0	9	0.3		
798	417	23	1,238	...	7,739	508	1,944	100.0	8.8	68.2	1,420	55.3	7	0.3		
711	386	10	1,107	...	6,081	298	1,271	99.6	6.2	55.0	1,295	50.7	9	0.4		
226	175	12	413	...	4,656	754	1,205	100.0	21.8	134.1	409	47.0	7	0.8		
332	211	...	543	...	3,617	520	1,268	100.0	22.1	74.6	677	47.5	4	0.3		
440	244	...	684	...	6,859	1,071	1,948	100.0	21.8	138.1	629	49.5	6	0.5		
131	97	...	228	...	1,107	212	322	100.0	27.0	67.2	256	39.1	3	0.5		
671	325	...	996	...	7,129	1,460	338	99.9	21.5	127.9	979	51.0	9	0.5		
610	323	...	933	...	6,592	1,548	340	99.9	24.8	122.3	915	45.1	4	0.2		
120	92	...	212	...	650	165	4	100.0	25.5	52.4	247	34.3	3	0.4		
783	292	...	1,075	...	8,322	1,417	267	99.6	17.6	115.7	983	45.6	7	0.3		
613	181	1	795	...	2,421	256	1,097	100.0	19.3	55.6	734	38.8	8	0.4		
97	54	...	151	...	1,101	183	422	100.0	27.0	85.5	188	48.1	2	0.5		
517	190	...	707	...	1,669	233	713	98.9	24.4	54.7	619	36.0	6	0.3		
1,832	749	22	2,603	...	19,007	2,784	1,421	99.2	15.8	122.9	920	21.0	11	0.3		
1,145	277	...	1,422	...	7,623	2,540	1,149	100.0	39.2	144.1	1,504	54.7	15	0.5		
1,063	205	1	1,269	...	6,303	1,954	854	100.0	35.9	119.1	1,349	49.9	13	0.5		
1,058	81	...	1,139	...	4,530	515	...	100.0	...	74.7	1,227	55.4	8	0.4		
1,017	185	21	1,223	...	5,717	890	677	100.0	17.7	71.9	1,281	43.6	3	0.1		
830	181	6	1,017	2	8,883	1,425	1	99.8	16.0	100.4	1,051	43.2	5	0.2		
925	260	...	1,185	...	12,170	4,414	2,861	99.9	47.4	205.6	1,326	48.7	2	0.1		
1,114	271	22	1,407	...	3,781	452	407	100.0	18.4	69.2	1,388	51.7	5	0.2		
925	241	13	1,179	4	2,936	533	7	98.5	18.2	54.6	1,308	41.7	16	0.5		
386	232	8	826	4	5,333	57	4,993	99.3	16.8	51.7	737	43.1	3	0.2		
546	299	13	857	32	3,937	410	2,692	98.3	32.9	64.9	790	40.5	7	0.4		
654	116	9	779	14	2,336	498	...	99.0	...	65.1	764	38.9	6	0.3		
884	424	36	1,344	...	5,391	571	3,210	99.8	26.2	70.0	1,034	37.8	17	0.6		
1,248	538	17	1,803	...	8,382	1,282	1	97.5	15.3	92.9	1,373	41.4	10	0.3		
571	349	60	980	...	2,988	245	2,031	99.9	25.6	57.6	831	39.1	7	0.3		
22,012	8,362	318	30,692	56	168,601	29,591	36,338	99.7	22.4	93.1	31,036	48.0	229	0.4		

Rs. A. P.
0-11-3

VACCINATION STATEMENT No. III.

Statement showing the number of Births verified in 1923 and the number of Infants Vaccinated under one year of age.

Year.	Total number of Births excluding Still Births	Number of children in column 2 who died before attaining the age of one year without being vaccinated.	Number of Children in column 2 who left the City before attaining the age of one year without being vaccinated.	Number of Children in column 2 who were available for Vaccination (column 2 minus columns 3 and 4).	Number of Children in column 5 who were vaccinated before they attained the age of one year.	Percentage of column 6 to column 5.	Number of Children in column 5 whose Vaccination was postponed beyond one year of age for medical reasons.
1	2	3	4	5	6	7	8
1931 { Divisional Hospital	18,195 8,098	2,079 1,173	3,059 1,772	12,057 5,153	83.6 50.5	973 265
1932 { Divisional Hospital	18,622 7,676	3,042 993	3,080 1,825	12,500 4,858	79.0 53.1	1260 218
1933 { Divisional Hospital	20,226 8,253	2,663 1,310	2,427 1,836	13,136 5,107	82.0 55.6	893 422

Statement showing the areas in the City which have been sewered and are yet to be sewered.

Division.	Name of area.	Length of sewers in feet laid during 1933.	Length of sewers in feet laid up to 31-12-1933.	Percentage of sewered portion up to 31-12-1933.	Percentage yet to be sewered.
1	Royapuram	139	40,972	85	15
2	Tondiarpet	493	31,979	70	30
3	Washermenpet	...	52,541	96	4
4	Korukkupet	...	22,401	65	35
5	Harbour	833	30,771	94	6
6	Muthialpet	...	24,104	94	6
7	Katchaleswaranpet	...	34,410	91	9
8	Kothawal Bazaar	1,287	23,345	100	...
9	Amman Koil	2,443	27,687	100	...
10	Seven Wells	...	28,766	100	...
11	Sowcarpet	334	18,379	100	...
12	Peddunaickenpet	227	30,824	98	2
13	Trevelyan Basin	262	32,171	97	3
14	Esplanade	1,521	10,417	90	10
15	Park Town	907	21,396	95	5
16	Perambur	...	29,179	55	45
17	Choolai	149	33,188	56	44
18	Purasawalkam	...	53,825	99	1
19	Vepery	...	38,165	80	20
20	Egmore	1,279	92,745	93	7
21	Kilpauk	...	31,079	53	47
22	Nungambakkam	8,041	33,962	32	68
23	Chintadripet	...	40,623	95	5
24	Tiruvatteeswaranpet	1,993	49,264	87	13
25	Chepauk	...	22,026	90	10
26	Triplicane	2,590	28,228	87	13
27	Amir Mahal	...	27,262	85	15
28	Mirsahibpet	5,484	87,295	90	10
29	Royapettah	7,258	53,285	52	48
30	Mylapore	8,700	81,226	80	20
Total		43,940	11,31,515	83.64	16.36

Statement showing the number of applications for licenses disposed of during 1933.

Description.	Number of applications dealt with.	Number in which license was sanctioned.	Number in which license was refused.	Number pending disposal.
Aerated Water factory ...	37	36	1	...
Bakery ...	91	88	3	...
Candles & Soap ...	20	20	...	...
Cocoanut fibre, Flax, Hemp & Jute ...	38	38	...	...
Cattle-yards ...	2031	1474	3	554
Bones, Hoofs, Hair, Rags, Wool and Horns ...	37	36	1	...
Dairy ...	143	140	3	...
Flour ...	134	130	4	...
Guilting, Electro-plating, and Condiments. ...	134	126	8	...
Hack-stable ...	65	64	1	...
Dyeing Yards ...	56	55	1	...
Onions and Garlic ...	55	55	...	...
Oil Mills & Oil storing ...	497	481	16	...
Lodging house ...	68	68	...	...
Markets ...	42	42	...	...
Meat Stalls ...	296	225	71	...
Spirits, Turpentine & Rosin ...	151	148	3	...
Sweetmeat bazaars, & Coffee hotels ...	387	367	20	...
Washing soiled clothes ...	184	184	...	...
Fish, Fins ...	19	19	...	...
Skins, Hides & Leather ...	117	117	...	...
Paddy boiling ...	2	2	...	...
Sugar, Sugarcandy ...	12	12	...	...
Catgut, Tallow, Offal, Bones and Blood ...	8	8	...	...
Pig-stye ...	24	...	1	23
Snuff ...	93	85	8	...
Cotton ...	29	29	...	...
Brick-kiln ...	1	...	1	...
Lime-kiln ...	2	...	2	...
Eating-house, Toddy-shop ...	804	775	29	...
Total ...	5577	4824	176	577

List of unwholesome articles of food destroyed during 1933.

Aerated water.	33 bottles.
Apples.	349.
Beef.	212 lbs. and 7 seers.
Biscuits.	63 tins, 6 baskets and 43.
Berry apples.	492.
Brussel sprouts.	20 bundles.
Canned beef.	7 tins.
Canned fish.	359 tins.
Cheese.	6 tins and 24 pieces.
Chocolate.	47 tins, 141 boxes, 2495 tablets, 1073 pieces and 11 sticks.
Custered fruits.	1359.
Cocoa.	19 boxes and 179 tins.
Dried fish.	73 baskets.
Eggs.	1407.
Grapes.	37½ lbs. 18 seers, 2 baskets and 24.
Halva.	8 plates.
Iced Cheese.	52 tins.
Jack fruits.	52.
Lettice.	100 bundles.
Limes.	890.
Lactogen.	336 tins.
Mutton curry.	6 pots, 12 plates and 50 lbs.
Mangoes.	3395 and 1 basket.
Melons.	327.
Nestles Milk.	49 bottles and 114889 tins.
Oranges.	4365 and 25 baskets
Offal.	23 seers and 4 baskets.
Peas.	20 lbs. (Bangalore).
Patridges.	60.
Pumpkins.	90.
Potatoes.	230, 6 viss and 3 seers.
Pork.	83 lbs.
Plantains.	9609 and 40 baskets.
Quails.	100.
Rice.	394 bags.
Rhubarb.	10 bundles.
Rotten prawns.	31½ baskets.
Rice eatables and cakes	400 baskets and 15 trays.
Rotten cabbages.	15 baskets and 132.
Stale shark.	12 pieces.
Sugarcane.	27.
Salmon ruby brand.	20 tins.
Sausages.	1 parcel
Salted fish	9½ baskets and 6.
Sheep head.	17.
Stale mutton.	177 seers, 22½ viss and 4 thighs.
Sword fish.	38 baskets and 283.
Sweets.	17 seers, 45 plates and 2 lbs.
Syrup.	24½ bottles.
Stale fish.	31 baskets and 103.
Trash.	144 baskets and 111 trays.
Tea.	444 measures, 56 cans, 841 kettles, 20 pots, 23 cups and 1 tin.
Tomatoes.	19½ baskets and 2233.
Wood apples.	132.

Statement of notices issued and disposed of together with

Section or By-law.	Substance of Section or By-Law.	NOTICES.						No. cancelled.
		No. pending on 1st January 1933.	No. issued during the year.	Total.	No. complied with			
					Volun- tarily.	By prose- cution.	By transfer to W.D. for Departmental execution and recovery of cost.	
(1)	(2)	(3)	(4)	(5)	(6)			(7)
177	Failure to comply with the requisition regarding proper maintenance of house drains, privies and cesspools ...	...	1	1	...	1	...	...
186	Failure to obey requisition to provide latrine or to remove latrine to another site and failure to keep latrines clean and in proper order ...	232	698	930	303	89	...	117
188	Failure to obey requisition to provide latrine for market, cattle-stand or cart-stand, and to keep them clean and in proper order ...	1	3	4	1	...	...	1
189	Failure to construct latrines so as to screen persons using them from view ...	...	5	5	2	3	...	...
202 (1)	Allowing rubbish or filth to accumulate in premises for more than twenty-four hours.	1	...	1	1	...	...	...
„ (5)	Keeping rubbish or filth for more than twenty four hours, etc. ...	8	14	22	10	1	...	2
„ (6)	Allowing sewage to flow in streets ...	8	35	43	29	1	...	4
260	Failure to obey requisition to repair, etc. tank or other place, dangerous to passers-by or persons living in the neighbourhood ...	...	15	15	10	...	...	2
264	Failure to obey requisition to fill up etc. tank or well, or drain off water, etc. ...	116	738	854	452	14	3	56
269	Failure to obey requisition to enclose, clear or cleanse untenanted premises ...	14	49	63	31	11	..	8
270	Failure to obey requisition to clear or cleanse, etc. building or land in filthy state or overgrown with noxious vegetation ...	4	36	40	23	2	...	8
272	Failure to obey requisition to lime-wash or otherwise cleanse building ...	18	308	326	254	4	...	13
273	Failure to obey requisition to execute work or take other action with respect to insanitary buildings ...	607	2462	3069	2161	98	...	140
282	Use of place as stable, cattle stand etc. without or contrary to license ...	...	...	...	...	...	...	...
283	Repairs to or demolishing of stable, cattle-shed, etc. .	4	19	23	11	...	...	6
284	Construction or maintenance of stable, cattle-shed, etc. contrary to Act or subsidiary legislation ...	1	13	14	7	1	...	...
287 (3)	Use of place without license or contrary to license ...	...	...	...	...	...	...	...

the statement of prosecutions instituted during the year 1933.

PROSECUTIONS.									
No. pending.	No. of prosecutions pending disposal on 1st January 1933.	No. instituted during the year.	Total.	No. convicted.	Fines imposed.	No. acquitted.	No. withdrawn.	No. in which the parties were not found.	No. pending.
(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
					Rs. A. P.				
...	...	1	1	1	1 0 0	...	...	...	...
421	21	196	217	27	78 8 0	2	145	...	48
2	...	...	...	...	...	...	...	...	...
...	...	5	5	3	11 0 0	...	2	...	...
...
9	3	1	4	2	1 0 0	...	2	...	...
9	...	9	9	2	4 0 0	...	7	...	...
8	...	...	...	...	...	...	...	...	...
329	11	27	38	6	7 6 0	1	21	...	10
13	...	21	21	3	2 8 0	3	9	...	6
7	1	11	12	3	5 0 0	...	...	5	4
55	7	...	7	1	4 0 0	1	4	...	1
670	30	250	280	108	159 3 0	1	133	...	38
...	78	1087	1165	913	4,999 12 0	10	98	1	143
6	...	...	...	...	...	...	...	...	...
6	...	4	4	3	13 0 0	...	...	...	1
...	18	200	218	133	1,111 0	...	53	...	32

Statement of notices issued and disposed of together with

Section or By-law.	Substance of Section or By-Law.	NOTICES.						
		No. pending on 1st January 1933.	No. issued during the year.	Total.	No. complied with			No. cancelled.
					Volun- tarily.	By prose- cution.	By transfer to W. D. for Departmental execution and recovery of cost.	
(1)	(2)	(3)	(4)	(5)	(6)			(7)
293 (2)	Washing of clothes by washermen at unauthorised places ...	...	...	...	...	...	...	...
297	Slaughter of animals for sale of food or skinning or cutting up carcasses without license or contrary to license ...	...	...	...	...	...	...	...
303 (2)	Opening private market without license or contrary to license ...	...	...	...	...	...	...	...
304	Keeping open private market without license or contrary to license ...	...	...	...	...	...	...	...
309	Carrying on butcher's, fishmonger's or poulterer's trade without license, etc. ...	...	...	...	...	...	...	...
310	Sale of articles of food in public streets, etc. after prohibition or contrary to regulations ...	...	...	...	...	...	...	...
326	Discharge of the work of the grave digger or attendant at place for disposal of the dead without license ...	...	...	...	...	...	...	...
333	Failure to obey requisition to remove cases of dangerous diseases to the Infectious Diseases Hospitals ...	...	3	3	2	...	...	1
334	Failure to obey requisition to cleanse or disinfect building or article ...	22	805	827	801	21	...	1
345	Failure to give information of small-pox ...	...	...	...	...	...	...	...
349 (11)	Failure to comply with the regulations re: hotels lodging houses, boarding houses, etc. ...	...	...	...	...	...	...	...
" (13)	Sanitary control over places used for any of the purposes specified in Schedule VI ...	...	...	...	...	...	...	...
" (21)	Prevention of sale or exposure for sale of unwholesome meat, fish, provisions, etc....	...	...	...	...	...	...	...

the statement of prosecutions instituted during the year 1933.

PROSECUTIONS.										
No. pending.	No. of prosecutions pending disposal on 1st January 1933.	No. instituted during the year.	Total.	No. convicted.	Fines imposed.			No. acquitted.	No. withdrawn.	No. in which the parties were not found.
(8)	(9)	(10)	(11)	(12)	(13)			(14)	(15)	(16)
					Rs.	A.	P.			
...	...	18	18	5	10	0	0	...	4	...
...	...	14	14	12	23	12	0	...	2	...
...	...	2	2	1	76	0	0	...	...	...
...	4	10	14	...	...	...	...	...	10	...
...	5	26	31	18	110	4	0	...	11	...
...	4	57	61	38	30	8	0	...	13	...
...	...	1	1	...	...	...	...	...	1	...
...
4	...	24	24	20	13	0	0	...	2	...
...	...	265	265	265	629	4	0	...	...	...
...	61	453	514	356	2,029	13	0	2	107	...
...	12	3	15	11	30	8	0	...	4	...
...	1	115	116	78	100	6	0	1	19	3

Statement showing the number of cases treated in the Corporation Dispensaries
during 1932 and 1933.

