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

CORPORATION OF MADRAS

HEALTH DEPARTMENT

ANNUAL REPORT

FOR

1951

PRESENTED BY
S. E. D. MASILAMANI, M.B., B.S., B.S. Sc., D.P.H. (Lond.)
HEALTH OFFICER
1952

CORPORATION OF MADRAS

HEALTH DEPARTMENT

ANNUAL REPORT FOR 1951

CONTENTS

THE MODEL PRESS, MADRAS-1

ILLUSTRATIONS

APPENDIX

INTRODUCTION

During the year, decennial census was taken in February 1951. According to this, the population of the city was 14,16,056. The estimated mid-year population for 1951 was 14,34,085. The vital statistics rates of 1950 were calculated on the estimated mid-year population of 1950 viz., 10,13,000, while the rates for 1951 are calculated on the estimated mid-year population viz., 14,34,085. It will, therefore, be seen that the comparison of the rates of 1950 with those of 1951 would be misleading. The decennium 1941-1951 was marked by an unprecedented increase in the population, almost double of what it was in 1941.

An interesting feature worthy of note is a study of natural increase in population during the inter-censal period since 1871 (Page 3). There have been more deaths than births during 1871 to 1921. But from 1931, there has been a natural increase of births of 1,687 ; 47,367 and 91,543 respectively in the three successive inter-censal periods. This is a clear indication of improved health conditions in the city and a clear evidence that the city is no longer a death-trap as it used to be described thirty years ago.

The year under report was a specially difficult one due to the continuance of drought conditions for the fifth successive year and the consequent acute shortage of water supply in the city. Inspite of this, the vital statistics reveal no deterioration. There was a fall in the infant mortality from 187.73 in 1950 to 166.57 in 1951. This is encouraging.

Cholera, which was prevalent in the city in the previous half-year' continued in a sporadic form during the year and it marked the maximum incidence in September 1951. Utmost vigilance was called for and all preventive measures had to be taken throughout the year. Additional staff had to be appointed from time to time to concentrate on preventive measures in the affected areas. Additional staff and accommodation had to be provided at the Infectious Diseases Hospital, Tondiarpet, to cope up with the situation.

The incidence of Small-pox showed a decline during the year. Enteric Fever continued to be prevalent in the city in a sporadic form throughout the year and there were 810 reported cases. This disease is difficult to control particularly when the incidence is sporadic. In this connection, I would urge the need for the more susceptible of the population, particularly students, to get themselves protected against this fell disease by T. A. B. inoculation at the commencement of the term in July.

The various medical services rendered through this Department, dispensaries, hospitals, special clinics for leprosy, venereal disease and tuberculosis have been very useful as evidenced by the increasing number of citizens availing themselves of these services. Special mention may be made of Tuberculosis Service. As indicated in my last report, four more clinics have been opened pursuant to the acceptance both by the Government and the Corporation of the recommendations of the Sub-Committee appointed by the Madras Tuberculosis Association. These clinics have been rendering relief to an increasing number of patients. But the problem of finding accommodation for those needing hospitalisation is most acute especially now that there is more case finding through these clinics. It is, therefore, necessary that the other part of the recommendations viz., provision of more beds, needs immediate implementation. The Council has provided funds for acquiring additional site for providing more beds. It is for the Tuberculosis Association and Government to discharge their responsibility under the scheme by providing more beds.

The Laboratory Services provided by the Corporation viz., the Public Health Laboratory, the Water Analyst's Laboratory and the Public Analyst's Laboratory, have done an increased volume of work. In the Public Health Laboratory, it was necessary to appoint an assistant to the Pathologist and other technical staff to cope with the increased demand on its services. 4,931 samples were analysed under the Madras Prevention of Adulteration Act. The Public Analyst, in his report, points out that the fines imposed have been progressively decreasing during the past few years. It has been repeatedly pointed out that unless deterrent fines are imposed on the guilty, it would be difficult to control the adulteration of essential food-stuffs like milk, butter, ghee etc.

The subject of transferring conservancy to a separate department has been considered by the various committees and is now before the Council. It is hoped that it will be transferred to a separate department before the close of 1952.

I was away on a W.H.O. Travel Fellowship to U.K. and Scandinavian countries from March 1951 to August 1951 and was on leave from 27th August to 24th December, during which periods, my senior-most assistant, Dr. G. Srinivasan, acted in my place.

The great help and wise guidance of the Commissioner to this Department is acknowledged with thanks. I have also to place on record my thanks and appreciation of the very good work rendered by my assistants and other members of the staff of this Department.