Serial No.	Name of the Dispensary.	Year in which the dispensary was opened.	Total No. of cases treated.		Total No. of minor operations performed.		Remarks
			1932.	1933.	1932.	1933.	
1	Royapuram ...	1924	77,320	75,779	254	224	
2	Washermanpet ...	1913	49,143	99,109	843	905	
3	Harbour ...	1929	1,17,887	1,26,834	280	285	
4	Mannady ...	1923	83,042	73,440	538	336	
5	Mofuskhan ...	1923	42,006	42,533	297	325	
6	Mint Street ...	1923	46,946	97,622	1,200	539	
7	George Town ...	1919	43,702	1,06,627	521	463	
8	Perambore ...	1928	23,018	21,493	262	250	
9	Vyasarpady ...	1929	37,974	22,030	858	3,987	
10	Kosapet ...	1929	29,348	38,324	1,131	1,261	
11	Baliah Naidu ...	1899	99,226	90,945	1,926	875	
12	Kilpauk ...	1919	44,564	59,368	361	399	
13	Nungambakkam ...	1923	39,276	43,807	614	610	
14	Chintadripet ...	1909	1,09,387	1,16,240	705	624	
15	Pudupakkam ...	1924	1,05,246	1,02,207	758	684	
16	Triplicane ...	1918	1,25,115	1,29,126	554	556	
17	Teynampet ...	1921	44,570	45,874	324	409	
18	Mambalam ...	1922	32,081	37,549	699	65	Shifted from Pullianthope.
19	Mylapore ...	1924	1,28,814	1,25,555	524	492	
20	Unani Dispensary, Pullianthope Road.	1930	31,406	87,005	175	430	Shifted from Mambalam.
21	Siddha Dispensary ...	1931	1,17,737	1,26,806	180	212	
22	Ayurvedic Dispensary ...	1930	33,130	54,738	183	197	
23	Unani Dispensary, Thayar Sahib Street.	1932	37,828	1,09,031	58	166	

Statement showing the number of cases admitted and discharged and of deaths under various diseases in the Tondiarpet Hospital during the year 1933.

	Small-pox.	Chicken-pox.	Measles.	Cholera.	Dysentery.	Diarrhoea.	Mumps.	Whooping Cough.	Pneumonia.	Enteric Fever.	Malaria.	Pyrexia of unknown origin.	Kala-Azar.	Pulmonary Tuberculosis.	Secondary Syphilis.	Plague.	Other diseases.	Total.
Patients remaining in the hospital on 31st December 1932 at 12 midnight. ...	71	5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	77
Patients admitted from 1st January 1933 to 31st December 1933 ...	1923	394	39	97	11	49	4	3	1	...	2	12	...	...	2	...	81	2688
Total number treated.	2064	399	40	97	11	49	4	3	1	...	2	12	...	...	2	...	81	2765
" discharged ...	1639	390	38	52	9	46	4	3	1	...	2	10	...	...	2	...	60	2156
" number died ..	407	...	...	40	2	...	...	...	...	...	...	2	...	...	...	...	11	463
Mortality rate per cent ...	19.7	...	...	41.2	18.2	...	...	...	...	...	...	16.7	...	...	...	...	13.6	16.7
Patients remaining in the hospital on 31st December 1933 at 12 midnight. ...	18	9	2	5	...	3	...	...	...	...	...	...	...	...	...	...	10	47

Statement showing the Vaccinal condition of patients for Small-pox in the Tondiarpet Hospital during 1933.

Age.	Vaccinated.												Un-vaccinated.			
	Vaccinated successfully with marks visible.						Vaccinated with marks not visible.						Total.			
	1	2	3	4	5	6	Total admitted.	Death.	Mortality per cent.	Total admitted.	Death.	Mortality per cent.	Admission.	Death.	Recovered.	Mortality per cent.
0-1	2	8	1	3	...	...	14	3	21.4	3	1	33.3	17	4	13	23.5
1-2	1	6	1	1	...	...	9	1	11.1	3	3	100	12	4	8	33.3
2-3	2	5	1	...	...	...	8	3	37.5	11	3	27.3	19	6	13	31.6
3-4	2	2	...	1	...	...	5	1	20	14	5	35.7	19	6	13	31.6
4-5	...	2	...	1	...	...	3	...	...	9	4	44.4	12	4	8	33.3
5-10	10	12	4	10	...	...	36	...	...	48	10	20.8	84	10	74	11.9
10-20	80	91	44	58	8	4	285	27	9.5	136	29	21.3	421	56	365	13.3
20-40	137	196	113	189	9	60	704	70	9.9	189	74	39.1	893	144	749	16.1
40-60	6	13	10	18	...	5	52	6	11.5	32	15	46.8	84	21	63	25
60 & upwards	1	...	...	1	...	...	2	1	50	4	1	25	6	2	4	33.3
Total	241	335	174	282	17	69	1118	112	10.1	449	145	32.3	1567	257	1310	16.4
													426	148	278	34.7

Statement showing the number of cases admitted, discharged and of deaths under various diseases in the Krishnampet Hospital during the year 1933.

	Small-Pox.	Chicken-Pox.	Measles.	Cholera.	Dysentery.	Diarrhoea.	Mumps.	Whooping Cough.	Pneumonia.	Enteric Fever.	Malaria.	Pyrexia of unknown origin.	Kala-Azar.	Pulmonary Tuberculosis.	Secondary Syphilis.	Other Diseases.	Total.
Patients remaining in the Hospital on 31st December, 1932	26	1	...	...	...	...	3	...	...	...	...	...	...	...	...	1	31
Patients admitted from 1st January 1933 to 31st December 1933	1163	73	16	23	4	1	...	...	...	...	1	3	...	...	3	4	1339
Total number treated	1189	74	16	33	4	1	3	...	...	...	1	3	...	...	3	43	1370
" " discharged	955	74	16	9	4	1	3	...	...	...	1	3	...	...	3	29	1099
" " died	207	...	...	20	...	...	...	...	...	...	...	...	...	...	...	10	237
Mortality rate per cent	17.4	...	...	60.6	...	...	...	...	...	...	...	...	...	...	...	23.2	17.3
Patients remaining in the Hospital on 31st December, 1933	26	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4	34

Statement showing the Vaccinal condition of patients for Small-pox in the Krishnampet Hospital during 1933.

Age.	Vaccinated.												Un-vaccinated.			
	Vaccinated successfully with marks visible.						Vaccinated with marks not visible.						Total.			
	1	2	3	4	5 & 6	Total admitted	Death	Mortality rate per cent.	Total admitted	Death	Mortality rate per cent.	Admission	Death	Recovered.	Mortality rate per cent.	Admission.
0-1	3	9	..	1	...	13	7	50.8	5	3	60	18	10	8	55.6	15
1-2	1	10	..	3	...	14	3	21.4	1	1	100	15	4	11	26.7	17
2-3	2	1	...	1	...	4	1	25	5	1	20	9	2	7	22.8	7
3-4	...	7	1	2	...	10	2	20	5	2	40	15	4	11	26.7	15
4-5	...	5	...	1	...	6	2	33.3	9	2	22.2	15	4	11	26.7	19
5-10	15	22	8	14	...	59	5	8.5	39	6	15.4	98	11	87	11.2	16
10-20	29	43	48	74	4	198	6	3	52	9	17.3	250	15	235	6	15
20-40	39	57	50	100	44	290	26	9	64	33	51.7	354	59	295	16.7	12
40-60	3	4	8	10	11	36	1	2.8	18	7	38.9	54	8	46	14.8	9
60 and above.	...	1	..	...	...	1	1	100	2	1	50	3	2	1	66.7	...
Total ..	92	159	115	206	59	631	54	8.6	200	65	32.5	831	119	712	14.3	125
													88	37		70.3

Statement showing the admissions in the two infectious diseases hospitals according to nationality and sex during 1933.

Nationality.	Tondiarpet Hospital.		Krishnampet Hospital.		Total.
	Males.	Females.	Males.	Females.	
Europeans ...	4	3	...	...	7
Hindus ...	1166	640	477	370	2653
Muhammadans ...	88	27	25	14	154
Others ...	443	317	242	211	1213
Total ...	1701	987	744	595	4027

List of works of a sanitary nature executed during 1933.

Burial Grounds :

1. Acquisition of land for a burial ground for Sunni Community.
2. Shifting the waiting shed from Perambur High Road to the Hindu Burial Ground, 16th division.
3. Fixing Glow lamp posts in the centre of the Hindu Burial Ground off Basin Road.
4. Construction of burning platform and waiting shed in the cremation ground, Suryanarayana Chetti Street.
5. Forming road in the burial ground, Brick Kiln Road, 21st division.

Dispensary:

1. Construction of a building for the dispensary in George Town.

Improvement of Slums:

1. Construction of plinths in Ritchie Street, 23rd division.
2. „ flush-out latrines of 20 seats in Vasudeva Pillai Garden, 18th division.
3. Raising road and latrine-site in Vasudeva Pillai Garden, 18th division.
4. Fixing Glow lamp posts in the west of Sundaram Pillai Street, 18th division.
5. Fixing Glow lamp posts in Habibulla Sahib Street, 24th division.
6. Fixing bathing fountain in Habibulla Sahib Hutting Ground, 24th division.
7. Erecting public bathing fountain in Ritchie Street, 23rd division.

Public flush-out latrines and bathing fountains.

Serial Number.	Division	Works.
1	1	Converting the existing sanded latrine into a flushout latrine of 40 seats in Kasimodu Kuppam.
2	1	Alterations and additions to the existing latrine and converting it into 20 seat f. o. latrine with bathing fountain at Market Lane.
3	1	Alterations and additions to the bathing fountain with flushout latrine in the hutting ground in AmmenKoil Street and East Mada Church Road.
4	2	Converting the existing latrine into 20 seats at Tondiarpet Chery.
5	2	Installing flushout latrine of 12 seats at Robinson Park.
6	3	Installing a flushout latrine of 12 seats at Maniganda Mudali Street.
7	3	Constructing 10 seated flushout latrine in Mukunda Ammal Hutting Ground at Sreerangammal Street.
8	4	Installing a reinforced concrete flushout latrine of 4 seats on the road side land near Washermanpet Tram Terminus.
9	5	Installing a single seated reinforced concrete flushout latrine, Tailor's Lane, 2nd Line Beach.
10	7	Installing a single seated flushout latrine at the junction of Broadway and Baker Street.
11	8	Installing double seated flushout latrine in Hanumantharayan Koil Street, South end.
12	8	Installing a single seated flushout latrine in Gosha Sahib Lane.
13	9	Installing a single seated flushout latrine in Saheb Hazarath Street.
14	9	Installing a single seated flushout latrine in south end of Muthu Naicken Street.
15	9	Extending the existing latrine in Vasamodu adjoining the new latrine.
16	10	Converting the existing latrine into flushout latrine and bathing fountain in Sadayappa Maistry Street, R. S. No. 1743/4.
17	12	Construction of a flushout Latrine of 36 seats with bathing ghat adjoining Wall Tax Road Pumping Station.
18	12	Construction of a flushout latrine of 12 seats by the side of Medical Stores Compound wall in Saravana Mudaly Street.
19	13	Installing a single seated flushout latrine at the junction of Mint Street and Tholasingam Street.
20	13	Installing a single seated flushout latrine in Wall Tax Road and Amman Koil Street.
21	13	Construction of a flushout latrine of 12 seats in the vacant space between Timber Depot at Perumal Koil Garden.
22	15	Installing double seated flushout latrine at the junction of Rasappa Chetty Street with Bangarammal Street.
23	15	Installing double-seated flushout latrine in Devaraja Mudaly Street and Ayah Pillai Street north end.
24	15	Installing a flushout latrine of 4 seats in Wall Tax Road at the junction of Mannaru Street.
25	15	Converting the existing latrine into a flushout latrine of 64 seats with bathing fountain in Wall Tax Road opposite to Edapalayam.
26	15	Converting the existing latrine into a flushout latrine of 63 seats with bathing fountain in Wall Tax Road opposite to Edapalayam.
27	18	Construction of a flushout latrine of 20 seats in Kandasami Koil Street.
28	19	Installing double seated flushout latrine at Zoo.
29	19	Construction of a flushout latrine of 20 seats in Ekambara Chery.
30	20	Installing double seated flushout latrine with bathing ghat at the west side of the village in Swami Reddipuram.
31	20	Installing a flushout latrine of 4 seats in Thiruvengada Naicken Lane and Seeyala Mudali Street.
32	21	Installing double seated flushout latrine in Purasawalkam High Road west end near bus stand.
33	22	Construction of a flushout latrine of 20 seats in R.S. No. 36/15 Nungambakam.
34	22	Construction of a flushout latrine of 20 seats in R.S. No. 36/41 Nungambakam.
35	24	Extending the existing latrine in Keeraichery by 12 seats more.
36	24	Extending the existing latrine by 8 seats more in Suparigunta.
37	26	Extending the flushout latrine in Pycrofts Road, 26th division.
38	29	Converting the existing sanded latrine into a flushout latrine of 20 seats with bathing ghats in Oddarpalayam.
39	30	Converting the existing latrine in Mandavalli into a flushout latrine of 20 seats.

Medical Inspection of Corporation Schools.

1933-34

Statement I.

No.	Defects.	Boys.						Girls.						Remarks.			
		Entrants.			Total of Entrants and Regulars.			Entrants.			Regulars.				Total of Entrants and Regulars.		
		Defective.	Percentage.		No.	Percentage.	Defective.	No.	Percentage.	Defective.	No.	Percentage.			Defective.	No.	
			1933-34	1932-33								1933-34	1932-33				
1	Malnutrition	1783	23-86	23-27	2518	23-12	22-24	4301	23-42	62	1-40	2-80	136	2-75	3-78	199	1-94
2	Dirty head, body and Nails	1219	16-31	18-29	1285	11-80	11-28	2504	13-64	346	7-81	7-08	192	3-15	4-11	528	5-17
3	Teeth and Mouth	1320	17-66	17-12	1442	15-08	16-13	2962	16-13	496	11-20	10-41	617	11-18	14-84	1143	11-19
4	Nose and Throat	2079	27-82	29-51	2624	24-10	26-9	4703	25-61	996	22-49	24-57	1129	19-21	21-22	2125	20-80
5	Eye disease	178	2-38	2-53	276	2-53	2-60	454	2-47	177	4-00	4-47	253	4-37	8-18	430	4-21
6	Vision	62	0-83	1-26	162	1-49	1-32	221	1-22	12	0-27	0-52	23	0-10	0-20	35	0-31
7	Ear disease	115	1-54	1-22	190	1-74	1-67	305	1-66	71	1-61	1-54	101	1-75	2-03	172	1-68
8	Hearing	4	0-05	0-07	3	0-03	0-06	7	0-04	3	0-07	0-09	5	0-09	0-13	8	0-08
9	Speech	16	0-21	0-23	35	0-32	0-45	51	0-28	6	0-14	0-11	5	0-09	0-6	11	0-11
10	Circulatory System	78	1-04	1-03	121	1-11	1-10	199	1-68	9	0-20	0-38	23	0-40	0-40	32	0-31
11	Tuberculosis	8	0-11	0-03	15	0-14	0-15	23	0-13	6	0-14	0-26	14	0-24	0-31	20	0-20
12	Respiratory System	306	4-09	3-45	259	2-38	2-89	565	3-08	55	1-24	3-31	52	0-90	3-07	107	1-05
13	Abdominal Organs	229	3-06	1-30	217	1-99	1-89	445	2-43	16	0-36	0-71	14	0-24	0-61	30	0-29
14	Bones and Joints	248	3-32	2-98	292	2-68	2-79	540	2-94	12	0-27	0-43	17	0-29	0-40	29	0-28
15	Nervous and Psychic systems	9	0-12	0-17	19	0-17	0-14	28	0-15	1	0-02	0-04	1	0-02	0-11	2	0-02
16	Infectious and Contagious diseases	1061	14-20	13-33	1453	13-34	15-79	2514	13-69	302	6-82	7-10	374	6-46	7-66	676	6-62
17	Other diseases and defects	551	7-37	9-81	599	5-50	8-02	1150	6-56	123	2-78	5-52	222	3-84	6-31	345	3-38
18	Vaccination	70	0-94	0-98	...	...	...	70	0-38	18	0-41	1-26	...	...	...	18	0-18
19	Deformities	16	0-21	0-41	42	0-39	0-42	53	0-32	6	0-14	0-17	10	0-17	0-23	16	0-16

Appendix to Statement I.

Group.	No. on Roll.		Average daily attendance.		No. Examined.		No. defective.		Percentage defective.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Entrants ...	20,587	12,706	16,605	9,823	7474	4,429	4,827	2,310	64.58	52.16
Regulars ...					10,889	5,786	6,393	2,616	58.71	45.21
Total ...	20,587	12,706	16,605	9,823	18,363	10,215	11,220	4,926	61.10	48.22

STATEMENT II—Height and Weight Table.

Age.	Boys.		Girls.		Remarks.
	Average height in inches.	Average weight in pounds.	Average height in inches.	Average weight in pounds.	
4 years ...	39.08	29.24	37.33	33.50	One boy.
5 " ...	38.94	32.24	38.80	33.70	
6 " ...	42.03	35.52	40.04	36.86	
7 " ...	44.32	37.07	42.63	36.37	
8 " ...	45.84	39.42	44.49	39.76	Two boys & three girls.
9 " ...	48.22	44.18	47.01	44.47	
10 " ...	50.26	50.13	49.26	43.79	
11 " ...	51.77	52.85	51.01	54.27	
12 " ...	53.54	56.42	53.13	53.88	
13 " ...	55.32	55.96	55.14	63.30	
14 " ...	56.18	62.52	56.08	69.18	
15 " ...	57.83	68.26	57.98	72.79	
16 " ...	59.24	78.01	58.80	67.23	
17 " ...	58.72	80.92	59.98	69.08	
18 " ...	66.50	77.00	One boy.
19 "	61.50	95.00	Two women
20 "	60.00	84.00	One woman
21 "	59.75	103.00	Two women
23 "	60.00	80.00	One woman
24 "	57.00	76.00	One "
25 "	61.00	90.00	One "
28 "	60.00	72.00	One "
30 "	58.00	92.50	Three women

Treatment Table.

Group.	No. sent to Corporation Dispensaries.	No. referred to Govt. General Hospital.	No. referred to Govt. Ophthalmic Hospital.	No. referred to Tuberculosis Institute.	No. referred to Govt. Gosha Hospital.	No. referred to Skin department of Government Hospitals Corporation Skin clinics and City Lepet clinics	No. of parents met.	No. of re-visits paid to Schools.	No. of re-examinations of children made.	No. admitted into Thirumani Lepet Settlement, Chengleput.	Remarks.
Boys	11,152	936	169	18	...	278	5,633	146	10,270	1	
Girls	3,411	1,168	292	19	...	90	2,682	144	4,895	...	
Total	14,563	2,104	461	37	...	368	8,365	290	15,165	1	

Teeth and Mouth Table.

No.	Defects.	Entrants.						Regulars.						Total defective of boys and girls.	
		Boys.			Girls.			Boys.			Girls.				
		No. sent to Corporation Dispensaries.		No. referred to General Hospital.	No. sent to Corporation Dispensaries.		No. referred to General Hospital.	No. sent to Corporation Dispensaries.		No. referred to General Hospital.	No. sent to Corporation Dispensaries.		No. referred to General Hospital.		
		No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.	No. Defective.			
1	Dirty Teeth	...	263	3	68	121	...	71	297	34	83	147	...	93	828
2	Dental Caries	...	296	205	73	273	...	160	384	276	84	245	...	237	1298
3	Stomatitis	...	745	745	...	109	109	...	955	953	2	171	171	...	1980
4	Tongue Tie	...	1	...	1	...	...	...	4	...	4	1	...	1	6
5	Oral Sepsis	...	1	1	...	...	...	...	1	1	...	...	...	...	2
6	Other Conditions	...	17	17	...	...	...	...	45	45	...	3	...	2	65

N.B.—Cases not amenable to or not requiring treatment have been omitted in the treatment column.

Nose and Throat Table.

No.	Defects.	Entrants.						Regulars.						Total defective of boys and girls.
		Boys.			Girls.			Boys.			Girls.			
		No. Defective.	No. sent to Corporation	Dispensaries.	No. referred to Hospital.	No. Defective.	No. sent to Corporation	Dispensaries.	No. referred to Hospital.	No. Defective.	No. sent to Corporation	Dispensaries.	No. referred to Hospital.	
1	Nasal Catarrh	...	155	155	...	15	15	125	125	...	15	15	...	310
2	Nasal Polypus	...	...	...	...	2	..	1	...	1	5	...	5	8
3	Enlarged Tonsils	...	1694	1509	185	916	741	2113	1908	205	360	1115	755	5838
4	Granular Pharynx	...	...	...	...	5	5	6	6	...	...	1	1	12
5	Adenoids	...	37	...	37	...	...	52	...	52	...	...	...	89
6	Enlarged cervical glands.	...	382	382	...	61	61	464	464	...	4	89	85	996
7	Bifid & elongated uvula.	...	8	...	...	2	...	1	...	...	...	3	...	9
8	Other Conditions	...	...	...	...	..	...	...	...	...	4	4	...	4

N.B.— Cases not amenable to or not requiring treatment have been omitted in the treatment column.

Eye Table.

No.	Defects.	Entrants.						Regulars.						Total defective of boys and girls.
		Boys.			Girls.			Boys.			Girls.			
		No. defective.	No. sent to Corporation dispensaries.	No. referred to Ophthalmic Hospital.	No. defective.	No. sent to Corporation dispensaries.	No. referred to Ophthalmic Hospital.	No. defective.	No. sent to Corporation dispensaries.	No. referred to Ophthalmic Hospital.				
1	Conjunctivitis	48	48	...	36	35	1	51	...	...	45	44	1	180
2	Blepharitis	2	1	1	3	...	3	...	...	...	3	3	...	8
3	Granular lids	11	9	2	82	...	82	42	...	11	135	...	135	270
4	Corneal opacity	17	...	13	15	...	15	30	...	28	12	...	12	74
5	Corneal ulcer	...	...	...	3	...	3	...	...	...	3	...	3	6
6	Staphyloma	...	...	...	3	...	2	5	...	5	1	...	...	9
7	Dacryocystitis	...	...	...	...	...	...	3	...	3	...	...	...	3
8	Cataract	1	...	1	...	...	...	...	...	...	...	...	...	1
9	Xerosis	58	58	...	29	29	...	85	...	...	33	33	...	205
10	Stye	7	7	...	1	1	...	14	...	...	5	5	...	27
11	Squint	25	...	13	4	...	4	24	...	6	14	...	14	67
12	Keratitis	...	...	...	...	...	...	1	...	1	...	...	...	1
13	Ptosis	...	...	...	...	...	...	2	...	...	...	...	...	2
14	Other conditions	8	7	1	1	...	1	23	...	4	...	...	...	33
15	Defective Vision	62	32	30	12	9	3	162	105	57	23	9	14	259

N. B.—Cases not amenable to or not requiring treatment have been omitted in the treatment column.

Infectious Diseases Table.

No.	Defects.	Entrants.						Regulars.						Total defective of boys and girls.
		Boys.			Girls.			Boys.			Girls.			
		No. defective.	No. sent to Corporation dispensaries.	No. referred to special section of Hospitals.	No. defective.	No. sent to Corporation dispensaries.	No. referred to special section of Hospitals.	No. defective.	No. sent to Corporation dispensaries.	No. referred to special section of Hospitals.	No. defective.	No. sent to Corporation dispensaries.	No. referred to special section of Hospitals.	
<i>Skin :—</i>														
1	Scabies	712	712	...	283	283	...	948	948	...	354	354	...	2,297
2	Eczema	56	56	...	13	13	...	64	63	...	2	2	...	123
3	Tinea & Fungus	143	143	...	...	...	...	172	172	...	...	...	...	328
4	Lichen	23	23	...	...	...	...	30	30	...	...	...	...	53
5	Dermatitis	14	13	1	2	...	...	21	21	...	2	...	2	39
6	Pruritis	1	1	...	...	...	...	...	1	...	...	...	...	1
7	Psoriasis	...	...	...	...	...	...	6	6	...	...	...	...	1
8	Impetigo	3	3	...	...	...	...	173	173	173†	22	...	22	9
9	Leprosy	106	...	106	23	...	23	2	2	...	...	...	...	324
10	Other Conditions	2	1	1	...	...	...	...	...	...	...	...	...	4
<i>Other infectious diseases :—</i>														
1	Malaria	10	10	...	5	5	...	5	5	...	4	4	...	24
2	Kala-azar	1	...	1	...	...	...	...	...	...	...	...	...	1
3	Hookworm	6	5	1	5	...	...	12	9	3	7	4	3	30
4	Influenza	4	4	...	...	...	...	9	9	...	...	...	...	13
5	Mumps	...	...	...	1	...	...	1	...	1	1	1	...	3
6	Gonorrhoea	1	...	1	...	...	...	...	...	...	...	...	...	1
7	Congenital Syphilis	1	...	1	...	...	...	...	...	...	...	...	...	1

* Advised X-ray treatment at the General Hospital.

† 1 Sent to Thirumani Leper Settlement, Chengleput.

Other Diseases Table.

No.	Defects.	Entrants.						Regulars.						Total defective of boys and girls.
		Boys.			Girls.			Boys.			Girls.			
		No. defective.	No. sent to Corporation dispensaries.	No. referred to Govt. General Hospital.	No. defective.	No. sent to Corporation dispensaries.	No. referred to Govt. General Hospital.	No. defective.	No. sent to Corporation dispensaries.	No. referred to Govt. General Hospital.	No. defective.	No. sent to Corporation dispensaries.	No. referred to Govt. General Hospital.	
1	Worms	263	263	...	44	42	2	247	247	...	102	99	3	656
2	Wounds, cuts, ulcers, etc	122	121	1	31	31	...	185	184	...	60	55	5	398
3	Undescended Testis	1	...	...	...	...	...	2	...	...	...	...	...	3
4	Phimosis	92	...	92	...	...	...	72	...	72	...	...	...	...
5	Enlarged groin glands	8	8	...	...	...	...	14	14	...	3	...	...	...
6	Pyrexia	20	20	...	10	10	...	14	14	...	18	18	...	62
7	Boils and abscesses	28	28	...	14	14	...	25	25	...	8	8	...	75
8	Keloids	5	...	...	...	...	...	2	...	...	1	...	...	8
9	Warts	4	...	4	...	...	...	2	...	2	...	...	...	6
10	Leucodermic patches	4	4	...	20	20	...	6	6	...	30	30	...	60
11	Tumours	2	...	2	...	...	...	2	...	2	...	...	...	4
12	Obesity	...	...	...	...	...	...	1	...	...	...	...	...	1
13	Whitlow	...	...	...	...	...	...	1	...	...	...	...	...	1
14	General Xerosis	4	4	...	...	...	...	5	5	...	...	...	...	9
15	Dog & rat bite	...	...	...	...	...	...	3	1	2	...	...	...	3
16	Sinus	...	...	...	...	...	...	1	...	1	...	...	...	1
17	Burns & Scalds	...	...	...	...	...	...	1	...	1	...	...	...	1
18	Other Conditions	9	5	...	5	5	...	26	13	12	13	12	...	53

N.B.—Cases not amenable to or not requiring treatment have been omitted in the treatment column.

Statement showing the details of defects found on Medical
Inspection of Schools, 1933-34.

No.	System or Organs.	Details.	No. Defective.				Total defective of boys and girls.
			Entrants.		Regulars.		
			Boys.	Girls.	Boys.	Girls.	
1	Ear.	1. Otorrhoea ...	95	49	154	82	380
		2. Otitis ...	8	22	12	19	61
		3. Other ear diseases ...	12	...	25	...	37
		4. Defective hearing ...	4	3	3	5	15
2	Speech.	1. Stammering ...	13	6	31	5	55
		2. Lispings ...	1	...	3	...	4
		3. Dumb ...	2	...	1	...	3
3	Heart and circulation.	1. Heart Disease (a) Organic ...	11	6	28	2	47
		(b) Functional ...	29	...	36	4	69
		2. Anaemia ...	40	2	56	17	115
		3. Other conditions ...	1	1	2	...	4
4	Lungs.	1. Bronchitis (acute and chronic) ...	300	54	243	50	647
		2. Other non-tubercular diseases (asthma, etc.) ...	6	1	16	2	25
5	Tuberculosis.	1. Pulmonary (a) Definite ...	...	1	1	1	3
		(b) Suspected ...	6	4	13	9	32
		2. Non-Pulmonary (a) Glands ...	...	1	...	4	5
		(b) Spine ...	...	...	...	...	...
		(c) Hip ...	...	...	1	...	1
		(d) Bones & Joints ...	...	...	...	...	...
		(e) Skin ...	2	...	...	...	2
		(f) Other forms ...	...	...	...	...	...
6	Abdominal Organs.	1. Enlarged Spleen ...	165	14	88	7	274
		2. " Liver ...	3	...	6	...	9
		3. " Liver and Spleen ...	3	1	2	1	7
		4. Hydrocele (a) Vaginal ...	13	...	19	...	32
		(b) Cord ...	1	...	1	...	2
		(c) Infantile ...	4	...	19	...	23
		5. Hernia (a) Inguinal ...	22	...	50	...	72
		(b) Umbilical ...	7	1	9	3	20
		(c) Femoral ...	...	...	...	...	...
		6. Stomach conditions ...	1	...	3	...	4
		7. Bowel conditions ...	21	1	20	2	44
		8. Other conditions ...	4	2	9	...	15
		9. Generative disorders in girls ...	...	...	...	...	...
7	Bones and Joints.	1. Bones (a) Fractures ...	1	...	1	...	2
		(b) Caries ...	...	...	...	...	...
		(c) Deformities ...	...	1	...	2	3
		(d) Diseases ...	...	...	...	...	...
		2. Joints (a) Dislocations & sprains ...	2	...	1	1	4
		(b) Diseases ...	...	...	...	2	2
		(c) Deformities ...	...	1	...	1	2
		3. Rickets (a) General ...	127	...	150	...	277
		(b) Deformed chest... 118	10	140	12	...	280
8	Nervous System.	1. Organic disease (palsies etc.) ...	3	...	2	1	6
		2. Functional disorders ...	3	...	8	...	11
		3. Other conditions ...	1	...	6	...	7
9	Psychic System.	1. Mentally defective ...	2	1	2	...	5
10	Deformities.	1. General Deformity—					
		(a) Spinal deformity ...	5	1	5	...	11
		(b) Talipes ...	...	1	3	...	4
		(c) Shortened limbs ...	2	1	12	...	15
		(d) Congenital dislocation hip ...	...	...	...	...	...
		(e) Ankylosis of joints ...	2	...	6	1	9
		(f) Amputated limbs ...	...	...	...	...	...
		(g) Genu Varum & Valgum ...	1	...	1	...	2
		(h) Supernumerary fingers ...	...	1	3	...	4
		(i) Flat foot ...	...	1	...	2	3
		(j) Syndactily ...	...	...	1	...	1
		(k) Dwarf ...	...	1	...	...	1
		(l) Other conditions ...	7	...	11	4	22

Statement of "following-up" work done showing the results of medical advice, 1933-1934.

No.	Headings.	Diseases.	Operations performed after medical advice.	No. of cases cured after treatment	No. of cases improved after treatment.	No. of cases where treatment was continued.	Remarks
1	...	Malnutrition	...	285	2246	1202	* Cleaned by a dentist.
2	Teeth & Mouth.	Dirty teeth	4*	68†	121	114	† Cleaned or washed daily.
		Dental Caries	34‡	100§	32	88	‡ Extracted.
							§ Fallen out.
		Stomatitis	...	568	444	599	
		Glossitis	...	27	16	27	
		Salivary fistula	...	...	...	1	
3	Nose & Throat.	Nasal Catarrh and Rhinitis.	...	108	56	124	
		Enlarged Tonsils and Adenoids.	133	451	1453	1393	
		Enlarged Cervical glands.	...	139	318	273	
		Granular Pharynx...	...	2	3	...	
		Nasal Polypus	1	...	...	...
		Enlarged Sub-maxillary glands.	...	2	...	...
		Pharyngitis	...	1	...	...
4	Eye Diseases	Conjunctivitis	...	126	15	19	
		Xerosis	...	35	52	84	
		Stye	...	20	3	1	
		Granular lids	...	39	45	74	
		Blepharitis	...	4	2	...	
		Leucoma	1	...	...	8	
		Staphyloma	...	...	...	1	
		Cataract	...	...	...	1	
		Keratitis	...	...	1	...	
		Pterygium	...	1	...	...
		Nystagmus	...	...	...	1	
		Naso-lachrymal obstruction.	1	...	...	1	
		Squint	...	...	...	3	
		Corneal opacity	...	...	7	16	
		Corneal ulcer	...	...	...	1	
		Ptosis	...	...	...	1	
		Photophobia	...	...	1	1	
		Keratomalacia	...	...	...	1	
5	Defective Vision	...	8**	35	46	73	**Vision corrected by glasses.
6	Ear Diseases	Otitis	...	23	6	6	The rest took Cod-liver oil.
		Otorrhoea	...	156	74	59	
		Wax ear	...	9	...	1	
7	Circulatory System.	Anaemia	...	17	37	34	
		Functional disease of the heart.	...	7	28	31	
		Organic disease of the heart.	...	...	9	23	
		Other conditions	...	1	...	...
8	Tuberculosis	Pulmonary—	...	...	...	...
		(a) Definite	...	...	1	1	One Acute case died inspite of treatment
		(b) Suspicious	...	5††	6	21	††arrested.
		Other forms	...	...	...	8	

Statement of "following-up" work done showing the results of medical advice 1933-1934.—*contd.*

No.	Headings.	Diseases.	Operations performed after medical advice.	No. of cases cured after treatment.	No. of cases improved after treatment.	No. of cases where treatment was continued.	Remarks.
9	Respiratory System.	Bronchitis ... Bronchial Asthma.	... ...	310 ...	70 6	64 9	
10	Abdominal Organs.	Enlarged Spleen ... " Liver ... " Spleen and Liver. Diarrhoea ... Dysentery ... Colic ... Colitis ... Gastritis ... Chronic constipation ... Jaundice ... Inguinal Hernia ... Umbilical Hernia ... Chronic Bright's Disease.	... ... ... ... ... ... ... ... ... ... 3	51 3 ... 2 8 11 1 2 1 1 1 1	92 2 1 ... 1 3 8	118 1 1 2 4 2 ...	13 not traceable. 3 " "
11	Bones & Joints.	Fractures ... Ricky Chest and General Rickets.	2 ...	... ...	... 163	... 284	Set right at Hospital.
12	Infectious and Contagious Diseases.	Scabies ... Eczema ... Leprosy ... Ringworm ... Lichen ... Pruritis ... Urticaria ... Psoriasis ... Malaria ... Hookworm ... Mumps ... Influenza ... Kala-Azar ... Dermatitis ... Gonorrhoea ... Impetigo ...	... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ...	1466 58 ... 101 1 ... 4 ... 12 3 2 13 1 1 ... 1	450 15 54 42 19 1 ... 1 16 5 1 5	356 18 220 185 33 4 5 ... 3	50 Indifferent.
13	Nervous and Psychic systems.	Palsies ... Incontinence of urine. Epilepsy ... Other conditions ... Mentally defective ...	... ... ... ... ...	... 1 ... ... ...	... 3 ... 3 ...	3 ... 1 3 1	
14	Other diseases and defects.	Worms ... Wounds, cuts, ulcers etc. Boils and Abscesses. Pyrexia ... Phimosis ... Leucodermic patches. Burns and Scalds ... Sinuses ... Enlarged Groin glands. Warts ... Rat bite ... Other conditions ...	... 1* 28† ... 17	452 145 19 52 1 1 1 19	10 3 20 9 1 ... 5	20 15 16 3	* Anti-tetanic Serum given. † Incised at Corporation dispensaries.