S. E. D. MASILAMANI, M.B.B.S., B.S.Sc., D.P.H. (Lond.)

28—8—52 *Health Officer*

Forwarded

The work done by the Health Department of the Corporation cannot be properly assessed without reference to the general, economic and social conditions of the people, especially the poor and the middle classes, who form the bulk of the population. The health of the people cannot show marked improvement solely on account of certain efforts made by the Corporation health staff, so long as the housing conditions are bad and the people have not got sufficient purchasing power so as to provide themselves with the bare necessaries of life, their civic conscience is low and they are indifferent towards the problems of sanitation and health. The Corporation's efforts in improving the amenities of life do not show results commensurate with their work as long as these defects continue.

During the year, 12·25 miles of sewers have been laid. 2,916 dry latrines have been converted into flush-out latrines. 30 more miles of streets have been made dust-proof, better lighting has been provided in poorer areas, the activities of the child welfare scheme have been extended, but these and similar measures would have improved the sanitation and conditions of living better had the people realised their civic duties, co-operated with the Corporation better, made an earnest effort to improve their own huts and houses and their surroundings. The education of the people in civic duties is thus more important for the Corporation than any other measure.

The city's population is increasing. The number of births in 1951 was 58,961 against 52,619 in the previous year and the number of deaths rose from 38,726 in 1950 to 42,039 in 1951. The natural increase of births over deaths during 1951 is 16,922 against 13,893 in the preceding year. The increase in deaths is due partly to the increase in population and partly to the prevalence in the city, almost throughout the year, of Cholera and Small-pox. One encouraging feature was the fall in the rate of infant deaths from 187·73 per 1000 live births in 1950 to 166·57 per 1000 live births in 1951. Of the total number of births of 58,961 in the city, as many as 29,931 were conducted by the staff of the child welfare scheme of the Corporation. The death rate among infants who came under the care of the Corporation child welfare scheme was 123·16 against 166·57 for the city as a whole. Our child welfare centres are very popular and extremely useful. The Corporation has been quite alive to the importance of having a chain of these centres throughout the city and has sanctioned the opening of 2 more centres in the current year. The bed strength in the maternity wards of these centres has been increased to 199.

I have always believed that the Health Officer and his big staff would be able to devote better attention to their legitimate health work if that department is relieved of the mechanical duty of collecting, removing and disposing of rubbish. At present, most of their time is taken away in organising a large body of staff for this work, in maintaining mechanised transport, ordinary carts and live stock and in making compost etc. I have suggested to the Council, and the Government have also stressed that, as a major civic body, the city Corporation should give a lead to other municipalities in effecting this separation of functions and transferring this part of the work of collection and disposal of rubbish to the Mechanical Engineer who is better fitted to look after the transport. The Standing Committees have approved this proposal and it is now pending before the Council for final acceptance. I have no doubt that once this proposal is accepted and carefully worked, the health staff would be able to visit houses more frequently than now, advise owners and tenants on the many small defects which they themselves can rectify and on all petty improvements which could be effected by themselves and which nevertheless result in the proper upkeep of the houses and their surroundings.

Few people have a correct idea of the magnitude of the work which the Health Department of the Corporation has to do. Educating the mother and taking care of the child in the womb, running child welfare centres, creches, nursery sections, dispensaries, infectious diseases hospitals, skin clinics, conservancy cattle depots and looking generally after the maintenance of drains and of the health of 15 lakhs of people are not an easy task. The preventive measures which include the maintenance of vital statistics, vaccination, inoculation, health education, the school health, the free school meals service are an important part of the Health Department's work. I am glad to say that despite the strain cast on the department as a whole on account of Cholera and Small-pox which prevailed in the city during the year and the difficulties experienced by the scarcity of water supply, the department has given a good account on the whole of its activities during the year. Dr. Masilamani and Dr. Srinivasan, who acted as Health Officer, while the former was away in the United Kingdom and Scandinavian countries studying health administration, and Captain Dr. Rukmani, Superintendent of the child welfare scheme, deserve to be congratulated on the good work done by them.