Water Analysis Statements.

Table I.—Showing the Meteorological Data from 1924—1933.

Year.	1924			1925			1926			1927			1928			1929			1930			1931			1932			1933		
	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.	Velocity in miles.	Bright Sunshine in hours.	Cloudy Sky in percentage.
January	135	7.4	42	110	7.3	35	131	7.4	38	132	7.7	51	154	8.0	44	125	8.5	33	120	7.8	45	154	8.1	42	151	8.9	28	225	8.0	59
February	112	9.2	21	106	9.8	16	98	9.5	16	144	9.7	35	109	9.4	25	100	8.9	30	124	8.3	41	104	9.9	27	138	9.5	30	184	10.2	51
March	109	8.9	19	130	7.6	32	147	8.9	19	144	9.0	46	121	9.4	26	115	10.4	17	129	9.6	34	138	10.1	16	122	10.1	23	187	9.4	33
April	196	9.9	22	192	9.4	21	188	9.4	28	196	9.8	24	158	9.6	33	145	8.9	42	168	10.0	25	176	9.4	33	150	9.3	38	210	10.1	49
May	194	6.6	37	173	6.8	44	171	7.5	52	207	8.6	42	211	9.6	26	196	8.2	40	185	7.2	50	196	8.2	41	179	8.1	55	207	8.3	71
June	203	5.1	64	179	4.9	59	213	6.0	55	204	5.5	65	218	5.7	60	217	5.1	74	180	4.8	71	196	7.4	51	209	7.4	55	186	6.0	78
July	167	4.3	76	164	4.0	72	174	4.2	84	190	4.4	80	177	4.6	76	192	5.3	74	184	5.8	65	156	4.8	78	191	4.8	82	176	4.8	82
August	153	5.0	61	146	5.2	74	174	3.8	83	159	5.5	72	167	5.7	70	165	5.4	73	160	5.9	67	169	6.3	73	142	7.1	65	163	4.9	84
September	118	4.7	60	147	7.7	37	136	5.6	68	135	6.6	63	129	5.8	61	134	6.7	58	153	7.4	54	125	6.1	64	151	6.1	62	169	6.1	77
October	118	6.6	51	117	4.4	72	113	6.2	60	134	7.1	55	104	6.2	56	119	6.0	63	115	4.5	73	122	6.4	57	93	5.1	69	141	4.7	79
November	133	3.5	74	151	5.0	68	148	5.0	65	163	5.8	60	152	6.2	58	170	5.7	65	173	4.4	72	139	5.3	68	187	4.4	76	193	7.4	68
December	161	6.3	38	165	4.0	64	167	6.1	55	165	7.4	47	190	5.7	65	138	6.9	50	126	6.5	55	206	4.7	71	212	7.2	47	245	7.4	60
Average	150	6.5	47	148	6.3	50	153	6.6	52	164	7.3	53	160	7.2	50	151	7.2	52	151	6.9	56	157	7.2	52	160	7.3	53	191	7.3	64

TABLE I (a)—Showing the Monthly Average Rainfall at Red Hills Lake during a period of Ten Years (1924-1933).
(Rainfall expressed in inches.)

Year.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	Ten Year's monthwar average.
January	0.08	0.48	1.08	0.44	0.56	1.70	2.78	0.20	Nil.	Nil.	0.73
February	Nil.	Nil.	Nil.	0.22	1.45	3.71	2.65	Nil.	Nil.	Nil.	0.80
March	Nil.	1.25	0.70	Nil.	0.35	Nil.	Nil.	Nil.	Nil.	3.50	0.58
April	Nil.	Nil.	0.13	0.26	0.02	0.76	Nil.	1.72	Nil.	Nil.	0.29
May	Nil.	4.72	0.20	1.27	0.90	0.33	6.10	0.70	2.95	Nil.	1.71
June	1.51	0.05	0.05	2.31	1.35	1.47	2.31	2.85	1.07	2.18	1.62
July	5.20	1.98	3.74	1.92	2.72	2.02	1.61	4.99	0.34	2.63	2.62
August	0.72	4.40	3.32	4.06	3.20	2.61	2.53	2.73	2.22	3.03	2.88
September	7.24	0.30	2.18	4.92	5.57	5.24	1.96	4.96	4.22	2.85	3.94
October	8.76	15.60	5.31	5.12	20.19	9.11	26.61	8.60	14.06	7.51	12.09
November	18.38	15.78	8.28	11.26	6.15	14.74	23.84	16.78	12.37	9.40	13.70
December	0.78	13.87	1.21	1.96	2.36	3.72	4.90	12.59	1.83	14.40	5.76
Yearly Rainfall	43.40	58.43	26.20	32.76	44.82	45.44	75.29	56.12	39.03	46.40	46.72

TABLE I—(b) showing the Monthly Average Lake Level at Red Hills Lake for a period of 10 years (1924-1933).
Lake level expressed in feet.†

Year.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	Ten years' monthwar average.
January	61.74	63.13	65.77	60.16	61.37	63.25	65.20	65.87	65.55	65.05	63.71
February	60.45	62.19	64.32	58.98	60.64	62.80	65.47	65.39	65.28	63.96	62.96
March	59.28	61.04	64.32	57.73	59.59	62.63	65.34	64.04	64.05	63.49	62.16
April	57.78	59.59	63.55	56.35	58.69	61.66	62.25	62.85	62.74	63.13	60.86
May	56.28	58.42	62.40	54.93	57.41	60.55	63.95	62.60	62.57	62.25	60.14
June	55.11	58.36	61.02	53.38	55.89	58.18	64.33	61.80	61.00	62.15	59.12
July	54.13	57.02	59.43	52.20	54.58	57.92	64.91	61.38	59.53	59.43	58.05
August	53.32	57.20	58.44	51.19	53.47	56.87	63.55	62.97	58.39	58.64	57.40
September	52.32	57.53	57.54	50.71	52.43	55.82	63.75	63.16	57.95	58.00	56.92
October	54.93	58.75	58.93	53.29	54.40	55.78	63.83	64.26	57.65	57.50	57.93
November	58.83	62.54	61.62	58.63	62.67	61.98	64.55	64.49	62.12	58.86	61.63
December	63.49	64.47	61.61	61.89	63.80	65.08	65.75	64.47	65.10	62.39	63.81
Yearly average	57.31	60.02	61.58	56.79	57.92	60.21	64.41	63.61	61.83	61.24	60.39

† Deduct 43.05 from the values given here to get the exact depth.

TABLE I (c)--Showing the Monthly Rainfall and Lake Level in Sholavaram Lake for 1933.

Month.	Total Rainfall in inches.	Depth of water over sill of sluice	
		on the first of the month.	on the last day of the month.
January	Nil.	11.73 feet.	12.02 feet.
February	Nil.	12.01 "	11.28 "
March	3.12	11.26 "	11.74 "
April	0.69	11.72 "	6.50 "
May	Nil.	6.48 "	2.11 "
June	1.91	1.95 "	0.45 "
July	3.69	0.45 "	1.22 "
August	6.44	1.20 "	1.40 "
September	1.93	1.39 "	1.08 "
October	8.70	1.15 "	2.80 "
November	8.44	2.80 "	1.95 "
December	18.52	1.95 "	15.20 "
Total	53.44	...	...

TABLE I (d).

Temperature of Red Hills Lake Region--monthly averages for 1933.

1933.	Maximum ° F.	Minimum ° F.	Mean ° F.
January	100	71	85.60
February	94	71	82.28
March	100	71	85.68
April	102	71	86.35
May	103	71	87.21
June	102	71	86.68
July	101	71	86.10
August	101	71	85.78
September	100	71	85.30
October	99	70	84.68
November	99	70	84.43
December	98	70	84.07
Yearly average	100	71	85.35

TABLE II.

Limnological Data for Red Hills Lake for 1933.

(Surface water collected about hundred yards away from Jones Tower.)

Date of Collection.	Depth in feet.	Transparency in cms.	Temperature of surface water °C.	Dissolved oxygen in cc. per litre.	Milligrams per litre.			pH.	Results expressed in parts per 100,000.								Lactose fermenters present in 2 cc. and upwards?	Total colonies per c.c. on agar at 37°C after 48 hours.	Meteorological conditions.	
					Free CO ₂ .	CO ₂ .	HCO ₃ .		Total Solids.	Fixed Solids.	Ignitable matter.	Combined Chlorine.	Ammoniacal N.	Albuminoid N.	Absorbed Oxygen (Tidy's).	Nitric N.				Nitrous N.
15-1-33	22-25	...	26.6	5.32	Nil.	7.5	106.8	8.3	18.8	14.8	4.0	4.25	Trace.	0.036	0.117	Nil	Nil.	20 cc	850	Not clear blue sky-white clouds in plenty -not very bright sunshine-strong wind -big waves.
12-2-33	21-27	...	27.2	5.20	"	6.0	112.9	8.5	19.8	15.6	4.2	4.35	"	0.031	0.098	"	"	10 cc	1200	Sampled at 4 p. m.-whitish blue sky-not bright sunshine-still-no winds.
18-3-33	21-27	...	28.1	4.80	"	4.5	112.9	8.5	22.0	18.0	4.0	4.95	0.003	0.049	0.133	"	"	5 cc	900	Not recorded.
9-4-33	20-20	...	29.6	4.64	"	4.5	111.3	8.7	20.0	15.0	5.0	4.95	0.002	0.031	0.138	"	"	20 cc	540	Do.
30-4-33	20-05	95.0	30.0	5.24	"	9.0	112.9	8.9	...	...	...	5.55	Trace.	0.031	0.112	"	"	1 cc	1080	Do.
27-5-33	18-89	107.5	30.4	5.24	"	9.0	113.6	8.5	24.4	18.0	6.4	5.65	0.002	0.029	0.140	"	"	20 cc	800	Sampled at 12 noon-white clouds in plenty-not bright sunshine-slight wind-ripples formed.
18- 6-33	17-83	100.0	29.8	5.00	"	9.0	109.8	8.8	24.0	18.0	6.0	6.00	Trace.	0.036	0.136	"	"	60 cc	580	Sampled at 1 p.m.-cloudy sky-not bright sunshine-winds strong-big waves.
23- 7-33	16-54	108.0	30.5	5.03	"	15.0	109.8	8.7	24.4	17.4	7.0	7.35	"	0.038	0.127	"	"	5 cc	900	Cloudy sky-not bright sunshine-strong winds-big waves.
20- 8-33	16-29	85.5	31.5	4.90	"	15.0	108.3	8.7	31.0	24.6	6.4	7.35	"	0.060	0.142	"	"	5 cc	910	Sampled at 11 a.m.-clear blue sky-very bright sunshine - no wind-surface smooth.
7-10-33	14-80	100.0	30.4	5.32	"	22.5	100.7	8.7	34.0	27.0	7.0	6.75	"	0.056	0.216	"	"	5 cc	840	Sampled at 12 noon-cloudy sky-not bright sunshine-drizzling-moderate wind-surface agitated.
12-11- 3	16.00	79.0	28.4	5.40	"	13.5	106.8	8.7	...	...	...	7.05	"	0.040	0.155	"	"	1 cc	1350	Sampled at 10-30 a.m.-clear blue sky-bright sunshine-no wind-surface smooth.
23-12-33	22-77	36.0	26.8	5.41	present	Absent	86.93	7.7	20.6	13.6	7.0	3.50	0.020	0.022	0.096	"	"	1 cc	1790	Sampled at 12 noon-few white clouds-bright sunshine-no wind-smooth surface.

† Samples were not collected in September.

TABLE III.

Limnological Data for Sholavaram Lake for 1933.

(Surface water collected near the Head-sludge.)

Date of Collection.	Depth in feet.	Transparency in cms.	Temperature of surface water.	Dissolved oxygen in cc. per litre.	Milligrams per litre.			Hd.	Results expressed in parts per 100,000.								Lactose fermenters present in 1 cc. and up-wards?	Total colonies per c.c. on agar at 37°C after 48 hours.	Meteorological conditions.
					Free CO ₂	CO ₂	HCO ₃		Total Solids.	Fixed Solids.	Ignitable matter.	Combined Chlorine.	Ammoniacal N.	Albuminoid N.	Absorbed oxygen (Tidy's.)	Nitric N.			
15-1-33	11-95	...	...	...	...	...	...	3-7	...	Trace	0-013	0-119	Nil	Nil	5 cc	860	Not recorded.
12-2-33	11-89	...	...	...	...	...	...	...	5-25	0-002	0-013	0-081	"	"	1 cc	1300	Do.
18-3-33	11-79	...	...	...	...	...	...	...	...	0-002	0-036	0-154	"	"	5 cc	1200	Do.
9-4-33	11-38	...	...	...	...	...	...	9-1	...	0-002	0-031	0-131	"	"	60 cc	640	Do.
30-4-33	6-50	65-0	...	...	...	...	...	...	6-85	Trace	0-025	0-136	"	"	5 cc	970	Do.
27-5-33	2-72	50-0	...	...	...	...	...	8-7	7-95	"	0-036	0-168	"	"	1 cc	1800	Sampled at 10 a.m.-white clouds in plenty-not bright sunshine-slight wind -surface not smooth.
18-6-33	0-80	26-5	...	...	Nil	12-0	149-5	8-8	9-60	"	0-034	0-254	"	"	10 cc	890	Sampled at 8-30 a.m.-cloudy sky-not bright sunshine-strong wind-big waves.
23-7-33	2-00	32-0	30-5	5-03	"	21-0	91-5	8-9	8-25	0-003	0-040	0-311	"	"	1 cc	1400	Sampled at 9-30 a.m.-sky entirely cloudy -not bright sunshine-moderate wind-surface agitated.		
20-8-33	1-85	41-0	31-0	4-71	"	24-0	67-1	8-9	6-76	0-011	0-063	0-205	"	"	1 cc	1300	Sampled at 9 a.m.-almost a clear blue sky-bright sunshine-slight wind -surface agitated.		
7-10-33	1-15	41-3	29-8	4-37	"	16-5	100-7	8-7	7-05	0-006	0-040	0-151	"	"	5 cc	900	Sampled at 10-30 a.m.-sky entirely cloudy-not bright sunshine-no wind-smooth surface.		
12-11-33	4-23	42-0	27-4	5-44	"	15-0	61-0	8-7	4-75	Trace	0-026	0-121	"	"	0-1 cc	1500	Sampled at 9 a.m.-clear blue sky-bright sunshine-no wind-smooth surface.		
23-12-33	12-90	28-0	26-4	5-60	present	Nil	62-5	7-5	1-40	"	0-022	0-101	"	"	1-0 cc	850	Sampled at 10-30 a.m.-heavy rains-dark clouds-not bright sunshine-no wind.		

† Samples were not collected in September.

TABLE IV.

Combined Chlorine, pH., Temperature and Dissolved Gases and Turbidity in Raw-water
taken at the Kilpauk end of the Raw-water Conduit.
(Results of Weekly Analysis.)