C. NARASIMHAM I.A.S.,

23—9—1952. *Commissioner.*

Summary of Vital Statistics for 1951

Area	...	31,836·9920 acres or 49·74 sq. miles
Population as per census of 1951	...	14,16,056
Population estimated (mid-year) 1951	...	14,34,085
Average density per acre	...	45·0
Births excluding still-births	...	58,961
Birth-rate per 1000 of estimated population	...	41·11
Deaths excluding still-births	...	42,039
Death-rate per 1000 of estimated population	...	29·31
Natural increase	...	16,922
Rate of natural increase per 1000 of estimated population	...	11·80
Still-births	...	1,634
Infantile deaths	...	9,821
Infantile death-rate per 1000 live-births	...	166·57
Maternal deaths	...	151
Maternal death-rate	...	2·50

Deaths from Principal Causes

Principal causes	Deaths	Death-rate per 1000 of estimated population
Cholera	186	0·13
Dysentery and diarrhoea	5,695	3·97
Small-pox	449	0·31
Malaria	91	0 06
Enteric fever	214	0·15
Tubercle including tubercle of lungs	898	0·63
Respiratory diseases	9,933	6·93

VITAL STATISTICS

Meteorology :— Statement No. 1 in the appendix furnishes the city's atmospheric conditions during the year as recorded by the Observatory.

Rainfall :— The rain-fall recorded during the year viz. 30·65 inches was the lowest recorded in the city since 1938. The rain-fall during the year was 5·86 inches less than the fall in the previous year and 14·49 inches less than the average fall during the previous five years. The statement below furnishes the rain-fall recorded in the city during the last twenty years.

Year	1st quarter	2nd quarter	3rd quarter	4th quarter	Total
1931	0·05	6·76	17·94	33·78	58·53
1932	0·69	2·31	7·28	36·31	46·59
1933	3·42	0·98	5·20	30·58	40·18

Year	1st quarter	2nd quarter	3rd quarter	4th quarter	Total
1934	2·05	2·54	11·20	20·87	36·66
1935	0·57	1·23	14·26	24·28	40·34
1936	3·70	3·53	12·39	24·63	44·25
1937	0·07	4·72	15·53	41·06	61·38
1938	1·59	2·04	1·94	10·49	26·46
1939	0·94	6·40	7·35	18·93	33·62
1940	0·26	6·75	11·01	34·18	52·20
1941	0·75	4·00	10·80	45·79	61·34
1942	0·05	3·29	9·00	22·88	35·22
1943	2·73	16·90	11·54	52·88	84·05
1944	12·84	4·08	15·83	45·22	77·97
1945	0·12	6·01	15·63	20·95	42·71
1946	1·51	4·51	15·18	60·92	82·12
1947	5·46	1·41	12·99	14·93	34·79
1948	2·19	1·47	10·98	19·45	34·09
1949	—	12·85	14·94	10·42	38·21
1950	1·26	4·42	18·74	12·09	36·51
1951	0·16	5·42	11·76	13·31	30·65

The city had only 13·31 inches of rain during the fourth quarter of the year. There was rain-fall on 51 days during the year against 52 days in 1950 and 54 days in 1949.