Date.	Combined chlorine in parts per 100,000.	Actual figure.	Temperature of surface water.	Milligrams per litre.			Dissolved oxygen in c.c. per litre.	Transparency in cms.
		pH.		Free CO ₂	CO ₃	H CO ₃		
4-1-33	4.15	8.1						
10-1-33	4.25	8.1						
17-1-33	4.25	8.1						
24-1-33	4.35	8.3						
31-1-33	4.35	8.3						
Average	4.27	8.18						
7-2-33	4.55	8.5						
15-2-33	4.45	8.5						
24-2-33	4.55	8.5						
28-2-33	4.55	8.5						
Average	4.53	8.5						
7-3-33	4.65	8.6						
14-3-33	4.65	8.3						
21-3-33	4.95	8.5						
28-3-33	4.95	8.6						
Average	4.80	8.48						
4-4-33	4.95	8.7						
11-4-33	5.15	8.7						108.0
21-4-33	5.35	8.6						105.0
25-4-33	5.35	8.6						106.5
Average	5.20	8.65						106.0
2-5-33	5.55	8.5						106.0
9-5-33	5.55	8.6						126.0
16-5-33	5.75	8.7						115.0
23-5-33	5.75	8.7						113.5
30-5-33	5.75	8.7						113.3
Average	5.67	8.64						100.0
13-6-33	5.85	8.7	30.6	Nil.	9.00	43.7	4.60	100.0
21-6-33	5.55	8.7	31.0	"	10.5	115.9	4.50	100.0
27-6-33	6.15	8.7	28.6	"	12.0	111.3	4.05	116.0
Average	5.85	8.70	30.07	Nil	10.50	90.30	4.38	105.3
5-7-33	6.15	8.7	31.0	Nil	12.0	112.9	4.30	114.5
13-7-33	6.15	8.7	28.0	"	10.5	115.9	4.40	117.0
19-7-33	6.15	8.7	31.0	"	12.0	115.9	4.24	111.0
25-7-33	6.95	8.5	30.0	"	15.0	109.8	4.28	114.0
Average	6.35	8.65	30.0	Nil	12.38	113.63	4.31	114.13

TABLE IV—(contd.)

Combined Chlorine, pH., Temperature, and Dissolved Gases and Turbidity in Raw-water taken at the Kilpauk end of the Raw-water conduit (Results of Weekly Analysis).

Date.	Combined chlorine in parts per 100,000.	Actual figure.	Temperature of surface water.	Milligrams per litre.			Dissolved oxygen in c.c. per litre.	Transparency in cms.
		pH.		Free CO ₂	CO ₂	HCO ₃		
1-8-33	7.75	8.5	28.4	Nil.	15.0	109.80	4.47	113.0
8-8-33	7.15	8.5	29.0	"	9.0	123.50	4.02	96.0
15-8-33	7.15	8.5	29.6	"	12.0	112.90	4.55	97.0
23-8-33	7.35	8.6	32.0	"	9.0	122.00	4.26	98.0
29-8-33	7.45	8.7	31.5	"	13.5	115.90	4.70	98.0
Average.	7.37	8.56	30.1	"	11.7	116.82	4.40	100.4
5-9-33	6.65	8.5	29.6	"	15.0	120.50	4.69	92.0
14-9-33	6.90	8.7	27.9	"	15.0	115.90	4.96	86.0
20-9-33	6.65	8.7	29.6	"	18.0	109.80	5.21	82.0
26-9-33	6.85	8.7	30.5	"	12.0	125.10	5.05	81.0
Average.	6.76	8.65	29.4	"	15.0	117.83	4.98	85.3
3-10-33	6.95	8.7	30.0	"	18.0	109.80	5.11	86.0
10-10-33	7.25	8.7	31.7	"	15.0	112.90	4.87	100.0
17-10-33	7.15	8.7	28.4	"	15.0	112.90	5.40	93.4
24-10-33	7.35	8.5	30.3	"	19.5	106.80	5.36	84.5
31-10-33	7.35	8.5	28.1	"	13.5	119.00	5.22	99.0
Average.	7.21	8.62	29.7	"	16.2	112.28	5.19	92.6
7-11-33	7.05	8.7	28.0	"	13.5	117.40	5.25	87.5
14-11-33	6.95	8.5	28.4	"	12.0	106.80	5.12	86.0
21-11-33	6.35	8.5	27.8	"	10.5	106.80	5.43	82.0
28-11-33	6.55	8.5	28.4	"	13.5	94.60	5.13	88.0
Average.	6.73	8.55	28.15	"	12.35	106.40	5.23	85.9
5-12-33	6.55	8.5	27.0	"	12.0	100.70	5.90	88.0
12-12-33	6.75	8.5	25.4	"	10.5	112.90	5.79	92.0
16-12-33	5.95	8.3	23.4	"	7.5	102.20	5.46	84.5
19-12-33	5.15	8.1	26.5	"	4.5	85.40	5.63	40.0
26-12-33	3.50	7.7	26.2	Present	Absent.	88.50	5.38	62.5
Average.	5.58	8.22	25.7	Nil.	6.90	97.94	5.63	73.4

TABLE V—Showing the length of Runs of Filters at work during 1933.

Bed No.	Total No. of runs during the year.	Total No. of days.	Average No. of days per run.	Remarks.
1	11	209	19.0	
2	12	237	19.8	
3	12	244	20.3	
4	11	206	18.7	
5	15	217	14.5	
6	10	193	19.3	
7	12	237	19.8	
8	12	196	16.3	
9	8	220	27.5	
10	10	228	22.8	
11	12	200	16.7	
12	9	161	17.9	
13	11	234	21.3	
14	10	175	17.5	
15	Nil.	Nil.	...	
16	Nil.	Nil.	...	
17	Nil.	Nil.	...	

Table VI.—Showing the Chemical Results for 1933—(expressed in parts per 100,000).

1933	Red Hills Lake.			Raw-water Kilpauk end of R. W. Conduit.			Coarse Filtered Raw-water.			Filtrates from Beds.			Test tap Kilpauk Pumping Station.			Distribution System.		
	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.
January ...	Trace	0.028	0.118	Trace	0.034	0.102	...	...	...	0.003	0.023	0.091	0.002	0.023	0.075	*...	...	...
February...	Trace	0.024	0.089	Trace	0.035	0.123	...	...	...	0.005	0.032	0.114	0.004	0.032	0.095	Trace	0.028	0.091
March ...	0.002	0.043	0.140	0.001	0.044	0.144	...	...	...	0.005	0.037	0.109	0.006	0.035	0.095	0.009	0.034	0.097
April ...	0.001	0.034	0.134	Trace	0.035	0.135	0.002	0.032	0.132	0.010	0.033	0.111	0.008	0.030	0.088	...	...	0.083
May ...	0.001	0.028	0.149	Trace	0.035	0.134	0.001	0.028	0.130	0.004	0.028	0.111	0.006	0.029	0.093	...	...	...
June ...	Trace	0.033	0.178	Trace	0.032	0.156	0.001	0.034	0.145	0.006	0.026	0.120	0.006	0.025	0.101	0.005	0.029	0.092
July ...	0.001	0.038	0.189	0.001	0.033	0.142	Trace	0.020	0.140	0.002	0.032	0.132	0.004	0.027	0.114	0.001	0.031	0.104
August ...	0.005	0.060	0.164	0.002	0.043	0.161	0.001	0.040	0.146	0.006	0.035	0.120	0.007	0.031	0.103	0.005	0.037	0.099
September.	...	...	...	Trace	0.057	0.186	0.002	0.052	0.183	0.008	0.039	0.134	0.009	0.037	0.118	0.010	0.039	0.111
October ...	0.003	0.048	0.186	0.002	0.051	0.165	0.005	0.055	0.170	0.006	0.047	0.142	0.006	0.043	0.127	0.010	0.046	0.115
November.	Trace	0.037	0.137	Trace	0.043	0.153	0.001	0.043	0.152	0.003	0.039	0.126	0.005	0.038	0.104	0.006	0.038	0.101
December.	0.008	0.022	0.116	Trace	0.044	0.135	0.003	0.038	0.145	0.004	0.036	0.121	0.006	0.033	0.092	0.015	0.025	0.079
Average ...	0.002	0.036	0.145	0.001	0.041	0.145	0.002	0.038	0.149	0.006	0.034	0.119	0.006	0.032	0.100	0.007	0.034	0.097

* Samples were not collected.

TABLE VII.--Raw-water (Kilpauk end of the Raw-water conduit)
Absorbed Oxygen in parts per 100,000.

Year.	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	Month war average.
January	... 0.158	0.136	0.127	0.135	0.146	0.143	0.155	0.141	0.120	0.102	0.136
February	... 0.179	0.140	0.139	0.187	0.150	0.140	0.175	0.139	0.133	0.123	0.151
March	... 0.195	0.170	0.175	0.208	0.182	0.154	0.186	0.128	0.138	0.144	0.168
April	... 0.209	0.177	0.150	0.209	0.160	0.179	0.237	0.145	0.135	0.135	0.174
May	... 0.199	0.206	0.156	0.197	0.147	0.187	0.200	0.159	0.171	0.184	0.176
June	... 0.198	0.200	0.176	0.205	0.162	0.191	0.201	0.152	0.192	0.156	0.183
July	... 0.201	0.201	0.177	0.213	0.235	0.221	0.176	0.140	0.168	0.142	0.187
August	... 0.210	0.216	0.186	0.227	0.237	0.224	0.196	0.153	0.184	0.16	0.199
September	... 0.220	0.192	0.195	0.291	0.220	0.217	0.230	0.154	0.157	0.186	0.206
October	... 0.200	0.162	0.181	0.289	0.219	0.201	0.154	0.141	0.156	0.165	0.187
November	... 0.160	0.143	0.142	0.167	0.141	0.157	0.157	0.121	0.113	0.153	0.145
December	... 0.152	0.141	0.149	0.130	0.150	0.131	0.092	0.110	0.092	0.135	0.128
Yearwar average ...	0.190	0.174	0.163	0.205	0.179	0.179	0.180	0.140	0.147	0.145	0.170

TABLE VIII.—Showing the Applied Dose of Chlorine for Filtered water.

1933.	Applied dose parts per million.	Remarks
January	... 0.63	
February	... 0.63	
March	... 0.66	0.63 — 0.71.
April	... 0.67	0.60 — 0.68.
May	... 0.68	0.66 — 0.68 (0.66 for 5 days.)
June	... 0.66	0.63 — 0.66 (0.63 for 2 days.)
July	... 0.66	0.63 — 0.66 (0.63 for 5 days.)
August	... 0.65	0.63 — 0.66 (0.63 for 10 days.)
September	... 0.66	
October	... 0.70	<div> 0.55 — 1.00. 8 days — 0.66. 1 day — 0.60. 12 days — 0.55. 2 days — 0.57. 8 days — 1.0 </div>
November	... 1.0	
December	... 1.0	
Average for the year	... 0.72	

TABLE IX.
Bacteriological Results—1935—Percentage Averages.

1933, Months.	Red Hills Lake.										Raw water Kipauk end of R.W. Conduit.										Raw water Coarse Filtered.										Filtrates from Beds.										Test Tap, Kipauk Pumping Station.										Distribution System.									
	Lactose fermenters in										Lactose fermenters in										Lactose fermenters in										Lactose fermenters in										Lactose fermenters in										Lactose fermenters in									
	Number of Samples, Total Colonies per c.c. on Nutrient Agar at 37°C.	-60 c.c.	+40 c.c.	+20 c.c.	+10 c.c.	+5 c.c.	+1 c.c.	+0.1 c.c.	Number of Samples, Total Colonies per c.c. on Nutrient Agar at 37°C.	-60 c.c.	+40 c.c.	+20 c.c.	+10 c.c.	+5 c.c.	+1 c.c.	+0.1 c.c.	Number of Samples, Total Colonies per c.c. on Nutrient Agar at 37°C.	-60 c.c.	+40 c.c.	+20 c.c.	+10 c.c.	+5 c.c.	+1 c.c.	+0.1 c.c.	Number of Samples, Total Colonies per c.c. on Nutrient Agar at 37°C.	-60 c.c.	+40 c.c.	+20 c.c.	+10 c.c.	+5 c.c.	+1 c.c.	+0.1 c.c.	Number of Samples, Total Colonies per c.c. on Nutrient Agar at 37°C.	-60 c.c.	+40 c.c.	+20 c.c.	+10 c.c.	+5 c.c.	+1 c.c.	+0.1 c.c.																				
January	720	...	...	...	...	...	...	...	710	...	...	...	...	...	...	...	...	520	143	286	28	21	4	7	1	27	353	300	300	30	37	...	...	...	...	...	...	...	...													
February	1450	...	...	...	...	...	...	...	820	...	...	...	...	...	...	...	...	570	30	253	11	17	3	3	...	...	416	30	430	140	...	...	...	...	...	...	...	...	...												
March	1030	...	...	...	...	...	...	...	800	...	...	...	...	...	...	...	...	599	15	227	22	22	7	4	...	...	433	127	160	160	170	...	...	...	...	...	...	...	...													
April	730	143	143	285	143	143	143	143	740	...	...	...	...	...	...	...	...	610	80	40	21	22	27	4	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
May	280	...	...	...	...	...	...	...	790	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
June	690	...	...	...	...	...	...	...	730	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
July	1050	...	...	...	...	...	...	...	780	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
August	1070	...	...	...	...	...	...	...	1120	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
September	...	...	...	...	...	...	...	...	880	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
October	870	...	...	...	...	...	...	...	910	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
November	1463	...	...	...	...	...	...	...	940	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
December	2024	...	...	...	...	...	...	...	800	...	...	...	...	...	...	...	...	340	30	253	11	17	3	3	...	...	338	314	318	280	321	...	...	...	...	...	...	...	...													
Average	3	923	1-2	4-0	16-3	5-6	21-2	37-4	3-8	5	810	...	...	10-4	19-0	80-1	29-5	...	...	...	...	...	...	...	...	...	346	162	352	232	47	0-4	...	...	...	...	...	...	...														

TABLE X—Showing the quantity of water filtered during 1933.

Bed No.	Quantity of water in million gallons filtered at		Total quantity filtered in million gallons.	Remarks.
	8" vertical per hour.	12" vertical per hour.		
1	136.50	323.00	459.50	
2	175.50	450.00	625.50	
3	164.00	486.00	650.00	
4	187.00	339.00	526.00	
5	123.00	468.00	591.00	
6	96.50	547.00	643.50	
7	159.00	474.00	633.00	
8	195.75	297.00	492.75	
9	120.00	480.00	600.00	
10	192.50	396.00	588.50	
11	96.00	456.00	552.00	
12	136.00	279.00	415.00	
13	93.40	374.75	468.15	
14	122.00	339.00	461.00	
15	Nil.	Nil.	Nil.	
16	Nil.	Nil.	Nil.	
17	Nil.	Nil.	Nil.	
	1997.15	5708.75	7705.90	

Average quantity of water filtered per day—21.11 million gallons.

APPENDIX A.

Results of Analysis of samples of sewage collected from the well in the Napier Park Sewage Pumping Station, Madras.

Date of Collection :— 7-9-1933. (Thursday).

Date of Analysis :— 8-9-1933. (Friday).

Results expressed in parts per 100,000.

		8 A. M.	12 A. M.	4 P. M.	8 P. M.
I. Suspended solids (by centrifuge)	...	560.0	65.0	33.0	28.0
(a) Per cent Organic matter	...	6.7	69.2	60.6	60.7
(b) Per cent Inorganic matter	...	93.3	30.8	39.4	39.3
II. Ammoniacal Nitrogen	...	6.56	2.80	1.36	1.68
III. Albuminoid Nitrogen	...	4.80	2.80	1.32	1.52
IV. Oxygen absorbed 3 minutes at 80°F	...	5.258	4.948	3.402	2.371
V. Oxygen absorbed 4 hours at 80°F	...	10.722	11.546	6.494	6.598
VI. Alkalinity (Methyl orange)	...	40.0	39.0	38.0	33.0

APPENDIX A.—(Contd.)**Madras Sewage Analysis.**

Place :—From the well in Napier Park Sewage Pumping Station.

Date of Collection :— 5-10-1933 (Thursday).

Date of Analysis :— 6-10-1933 (Friday).

Results expressed in parts per 100,000.

		8 A. M.	12 A. M.	4 P. M.	8 P. M.
I. Suspended Solids (by centrifuge)	...	60.0	55.0	63.0	43.0
(a) Per cent Organic matter	...	56.7	67.9	63.5	60.5
(b) Per cent Inorganic matter	...	43.3	32.1	36.5	39.5
II. Ammoniacal Nitrogen	...	5.3	4.6	3.0	2.4
III. Albuminoid Nitrogen	...	1.2	3.0	0.9	1.2
IV. Oxygen absorbed in 3 minutes at 80° F	...	5.67	6.43	5.86	8.60
V. Oxygen absorbed in 4 hours at 80° F	...	10.95	11.72	11.59	14.84
VI. Alkalinity	...	...	...	...	...

APPENDIX A.—(Contd.)**Madras Sewage Analysis.**

Place :—From the well in Napier Park Sewage Pumping Station.

Date of Collection :— 24-11-33 (Friday).

Date of Analysis :— 25-11-33 (Saturday).

Results expressed in parts per 100,000.

		8 A. M.	12 A. M.	4 P. M.	8 P. M.
I. Suspended Solids (by centrifuge)	...	49.0	96.0	36.00	85.00
(a) Per cent Organic matter	...	67.35	79.16	63.89	82.35
(b) Per cent Inorganic matter	...	32.65	20.84	36.11	17.65
II. Ammoniacal Nitrogen	...	5.65	3.90	0.79	2.7
III. Albuminoid Nitrogen	...	0.9	5.1	0.8	3.6
IV. Oxygen absorbed in 3 minutes at 80° F	...	4.89	5.59	2.15	7.01
V. Oxygen absorbed in 4 hours at 80° F	...	7.95	16.93	7.18	17.71
VI. Alkalinity	...	...	...	...	...

APPENDIX A.—(Contd.)**Madras Sewage Analysis.**

Place :—From the well in Napier Park Sewage Pumping Station.

Date of Collection :— 25-11-1933 (Saturday).

Date of Analysis :— 26-11-1933 (Sunday).

Results expressed in parts per 100,000.

		8 A. M.	12 A. M.	4 P. M.	8 P. M.
I. Suspended Solids (by centrifuge)	...	63.00	53.00	...	...
(a) Per cent Organic matter	...	63.5	64.15	...	...
(b) Per cent Inorganic matter	...	36.5	35.85	...	...
II. Ammoniacal Nitrogen	...	1.45	1.30	1.90	1.00
III. Albuminoid Nitrogen	...	1.20	0.90	0.90	0.40
IV. Oxygen absorbed in 3 minutes at 80°F ..	...	3.30	3.44	2.20	1.93
V. Oxygen absorbed in 4 hours at 80°F ...	...	7.59	8.00	5.70	5.12
VI. Alkalinity (Methyl Orange)	..	...	...	...	...

APPENDIX A.—(Contd.)**Madras Sewage Analysis.**

Place :—From the well in Napier Park Sewage Pumping Station.

Date of Collection :— 26-11-1933 (Sunday).

Date of Analysis :— 27-11-1933 (Monday).

Results expressed in parts per 100,000.

		8 A. M.	12 A. M.	4 P. M.	8 P. M.
I. Suspended Solids (by centrifuge)	...	...	...	...	...
II. Ammoniacal Nitrogen	...	2.8	0.9	0.9	2.2
III. Albuminoid Nitrogen	...	3.4	1.4	0.9	0.8
IV. Oxygen absorbed in 3 minutes at 80°F...	...	10.78	4.31	2.41	2.00
V. Oxygen absorbed in 4 hours at 80°F. ...	...	27.22	12.73	6.37	4.95
VI. Alkalinity (Methyl Orange)	...	43.0	33.0	32.0	29.0

APPENDIX A—(Contd.)

Investigation of soil conditions in Korukupet Rubbish Depot, Corporation of Madras.
Date of Examination—25-2-1933.

Source. (Refer to the sketch map for detailed information).	Character of the soil below surface.			pH. of soil determined by using B. D. H. soil testing outfit and Indicator solution.			Remarks.
	$\frac{1}{2}$ ft.	1 ft.	2 ft.	$\frac{1}{2}$ ft.	1 ft.	2 ft.	
A ...	Plenty of debris black soil moist.	Debris less black soil.	Debris still less black soil.	Blue Colour.	Blue Colour.	Blue Colour.	Not much vegetation.
B ...	Debris little brownish soil.	Debris less brownish soil.	Debris less brownish soil.	Blue Colour.	Blue Colour.	Blue Colour.	Shrubs growing in plenty.
C ...	...	...	Debris little soil black.	...	...	Blue Colour.	Soil from this place is being removed by a contractor—forms a little mound.
D ...	Debris in plenty black soil.	Debris less black soil.	Debris less soil black.	Blue Colour.	Blue Colour.	Blue Colour.	No vegetation.
E ...	Big solid particles in plenty soil brownish.	Debris less black soil.	Debris less black soil.	Blue Colour.	Blue Colour.	Blue Colour.	No vegetation.
F ...	Debris little.	...	...	Blue Colour.	...	...	Shrubs growing in plenty.
G ...	Debris little.	...	...	Blue Colour.	...	...	Shrubs growing in plenty.

A blue colour indicates an Alkaline soil and implies the probability of a reserve of lime in the soil.

APPENDIX B.

Analysis of a Sample of Water taken from the Buckingham Canal, north of Korukupet (about 200 yards from the Bridge, Collected on 30-8-1933)

Results expressed in parts per 100,000.

1. Colour and Transparency	...	...	...	Greenish and opaque.
2. Smell	...	...	...	Nil.
3. Reaction	...	...	...	Alkaline.
4. Total Solids	...	...	...	2434.0
5. Suspended Solids	...	...	...	98.0
6. Solids in Solution	...	...	...	2336.0
7. Alkalinity (Methyl Orange)	...	...	...	25.0
8. Chlorine	...	...	...	1140.0
9. Ammoniacal Nitrogen	...	...	...	0.196
10. Albuminoid Nitrogen	...	...	...	0.224
11. Oxygen absorbed—4 hours (Tidy's)	...	...	...	0.896
12. Nitrite	...	...	...	Nil.
13. Nitrate	...	...	...	Trace.
14. Dissolved Oxygen in c.c. per litre	...	...	...	1.82
15. Temperature of surface Water	...	...	...	30.5 C

APPENDIX B.

Results of Analysis of Samples collected from the River Cooum during the year 1933.

Date.	Description of Sample.	Temperature of Surface Water.	Dissolved Oxygen in ccs per litre.	Three minutes' test for Oxygen absorbed Results expressed in parts per 100,000.		Chlorine in parts per 100,000.	Percentage of ignitable matter in bottom mud.
				Before incubation.	After incubation at 37°C for four days.		
18-1-33	Taken near Anderson Bridge, about 100 ft. from the central column ...	...	...	0.086	0.058	28.0	2.87
"	Taken near Commander-in-Chief's Bridge on the eastern side on the Connemara Hotel side	...	...	0.134	0.067	33.0	5.22
"	Taken opposite the back yard of 27, Perumal Mudali Street, Munnar-swami Koil, Mount Road ...	...	...	0.246	0.067	38.0	4.59
"	Taken near the junction of the river and the storm water over-flow in Napier Park, West of Wellington Bridge	...	...	0.200	0.086	58.0	33.80
"	Taken in front of Military Secretary's Bungalow opposite to M. W. L. Mark on the other bank of the river	...	...	0.200	0.134	60.0	3.53
"	Taken near the lock before entrance into Buckingham Canal ...	...	...	0.277	0.260	72.0	4.50
26-1-33	Taken near Munro's Bridge ...	...	2.75	...	...	33.0	...
"	Taken opposite Tuberculosis Hospital in Spur Tank Road between Munro's Bridge and Anderson Bridge	...	...	...	...	33.0	...
"	Taken near Anderson Bridge ...	...	...	...	...	38.0	...
"	Taken near Commander-in-Chief's Bridge on the Connemara Hotel side	...	2.2	...	...	16.0	...
"	Taken midway between Commander-in-Chief's Bridge and Harris Bridge	...	2.2	...	...	35.0	...
"	Taken near Harris Bridge ...	...	...	...	...	36.0	...
"	Taken near St. Andrew's Bridge ...	...	...	...	...	45.0	...
"	Taken midway between St. Andrew's Bridge and Law's Bridge	...	...	...	...	52.0	...
"	Taken near Law's Bridge ...	...	...	...	...	57.0	...
"	Taken near Wellington Bridge at the junction of the river with Napier Park sewage outflow	...	1.43	...	...	62.0	...
"	Taken opposite Military Secretary's Bungalow ...	...	1.76	...	...	65.0	...
"	Taken near Chepauk Lock ...	...	1.54	...	...	89.0	...
15-11-33	Taken near Anderson Bridge about 100 ft. from the central column on the eastern side	...	...	...	...	5.0	2.11
"	Taken near Commander-in-Chief's Bridge on the Connemara Hotel side	...	...	...	...	23.0	4.73

APPENDIX B—contd.

Results of Analysis of Samples collected from the river Cooum during the year 1933—*Contd.*

Date.	Description of Sample.	Temperature of Surface Water.	Dissolved Oxygen in cos per litre.	Three minutes' test for Oxygen absorbed. Results expressed in parts per 100,000.		Chlorine in parts per 100,000	Percentage of ignitable matter in bottom mud.
				Before incubation.	After incubation at 37°C for four days.		
15-11-33	Taken near Mannarswami Koil side Mount Road ...	...	...	...	...	340	...
"	Taken near Wellington Bridge at the junction of the river with the Napier Park Sewage outflow ...	...	...	...	...	640	9.45
"	Taken in front of Military Secretary's Bungalow opposite M.W.L. Mark on the other side of the river ...	...	...	...	...	720	...
"	Taken near Chepauk Lock ...	...	...	...	...	830	...
30-11-33	Taken 100 yards east of Munro's Bridge ...	28.0°C	4.0	...	...	60	...
"	Taken opposite Tuberculosis Hospital midway between Munro's Bridge and Anderson Bridge ...	28.0°C	3.86	...	...	270	...
"	Taken near Anderson Bridge ...	28.0°C	3.50	...	...	500	3.46
"	Taken near Commander-in-Chief's Bridge on the Connemara Hotel side ...	28.0°C	2.49	...	...	630	8.96
"	Taken 100 yards south of Harris Bridge ...	28.20°C	4.84	...	...	640	4.11
"	Taken near Mannarswami Koil side						
"	Taken 50 yards south of Andrew's Bridge ...	28.0°C	2.75	...	...	670	...
"	Taken midway between St. Andrew's Bridge and Law's Bridge ...	28.0°C	2.22	...	...	680	...
"	Taken 100 yards east of Law's Bridge where the river bifurcates ...	28.0°C	2.78	...	...	720	...
"	Taken near Wellington Bridge at the junction of the river with Napier Park Sewage outflow ...	28.0°C	3.01	...	...	720	...
"	Taken in front of Military Secretary's Bungalow opposite to M. W. L. Mark on the other bank of the river ...	28.0°C	1.90	...	...	830	...
"	Taken near Chepauk Lock ...	28.20°C	2.03	...	...	900	...

APPENDIX C.

Experiments carried out with Alumino-ferric and Sulphuric Acid for improving the Sanitary quality of Krishnappa Naick Tank water.

1. Description of the Tank—

(a) Length :—	...	285 feet.
(b) Breadth	...	230 "
(c) Depth { Maximum	...	12 "
{ Minimum	...	8 "
(d) Capacity of the tank	...	598,000 cubic feet.
(e) Volume of water in the Tank	...	322,000 "

2. Physical condition—

(a) Colour and Transparency	...	Greenish & Opaque.
(b) Smell	...	Grassy odour.

3. Chemical condition—

Results of analysis of a sample collected on 9-11-33.

	In parts per 100,000
(a) Ammoniacal Nitrogen	... 0.004 " "
(b) Albuminoid Nitrogen	... 0.123 " "
(c) Absorbed oxygen { (1) Unfiltered water	... 3.616 " "
{ (2) Filtered water	... 1.260 " "
(d) Total Hardness	... 16 parts per 100,000
(e) Permanent Hardness	... 3 " "
(f) Temporary Hardness	... 13 " "
(g) Chlorine	... 53.0 " "
(h) Phosphate	... Nil.
(i) Nitric Nitrogen	... Nil.
(j) Nitrous Nitrogen	... Nil.
(k) Carbonic Acid (Calculated as CO ₂)	... 3.6 mg. per 100 c.c.
(l) Bicarbonic Acid(" H CO ₃)	... 32.13mg. per "
(m) Hydrogenion Concentration (pH)	... 8.8
(n) Silica	... Present.

4. Biological condition—

Dominant algae:—*Clithrocystis aeruginosa* and *Spirulina*.

5. Experiments with—(a) Copper Sulphate.

(b) Sulphuric Acid.

(c) Alumino ferric.

(d) Alumino ferric and Sulphuric Acid.

6. The effect of addition of Chemicals after 48 hours—

Experiment—(a) Using varying doses of copper Sulphate:—Scum floating—bad smell—no clarity.

Experiment—(b) Using Sulphuric Acid—8 c.c. of the acid added to a gallon of water renders it clear.

Experiment—(c) Using Alumino ferric Solution:—Clear but thin Scum floating—unpleasant odour.

Experiment—(d) Using Alumino ferric and Sulphuric Acid—4 c.c. of Sulphuric Acid and 4 grains of Alumino ferric per gallon renders a gallon of water clear and odourless.

7. Cost of treating the tank with—

(a) Sulphuric Acid

The Volume of water in the tank in gallons ... 2,012,500

The dose of Sulphuric Acid ... 8 c.c. per gallon.

The amount of Sulphuric Acid required ... 64400 lbs.

The cost of the Acid at 0-5-0 per lb. ... Rs. 24,150.

(b) Alum

Dose of Alum ... 4 grains per gallon.

Alum required to treat 2,012,500 gallons ... 1150 lbs.

1 cwt. of Alum costs ... Rs. 10.

The cost of 10 cwts & 30 lbs. ... Rs. 103.

8. The attempt to improve the Sanitary quality of the tank water had to be abandoned as it involved a lot of money.

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**Annual Report on the working of the Child Welfare Scheme,
Corporation of Madras for the year 1933.**

The most outstanding feature in the record of work of the Child Welfare Scheme, Corporation of Madras during the year 1933 is the Ante Natal work. The increasing number of expectant mothers who attended the centres shows the appreciation of the Ante Natal work done by the Child Welfare Scheme.

As already pointed out in my report for the year 1932, the Ad Hoc. Committee's recommendations mainly those relating to Ante Natal work, Maternity Service and Booked cases have been carried out on the lines recommended by the Committee. It has not however been possible to give effect to those recommendations which affected the finances.

Personnel.

It is regretted that Dr. D. Devanesen, permanent Lady Superintendent who was on long medical leave, expired on 15-10-1933 and Dr. H. V. Kamalammal, permanent Lady Doctor, Triplicane, Centre, continued to act in this vacancy during the year under review. Dr. C. M. Leelavathy who was acting in the place of Lady Doctor, Triplicane Centre, took up a post under Government and Dr. L. D'Cunha was appointed in her place from 9-12-1933. Dr. R. H. Sbarada was appointed as acting Relieving Lady Doctor from 19-7-1933.

Staff.

There were 13 Lady Doctors, 82 Midwives and 31 Health Visitors attached to the Scheme.

Work of the Staff.

During the year under report 14,948 cases of labour (i.e.,) 52.4 per cent of the total births in the City came under the care of the Child Welfare Scheme. Of these 12,133 cases were actually conducted by the Midwives of the Scheme, 1,650 cases were taken over by the Child Welfare Staff after barber women had conducted the labour and 1,165 cases were sent to various Hospitals. Compared with 1932 there is a slight fall of 160 cases. *Vide* Statement No. 1. This is due to the fact that the Child Welfare Staff had to carry out the following recommendation of the Ad. Hoc. Committee viz.,

"There should be no Maternity Service by the Corporation for those whose income is above Rs. 50."

The difference is due chiefly to barber women cases, as the middle class people whose income is above Rs. 50 engaged barber women after the introduction of this rule.

The total number of visits paid by the Lady Doctors was 15,554. They treated also 5,355 morbid cases. The total number of women and children treated at the out-patient clinic was 2,53,942. The average daily attendance was 695.7. The Lady Doctors treated expectant and nursing mothers and children not more than 5 years old. The total number of visits paid by Health Visitors was 1,65,341. The total number of visits paid by midwives was 1,80,200. *Vide* Statements II, IV & VII.

Ante Natal Work.

The total number of prenaternity cases registered by Health Visitors was 13,584. Of these as many as 10,486 were expectant mothers and they attended the Centres for Ante Natal advice and treatment. The large attendance of expectant mothers is an index to the growing appreciation of the work of the Scheme. *Vide* Statement III.

Maternity Service.

Some difficulty is experienced in giving effect to the rule that the Scheme should not render service to people whose income is more than Rs. 50. Some persons note their income to be less than Rs. 50 and avail themselves of the Corporation Maternity Service free of cost. To meet such cases the following "Maternity Service Cards" are printed on :—

"In case it is brought to the notice of the Corporation that a person whose income is more than Rs. 50 is found to have utilized the Corporation Maternity Service, the Corporation should recover from such a person a sum not less than Rs. 50."

It frequently happens that when this card is offered for signature, the person concerned quietly withdraws.

Booked Cases.

Out of the total of 14,948 cases, 10,486 i.e., 70.1% are booked cases. The Child Welfare Scheme has still to keep the public informed that Corporation Maternity Service will not be available to such pregnant women as have not taken care to register themselves in time, i.e., at least one month before the date of confinement.

Abortion.

The total number of abortions treated during the year was 83. In accordance with the Ad Hoc. Committee's recommendation the Child Welfare staff has not conducted any case of abortion that took place within 20 weeks of pregnancy. The rest of the cases were advised to adopt the best possible course. *Vide* Statement VI.

Maternal Mortality.

Out of a total of 14,948 cases which came under the observation of the Scheme, there were 46 cases of maternal mortality of which 30 occurred among complicated cases sent to hospitals, 6 handed over to private doctors, 4 under Vydians and 1 under barber women. Only 5 cases of death took place among those treated by the Scheme. This gives a percentage of .31 which is the lowest on record (*Vide* Statement V a, b and c).

Infantile Mortality.

15,108 babies which came under the observation of the Child Welfare Scheme in 1932, were actually born during the said year. Of these 564 were still births and 14,544 were live births which were kept under the observation of the Scheme, during their first year of life i.e., during 1933. The mortality among the live births was 2,156. This gives an infantile mortality rate of 142.7 per mille as against 131.3 of 1932. This rise must be attributed to the same causes as those that contributed to the rise in 1933 of the infantile mortality for the whole City to 264.3 from 236.5 of the previous year. *Vide* Statements VIII and IX.

Ambulance Car.

The total number of calls answered by the car was 566.

Milk Supply.

454 babies received free milk supply during the year as against 626 of the previous year. The fall in number is due to compulsory centre feeding which was carried on satisfactorily at all the Centres. The cows are brought to the centres both morning and evening and milk is drawn in the presence of the Resident Health Visitor. The empty vessels are shown to the Resident Health Visitor before milking, and the milk is measured after froth subsides. The milk is accepted only when the specific gravity is 1.028. After pasteurization the milk is distributed to infants. The milk is diluted according to the age of each baby. Two centre feeds are given, one in the morning and another in the evening and the rest of the milk is allowed to be taken home. The babies are weighed every fortnight. *Vide* Statement X.

Bath.

During the year 91,685 babies were given warm baths. Bath is restricted to children of pre-school age i.e., up to 5 years. *Vide* Statement XI.

Health Propaganda.

580 lectures were delivered at the various Child Welfare Centres. Of these 238 lectures were delivered with the aid of the magic lantern and 49 lectures with cinema. 293 were outdoor lectures. The total attendance was 32,011. *Vide* Statement XII.

Conclusion.

The workers are grateful for all help and encouragement received from the public. The record of work set out above affords ground for the belief that the work of the Scheme is receiving a steadily increasing measure of public appreciation.

This Scheme itself has to keep on improving and it can be done only when the handicaps to the successful working of the Scheme disappear with increasing confidence in its work.

H. V. KAMALAMMAL,
Ag. Lady Superintendent,
Child Welfare Scheme.

Dated, 16—6—34.

STATEMENT I.

Statement showing the cases of labour which came under the observation of the staff of the Child Welfare Scheme from January to December 1933 with comparative statements for the years 1918 ; 1928 to 1932.

Period.	Centres.	How conducted.			Total cases.	Caste.		Remarks.
		By Nurses of the C. W. S.	Taken over after Barber Women conducted labour.	Taken to Hospitals.		Maho-madan.	Non-Maho-madan.	
From 1st January to 31st December 1933	...	...	...	...	...	...	...	...
	Triplicane	1,602	101	22	1,725	740	985	Divisions, 24th, 25th & 27th.
	Washermanpet	1,074	249	136	1,459	249	1,210	3rd & 4th.
	Purasawalkam	1,043	67	70	1,180	54	1,126	18th & 21st.
	George Town	1,642	193	125	1,960	105	1,855	8th, 10th, 12th, 13th, 14th & 15th.
	Nungambakkam.	304	178	90	572	48	524	22nd.
	Mirsaibpet	1,143	122	87	1,352	231	1,121	26th, 28th & 30th.
	Muthialpet	1,049	83	131	1,258	320	948	5th, 6th, 7th, & 9th.
	Royapuram	891	91	148	1,130	99	1,031	1st & 2nd.
	Perambur	982	130	125	1,237	292	945	16th.
	Egmore	823	180	81	1,084	136	948	20th & 23rd.
	Royapettah	560	134	58	752	65	687	29th
	Choolai	1,020	117	92	1,229	56	1,173	17th & 19th.
	Total for 1933	12,133	1,650	1,165	14,948	2,395	12,553	
	1932	11,777	1,978	1,358	15,108	2,802	12,306	
	1931	10,449	1,821	1,244	13,514	2,077	11,437	
	1930	9,733	1,738	1,129	12,600	2,027	10,573	
	1929	8,585	1,796	1,027	11,416	1,862	9,546	
	1928	8,216	1,541	1,136	10,893	1,967	8,926	
	1918	550	77	54	681	...	...

STATEMENT II.

Table showing the total attendance of Children and Mothers at the Child Welfare Centres during 1933.

From 1st January to 31st December 1933.	Age.			Nature of disease.								Total New Attendance.	Nature of disease.						Total attendance for the year.	Pregnant women treated at the Centres.	Average Daily Attendance.
	Under 1 year.	1 to 5 years.	5 to 10 years.	Women.	Respiratory.	Alimentary.	Skin affection.	Influenza.	Ear and Eye diseases.	Malaria.	Syphilis.		Anæmia.	Other causes.							
Triplicane	4,110	2,671	...	4,294	11,075	3,083	2,327	876	878	653	453	1,376	1,429	30,961	1,212	85.					
Washermanpet	2,305	1,592	...	3,794	7,691	1,236	1,745	520	423	358	358	...	3,040	16,582	689	45.4					
Purasawalkam	1,901	1,225	1,132	3,469	7,727	1,460	1,901	459	561	258	306	415	2,337	23,995	1,114	65.7					
George Town	3,454	2,316	269	6,873	12,912	1,316	1,120	1,33	282	1,196	1,081	890	5,980	35,529	1,529	100.07					
Nungambakkam	1,664	2,027	338	1,636	5,665	838	459	495	935	202	227	...	2,205	13,350	361	36.6					
Mirsaibpet	2,909	2,091	...	4,677	9,677	1,485	2,628	615	445	191	86	286	3,941	26,507	901	72.6					
Muthialpet	2,595	1,374	153	3,476	7,598	627	2,225	404	508	121	310	114	3,389	26,688	1,029	73.11					
Royapuram	2,176	1,693	209	3,286	7,364	1,536	2,358	479	111	162	490	131	2,095	13,409	843	36.8					
Perambur	2,627	2,068	...	3,243	7,938	350	3,026	652	351	691	219	139	2,497	17,979	801	49.25					
Egmore	1,682	1,520	...	2,552	5,754	1,064	1,167	441	318	376	349	799	1,238	13,822	613	38.02					
Royapettah	1,441	1,519	152	1,930	5,042	1,337	1,192	747	257	261	104	173	971	14,765	394	40.4					
Choolai	2,081	1,018	...	3,837	6,936	1,664	1,891	486	127	161	15	15	2,577	19,295	1,040	50.2					
Total for	1932 28,945	21,114	2,253	42,067	95,379	15,996	22,040	7,207	5,199	4,640	3,998	4,642	31,599	2,53,942	10,526	695.73					
"	1932 29,884	16,529	13,109	45,616	105,138	17,455	22,394	8,616	5,907	5,878	5,754	6,083	32,819	2,32,583	11,510	687.4					
"	1931 27,373	18,510	15,271	43,395	104,550	15,338	21,958	9,014	5,373	6,006	6,316	6,536	33,617	2,37,285	9,251	684.3					
"	1930 23,681	15,000	11,711	38,644	88,436	13,752	19,524	7,672	5,191	5,406	5,441	4,653	26,354	2,02,441	8,463	599.53					
"	1929 19,514	13,254	11,062	37,720	81,550	1,838	18,570	6,196	3,634	3,980	6,026	4,253	26,801	1,88,329	7,104	520.19					
"	1928 15,195	10,167	9,265	33,745	63,918	9,864	15,633	4,200	1,808	2,813	4,845	3,513	18,273	1,61,801	6,637	442.1					

STATE

Pre-maternity cases registered and diseases and

Serial No	Centres.	Constipation.	Anaemia.	Malaria.	Albuminuria.	Worms.	Bronchitis.	Dysentery.	Influenza.	Diarrhoea.	Retention of Urine.	Torpid Liver.	Oedema & Swelling.	Fever.	Skin affections.	Syphilis.	T. P.	V. D. H.	Rheumatism.	Otorrhoea.	Jaundice.	A. P. H.	Pneumonia.	General Anasarca.	Asthma.
1	Triplicane ...	447	322	4	81	2	47	20	7	14	72	...	20	20	12	...	...	3	...	1	...	...	...	4	2
2	Washermanpet.	248	94	9	42	...	46	13	3	11	26	...	12	17	5	...	...	33	4	9	2	...	...	2	4
3	Purasawalkam.	296	104	35	105	9	66	54	54	36	17	...	24	22	4	1	7	5	15	1	...	2	3	...	7
4	George Town...	392	247	136	114	28	36	65	20	28	...	...	51	54	9	10	7	6	10	6	...	...	...	...	19
5	Nungambakkam	165	33	14	38	11	24	4	21	2	11	...	2	3	...	1	...	...	1	...	4	...	...	...	1
6	Mirsaiibpet ...	507	30	12	...	...	22	14	6	8	...	...	3	18	2	1	...	...	2	1	...	12	...	8	1
7	Muthialpet ...	166	80	44	59	169	87	6	9	4	...	3	19	...	15	3	2	6	1	1	...	2	...	12	3
8	Royapuram ...	550	78	17	65	...	52	11	7	12	1	...	2	1	2	...	3	...	...	2	...	...	...	...	...
9	Perambur ...	448	13	4	64	4	36	26	14	7	1	...	8	2	9	2	...	3	2	5	...	...	...	3	3
10	Egmore ...	218	88	...	84	5	61	22	6	28	...	...	9	16	2	...	...	3	9	...	...	...	...	...	...
11	Royapettah ...	162	29	1	16	1	40	1	3	7	...	...	3	11	4	...	...	...	...	...	...	...	...	...	2
12	Choolai ...	282	9	16	37	...	77	10	15	21	...	...	...	139	...	...	...	2	9	14	...	...	...	...	1
	Total ...	3,881	1,127	292	705	229	574	246	751	178	128	3	156	303	64	19	20	61	53	40	6	16	3	29	43

Total for 1933--

1932--

1931--

1930--

1929--

STATE

Maternal Morbidity

Serial No.	Centres.	Anaemia.	Albuminuria.	Malaria.	V. D. H.	Bronchitis.	Dysentery.	Influenza.	Typhoid.	Retained Membrane.	Adherent Placenta.	Retained Placenta.	Eclampsia.	Pneumonia.	T. P.	Ulcerated Vagina.	Retention of Urine.	Syphilis.	Asthma.	Diarrhoea.	Jaundice.	Indigestion.	Gastritis.
1	Triplicane ...	249	47	2	3	34	16	11	...	5	4	...	3	...	...	25	23	...	1	16	...	...	13
2	Washermanpet	174	9	18	21	39	9	13	1	3	2	...	2	...	2	5	7	2	4	10	21	12	4
3	Purasawalkam	55	37	23	13	35	39	42	...	12	3	3	9	12	15	35	8	2	22	2	46	11	...
4	George Town	123	64	41	10	27	28	40	...	2	...	14	...	4	...	...	5	3	52	...	...	...	...
5	Nungambakkam	20	26	16	...	18	8	19	...	1	...	...	...	...	...	...	...	...	5	...	4	...	...
6	Mirsaiibpet	26	...	...	...	3	6	...	...	3	...	...	1	1	4	...	...	...	4	...	1	...	...
7	Muthialpet	42	79	21	...	6	4	3	...	...	...	3	...	...	...	...	2	...	9	1	...	...	...
8	Royapuram	27	6	4	...	11	5	...	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...
9	Perambur	10	19	10	3	23	11	9	...	3	4	...	4	5	5	11	2	3	6	13	2	4	2
10	Egmore	247	51	17	1	57	16	11	...	3	1	1	2	...	1	3	3	...	2	17	1	4	6
11	Royapettah	38	10	11	3	31	8	15	...	2	1	...	...	...	1	1	...	1	2	6	...	9	...
12	Choolai	5	...	103	4	10	9	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
	Total ...	1016	348	273	58	295	159	163	1	31	17	4	32	15	29	60	70	22	22	156	27	82	36

MENT III.

ailments of Pregnancy treated at the Centres in 1933.

Breast Abscess.	Gastritis.	Conjunctivitis.	Flatulence.	Hysteria.	Enteritis.	Strangury Leucorrhoea.	Morning Sickness.	Gonorrhoea.	Stomatitis.	Ear and Eye diseases.	Threatened Abortion.	Bleeding.	Eclampsia.	Dyspepsia.	Scanty Urine.	Cough.	Piles.	Neuritis.	Indigestion.	Debility.	Mastitis.	Tuberculosis.	Enlarged spleen.	Other diseases.	Total.	Total fo Pre-maternity cases registered.
6	4	...	...	...	...	...	15	...	79	3	...	...	...	9	5	...	...	...	12	...	...	...	1	...	1,212	1,377
6	14	...	9	2	...	...	15	8	41	...	1	7	...	1	...	...	2	2	...	...	...	...	...	...	689	689
1	3	6	25	4	3	...	39	...	112	...	2	...	...	20	23	3	...	...	...	...	...	3	...	...	1,114	1,229
6	10	...	...	...	...	...	57	7	198	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,529	1,997
...	...	...	...	...	...	...	...	...	16	...	...	...	...	...	10	...	...	...	...	...	...	...	...	...	361	640
...	11	...	...	...	...	5	3	...	34	...	1	...	...	...	73	...	...	3	12	...	...	...	...	...	901	1,094
...	2	...	25	...	...	9	3	1	103	...	3	...	...	...	1	34	...	...	3	72	1	...	4	56	989	1,294
...	5	...	1	...	...	...	4	...	2	1	9	1	...	...	15	...	...	1	...	...	...	...	...	...	843	1,154
5	...	1	3	...	...	...	2	8	23	...	3	...	2	6	28	...	...	...	...	...	...	...	...	5	801	869
...	...	...	...	...	...	...	...	...	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	613	675
1	...	...	...	1	...	...	2	...	47	...	...	...	...	13	47	2	...	...	...	...	...	...	1	...	394	725
4	...	9	...	...	16	37	3	...	...	...	17	13	1	78	101	...	...	...	...	...	...	12	87	1,040	1,741	
29	49	16	63	6	20	51	178	24	705	4	36	21	3	129	396	5	6	6	137	72	1	12	8	158	10,486	13,584

13,584.

13,476.

13,315.

11,292.

10,535.

MENT IV.

(Puerperal) 1933.

Constipation.	Worms.	Mastitis & Breast Abscess.	Sapraemia.	A. P. H.	P. P. H.	Skin disease.	Stomatitis.	Sepsis.	Neuritis and Sciatica.	Septicaemia.	Ulcerated Vulva.	Fever and Hyperpyrexia.	After pains.	Piles.	Rheumatism.	G. Conjunctivitis.	Other diseases.	L. P.	Gen. Anasarca.	Hysteria.	Debility.	Total.
145	...	22	...	2	2	30	45	...	...	...	25	32	31	...	...	...	61	...	...	...	...	854
110	3	7	...	...	9	9	38	...	12	...	...	48	39	6	7	2	7	15	4	1	47	723
73	19	13	...	4	8	35	53	3	...	...	2	80	...	...	...	...	2	...	...	...	...	717
191	...	3	...	...	15	6	41	...	...	...	...	54	69	7	...	...	18	...	...	...	...	817
2	...	...	...	...	1	...	...	...	...	...	...	...	7	...	...	...	4	...	...	...	...	131
3	...	3	...	...	1	...	3	...	1	...	2	98	4	...	...	...	22	23	1	...	...	210
5	...	23	1	4	1	...	57	...	...	...	...	...	36	1	...	...	32	...	...	1	55	386
11	...	...	...	...	1	1	...	...	...	...	...	...	...	2	...	...	8	...	...	...	...	82
61	4	8	...	5	11	15	16	3	...	...	5	12	11	...	9	3	14	...	8	2	5	345
104	9	...	...	...	...	...	...	...	...	...	...	...	183	...	...	...	...	...	...	...	...	740
20	...	4	...	1	2	5	24	...	2	...	2	4	1	...	...	...	3	2	...	...	5	214
...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	136
725	35	84	1	17	51	101	277	6	15	2	36	328	383	16	18	5	171	40	13	4	113	5,355

STATEMENT V.

A

Maternal mortality (Puerperal) among cases treated by Child Welfare Scheme for 1933.

Centres,	V. D. H.	Eclampsia.	Shock.	Tetanus.	Small-Pox.	Total.
Triplicane
Washermanpet
Purasawalkam
George Town
Nungambakkam
Mirsaibpet	...	1	...	1	...	3
Muthialpet	1	...	...	1
Royapuram
Perambur
Egmore	1	1
Royapettah
Choolai
Total	...	1	1	1	1	5

B

Deaths among cases brought to the notice of the Child Welfare Scheme in 1933 but not under our treatment.

	Triplicane.	Washermanpet.	Purasawalkam.	George Town.	Nungambakkam.	Mirsaibpet.	Muthialpet.	Royapuram.	Perambur.	Egmore.	Royapettah.	Choolai	Total.
1. In Hospital	1	4	1	6	5	3	2	1	3	4	30
2. Under private Doctors	3	...	...	1	1	...	1	...	...	6
3. Under Vydians' treatment	2	...	...	...	...	...	2	...	...	4
4. Under Barber Women	1	...	...	...	...	1
Total	1	9	1	6	6	5	2	4	3	4	41

STATEMENT V—*contd.*

C

Showing the causes of death among cases brought to the notice of Child Welfare Scheme but not under our treatment in 1933.

Centres.	Eclampsia.	Adherent Placenta.	A. P. H.	V. D. H.	Anaemia.	Tub. Enteritis.	Septicaemia.	Pneumonia.	Gen. Anasarca.	Diarrhoea.	Fever.	Causes unknown.	Typhoid.	Sepsis.	Small-pox.	Influenza.	Other diseases.	Total.
Triplicane
Washermanpet
Purasawalkam	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
George Town	...	1	1	...	...	...	...	2	...	1	...	...	2	...	2	...	9	...
Nungambakkam
Mirsaibpet	...	1	...	...	...	...	2	...	1	...	...	...	...	...	...	2	...	6
Muthialpet	...	2	...	...	...	1	...	...	...	...	1	...	...	1	1	...	6	...
Royapuram	...	3	1	...	...	...	...	...	...	...	...	1	...	...	...	...	5	...
Perambur	1	...	...	...	1	...	...	...	...	...	...	...	2	...
Egmore	1	...	1	1	...	...	...	...	...	...	...	...	1	...	4	...
Royapettah	1	...	...	...	...	2	...	...	...	...	...	...	...	...	3	...
Choolai	...	1	1	...	1	...	...	1	...	...	...	...	...	...	...	...	4	...
Total	...	9	4	1	1	2	2	2	5	2	1	1	1	2	1	4	2	141

A total of 46 deaths occurred among the 14,948 labour cases which came under the observation of the Child Welfare Scheme. Maternal Mortality rate for all deaths among cases brought to the notice of the Scheme is 31 per cent.

Maternal Mortality rates for the C. W. S. for:—

1933—	31 per cent.
1932—	41 per cent.
1931—	61 per cent.
1930—	49 per cent.
1929—	49 per cent.

STATEMENT VI.

Showing the number of abortion cases which came under the observation of the C. W. Scheme staff during the year 1933.

Period.	Centres	How conducted.			Total.
		By Nurses of C.W.S.	Taken over after B.W. conducted labour.	Taken to Hospital.	
From 1st January to 31st December 1933.	Triplicane ...	...	...	...	...
	Washermanpet ...	7	1	1	9
	Purasawalkam ...	4	...	5	9
	George Town ...	6	...	2	8
	Nungambakkam ...	...	...	2	2
	Mirsaibpet ...	4	...	5	9
	Muthialpet ...	10	...	9	19
	Royapuram ...	1	...	3	4
	Perambur ...	3	...	5	8
	Egmore ...	2	...	7	9
	Royapettah ...	...	...	2	2
	Choolai ...	2	...	2	4
	Total ...	39	1	43	83

STATEMENT VII.

Number of visits paid by the staff of the C. W. Scheme during the year 1933.

Centres.	Visits paid by			Total.
	Midwives.	Health Visitors.	Lady Doctors.	
Triplicane ...	19,445	18,334	1,678	39,457
Washermanpet ...	15,552	14,785	1,173	31,510
Purasawalkam ...	15,578	15,068	888	31,529
George Town ...	26,162	19,693	1,280	38,135
Nungambakkam ...	9,021	9,552	1,305	19,878
Mirsaibpet ...	15,681	20,860	1,484	38,025
Muthialpet ...	16,270	17,200	1,410	34,880
Royapuram ...	11,865	14,326	1,378	27,569
Perambur ...	14,206	7,554	1,294	23,054
Egmore ...	11,756	8,434	1,070	21,260
Royapettah ...	10,215	9,657	1,277	21,149
Choolai ...	14,449	18,883	1,307	34,639
Total ...	1,80,200	65,341	15,544	2,61,085

STATEMENT VIII.

Ages at death of infants born during 1932 and kept under observation during the 1st year of life.

	From 1st January to 31st December 1933.	Total No. of cases visited.	Still born.	Died within			Total deaths excluding Still births.	Left City or otherwise not traceable.	No. of living children traceable when one year old.
				10 Days.	1 to 3 Months.	3 to 6 Months.			
Triplicane	...	1,718	56	54	54	64	279	387	996
Washermanpet	...	1,472	71	54	35	30	210	288	903
Purasawalkam	...	1,179	37	30	43	43	152	184	806
George Town	...	2,609	99	90	68	66	297	135	1,478
Nungambakam	...	617	18	16	14	21	71	57	471
Mirsaibpet	...	1,472	63	39	41	40	195	85	1,129
Muthialpet	...	1,171	53	85	45	49	208	224	686
Royapuram	...	1,297	51	49	26	63	241	259	755
Perambur	...	1,191	42	20	21	25	100	296	753
Egmore	...	989	20	17	21	32	101	154	714
Royapet	...	800	19	17	29	34	113	112	556
Choolai	...	1,193	33	46	34	49	189	115	854
Total	...	15,108	564	467	431	516	2,156	2,287	10,101

City rate.

For infants in care of C. W. Scheme.

Infantile Mortality rate for

per mille.

1933	142.7	264.3
1932	131.3	236.5
1931	134.9	248.3
1930	139.5	243.9
1929	157.2	256.8

STATEMENT IX.

Causes of Death among infants born in 1932 and kept under observation during the 1st year of life.

Centres.	Total No. of cases visited.	Still born.	Died within 10 days.	Pneumonia.	Abscess.	Enteritis.	Small-pox.	Bronchitis.	Malnutrition.	Malaria.	Convulsion.	Whooping cough.	Skin diseases.	Syphilis.	Chicken-pox.	Fever.	Drugged with native medicines.	Dysentery.	Constipation.	Rickets.	Gastritis.	Causes unknown.	Measles.	Total deaths.	Left the City and not traceable.	No. of living children who survived the 1st year of life.
Triplicane	1,718	56	54	9	5	...	13	14	2	1	14	318	...	1	79	...	56	4	1	...	5	...	279	387	996	
Washermanpet	1,472	71	•	2	1	23	6	10	1	...	29	17	1	...	40	3	40	1	...	2	34	...	210	288	903	
Purasawalkam	1,179	37	•	10	3	30	15	...	3	...	27	...	...	...	52	...	11	...	...	...	...	...	152	184	805
George Town	2,009	99	•	5	5	29	9	24	4	14	29	18	14	...	22	23	40	28	...	18	14	...	297	135	1,478	
Nungambakkam	617	18	16	...	...	5	2	13	...	...	2	...	...	...	19	...	12	1	...	1	...	...	71	57	471
Mirsaibpet	1,472	63	•	13	3	22	13	6	...	...	14	2	1	...	49	1	11	2	...	58	...	...	195	85	1,129
Muthialpet	1,171	52	35	6	...	28	14	9	7	...	9	1	...	1	61	...	7	...	...	29	1	...	208	224	686
Royapuram	1,297	51	•	9	5	46	16	14	6	...	10	...	9	...	56	...	3	2	...	65	...	...	241	250	755
Perambur	1,191	42	•	...	3	20	6	12	...	...	8	1	3	...	37	...	5	...	...	5	...	...	100	296	753
Egmore	989	20	17	1	...	20	...	32	...	...	2	...	1	...	23	...	4	1	...	...	...	...	101	154	714
Royapettah	800	19	•	2	1	11	1	21	2	1	5	...	4	1	23	...	31	...	...	9	...	...	113	112	556
Choolai	1,193	35	46	2	1	49	5	3	...	...	11	5	1	...	44	...	7	...	1	...	9	5	189	115	854
Total	15,108	564	168	102	27	283	101	158	25	16	160	47	52	2	2,505	27	27	39	2	2,233	20	2	2,156	2,287	10,101	

* Cases died within 10 days are included in the causes of death.

STATEMENT X.

Showing the number of cases taken on for Milk Supply during the year 1933.

Centres.	No. taken on for milk supply.	Yearly attendance.	Average daily attendance.
Triplicane ...	31	7,623	20.0
Washermanpet ...	36	10,327	28.2
Purasawalkam ...	55	16,038	43.9
George Town ...	38	8,947	24.5
Nungambakkam ...	33	8,573	23.4
Mirsaibpet ...	44	7,681	21.0
Muthialpet ...	45	7,364	20.0
Royapuram ...	42	9,568	26.2
Egmore ...	36	7,972	21.8
Perambur ...	52	14,052	38.4
Royapettah ...	21	4,976	14.0
Choolai ...	21	6,056	17.0
Total ...	454	1,09,177	299.1

STATEMENT XI.

Showing the number of Children who were given free baths during the year 1933.

Centres.	New admissions.	No. of baths given to babies.	Average daily attendance.
Triplicane ...	145	6,843	19.1
Washermanpet ...	29	7,939	21.7
Purasawalkam ...	566	15,556	42.6
George Town ...	180	5,392	14.7
Nungambakkam ...	371	8,714	23.8
Mirsaibpet ...	242	4,246	11.6
Muthialpet ...	58	4,293	11.8
Royapuram ...	334	10,912	30.0
Perambur ...	355	8,947	24.5
Egmore ...	546	6,451	17.7
Royapettah ...	129	6,521	18.0
Choolai ...	121	5,871	16.0
Total ...	3,076	91,685	241.5

Showing the details of Health Propaganda Work done by the C.W. Staff in 1933.

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STATEMENT XIII.
Showing the Births, Infantile Mortality and Infantile Mortality rate during 1933 and Infantile Mortality rate from 1924 to 1932.

Divisions.	No. of Births registered excluding Still-births.	1933		Infantile Mortality rate for									
		Still-births.	Infantile Mortality.	Infantile Mortality rate.	1932	1931	1930	1929	1928	1927	1926	1925	1924
1	939	33	275	292.9	254.8	322.6	247.9	296.9	352.2	253.6	330.3	293.1	191.8
2	1371	90	416	303.4	256.3	232.3	227.1	252.1	278.8	225.2	271.6	277.7	297.6
3	1271	58	397	312.4	258.9	247.7	235.2	302.7	316.5	253.0	353.2	288.1	285.8
4	1108	61	347	313.2	225.1	300.3	283.3	269.7	343.4	251.9	323.3	256.6	236.2
5	345	19	113	327.5	335.5	366.0	317.1	373.0	502.1	332.0	379.9	370.7	381.4
6	491	16	103	209.8	258.1	239.8	239.5	231.2	238.0	332.4	295.3	361.6	390.0
7	525	23	137	261.0	196.4	229.1	212.7	259.0	265.3	239.4	295.3	318.5	306.4
8	175	10	53	302.9	270.2	357.5	241.4	310.3	328.8	289.8	258.6	438.0	437.0
9	828	13	210	253.6	222.4	213.2	250.6	250.0	323.8	266.1	281.8	303.7	312.2
10	796	32	233	292.7	273.7	245.3	248.3	235.5	341.5	290.1	233.3	381.8	282.9
11	202	8	61	302.0	333.3	286.5	288.0	315.4	407.6	369.4	304.3	359.8	401.3
12	984	30	302	306.9	257.1	245.1	263.7	293.6	367.8	255.8	323.4	303.5	318.5
13	740	23	201	271.6	257.1	279.4	302.0	289.8	337.8	308.7	399.4	391.8	355.9
14	113	6	32	283.2	310.6	287.0	357.8	474.4	465.9	319.5	388.2	284.1	452.8
15	663	26	166	250.4	242.9	259.3	284.4	292.0	301.2	255.7	376.7	371.9	318.4
16	2008	49	491	244.5	198.0	276.0	233.2	283.7	296.9	231.4	271.8	195.8	232.5
17	1377	47	347	252.0	285.1	244.4	274.0	288.8	281.2	279.4	284.9	344.9	253.8
18	1151	45	314	272.3	230.9	265.1	243.3	218.7	261.0	212.7	248.5	251.0	262.5
19	951	36	221	232.4	241.9	260.3	234.6	266.1	275.6	232.9	267.6	258.6	269.5
20	1616	126	321	198.6	180.4	178.0	211.4	191.1	222.1	192.1	238.9	231.8	197.3
21	895	63	166	185.5	184.0	217.9	198.0	223.3	232.1	209.3	235.6	274.6	236.5
22	1016	57	235	231.3	170.0	227.9	204.9	204.7	239.1	211.9	214.6	250.3	216.8
23	1292	63	338	261.6	259.9	257.2	258.5	258.4	271.7	233.3	306.8	258.2	245.9
24	1596	79	394	245.9	247.6	207.9	259.3	259.2	292.6	248.6	231.7	236.1	236.4
25	852	62	179	210.1	206.6	207.5	223.6	166.2	230.9	177.6	204.2	162.5	206.6
26	742	26	193	265.5	229.1	241.1	249.3	225.4	279.3	224.5	255.7	247.9	261.6
27	868	44	273	314.5	249.7	278.5	269.2	303.9	330.8	227.1	258.3	272.3	299.7
28	1279	94	439	343.2	252.5	272.3	260.9	235.4	220.7	190.3	244.3	282.6	238.5
29	1488	63	349	234.5	235.6	233.1	208.5	195.9	251.3	203.0	241.3	267.1	239.0
30	851	48	234	275.0	230.8	259.1	237.1	324.9	248.0	253.3	254.5	318.0	261.5
Total	28533	1380	7540	264.3	236.5	248.3	243.9	256.6	286.8	237.6	279.3	278.8	264.1
General Death rate ...				37.9	34.4	35.8	43.2	42.4	60.5	42.3	45.0	47.3	41.7

STATEMENT XIV.

Table showing details of all Births in the Municipal Divisions in which the Scheme was working for one year ending with 31st December 1933.

Centre.	Municipal Divisions.	Total No. of Births from 1-1-1933 to 31-12-1933.	No. of cases conducted by the Corporation Mid-wives.	Percentage to Total Births.									
				1933	1932	1931	1930	1929	1928	1927	1926	1925	1924
Royapuram	1	939	357	38.1	57.2	43.6	58.8	41.50	39.5	41.9	39.3	20.1	13.0
Washermanpet	2	1,371	534	38.9	51.1	38.6	50.7	38.08	33.7	33.8	33.1	31.1	10.9
	3	1,271	629	49.4	70.3	53.6	47.04	48.50	41.9	43.4	39.6	39.1	32.3
	4	1,108	445	40.07	54.6	37.7	36.09	37.90	33.3	30.1	28.5	31.7	38.4
	5	345	220	64.3	73.1	55.8	54.9	32.37	32.5	21.3	15.6	12.5	6.7
Muthialpet	6	491	150	30.5	33.1	27.8	33.5	26.80	22.5	23.9	15.9	16.4	1.6
	7	525	329	62.6	78.7	58.1	74.4	57.60	50.6	46.3	36.7	41.3	27.6
	9	828	350	42.2	47.9	38.7	49.08	32.36	30.8	30.75	23.8	23.5	18.8
	8	175	60	34.2	39.4	30.1	29.3	22.06	16.2	18.8	11.0	3.1	13.4
George Town	10	796	476	59.7	66.3	57.6	50.8	50.41	31.4	36.3	31.8	31.5	28.3
	11	202	23	11.3	11.8	5.4	8.3	3.81	6.7	3.8	1.1	3.9	2.5
	12	984	470	47.7	61.3	52.3	44.5	40.04	38.1	37.75	29.8	31.1	24.1
	13	740	350	47.2	60.2	45.5	45.2	42.21	35.1	31.1	28.0	23.7	19.3
Perambur	14	113	30	26.5	50.4	22.2	31.1	41.02	31.5	38.8	67.0	21.3	6.2
	15	663	233	35.1	44.1	28.5	29.1	22.51	20.8	9.4	7.4	8.5	6.4
	16	2,008	982	48.9	61.5	48.2	45.5	47.10	28.0	25.2	22.7	21.5	20.8
	17	1,377	698	50.6	59.2	45.4	12.5	40.76	40.4	37.2	31.0	30.7	22.1
Choolai	19	951	322	33.8	43.7	27.6	5.9	37.56	39.3	35.6	35.8	26.7	28.7
	18	1,151	669	58.1	61.3	49.1	39.5	21.46	19.6	16.1	12.9	12.95	12.0
	21	895	374	41.8	51.8	33.8	28.4	29.67	22.3	18.3	16.6	14.0	25.6
	20	1,616	380	23.5	25.8	19.2	16.5	21.59	8.8	5.1	5.2	5.6	3.7
Egmore	23	1,292	443	34.2	46.4	29.5	32.1	37.59	15.6	21.0	17.4	16.5	42.0
	22	1,016	304	29.9	60.3	41.4	39.3	61.20	28.9	26.0	28.5	28.1	14.5
	24	1,596	880	55.1	62.0	54.2	65.5	55.48	47.9	49.2	41.1	38.9	29.4
	25	852	320	37.5	42.7	37.9	46.5	37.24	35.3	32.2	32.5	25.8	11.8
Triplicane	27	868	402	46.3	48.7	48.4	51.5	42.22	41.7	39.85	38.1	35.3	45.9
	26	742	194	26.1	32.7	24.3	34.1	26.22	22.6	22.15	75.9	19.3	25.1
	28	1,279	634	49.5	60.2	44.7	58.3	38.13	41.6	40.8	36.0	34.2	4.9
	30	851	315	37.0	52.9	28.9	42.9	27.09	27.1	26.2	22.0	14.2	21.0
Royapettah	29	1,488	556	37.3	59.6	37.8	50.3	10.87	28.5	21.7	21.8	20.35	14.9
Total	...	28,533	12,133	42.5	42.06	40.6	41.39	37.74	30.5	30.0	27.3	25.1	21.0