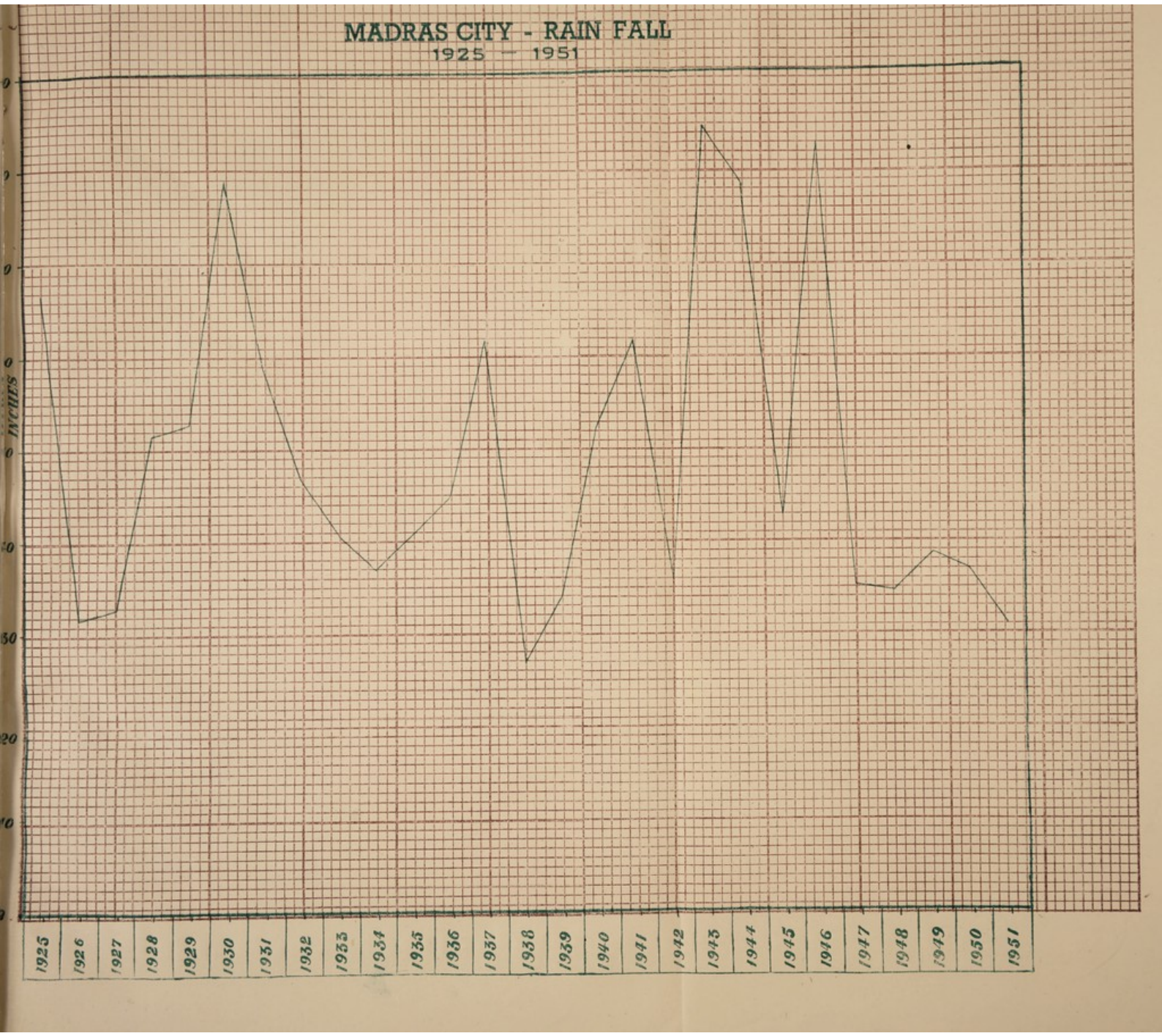
Population :—Decennial census was taken in the year 1951. The enumeration was conducted in the month of February 1951. According to this, the population of the city was 14,16,056. The population according to census of 1941 for the city of Madras was 7,77,481 excluding the extended areas. The population including the added areas was 8,75,184. The comparative statement of the population for the City of Madras enumerated decennially since 1871 is as follows :

Census year	population	Census year	population	
1871	3,97,552	1921	5,26,911	
1881	4,05,848	1931	6,47,230	
1891	4,52,518	1941	7,77,481	(8,75,184 inclusive of added areas from 1946.)
1901	5,09,346			
1911	5,18,660	1951	14,16,056	

A statement showing the absolute and the percentage decennial increase is given below :

Decennium	Absolute decennial increase of population	Percentage decennial increase of population
1871-1881	8,296	2·1
1881-1891	46,670	11·5
1891-1901	56,828	12·6
1901-1911	9,314	1·8
1911-1921	8,251	1·6
1921-1931	1,20,319	22·8
1931-1941	2,27,954	35·2
1941-1951	5,40,872	61·8

There has been an increase of 5,40,872 during the decennium 1941-1951. Part of this increase can be explained by the added areas coming into the city from 1946. The natural increase in the population during the decennium was


MADRAS CITY - RAIN FALL
1925 — 1951
INCHES
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951

91,543 (6,440 up to 1946 and 85,103 after 1946). The additional increase is due to influx of population into the city from outside. This is in keeping with the modern trend of movement of population from rural to urban areas.

The comparative natural increase of the population as recorded in the vital statistics of the city during the inter-censal periods from 1871 is furnished below:

Inter-censal period	Births registered in each inter-censal period	Deaths registered in each inter-censal period	Increase or decrease
1871-1881	1,18,548	1,80,589	−62,041
1881-1891	1,60,830	1,61,196	− 366
1891-1901	1,84,112	1,88,521	− 4,409
1901-1911	1,96,864	2,24,334	−27,470
1911-1921	2,01,076	2,23,096	−22,020
1921-1931	2,29,432	2,27,745	+ 1,687
1931-1941	2,97,482	2,50,115	+47,367
1941-1951	3,77,347	2,85,804	+91,543

It will be noticed that from 1921 the city has been recording steady increase in population as against a natural decrease recorded from 1871 to 1921. This is an indication of the improved health conditions in the city.

Among 14,16,056 persons enumerated, 7,37,013 or 52·5% were males and 6,79,043 or 47·5% females against 52·4% and 47·6% respectively in the previous census. The rates of males to 100 females was 108·5 as compared with 110·1 in 1941. Excess of male population over female population was recorded in 43 Municipal Divisions.

Details of the census enumeration relating to the population according to age periods are not yet available.

The mid-year population for 1951 has been estimated at 14,34,085 and this has been adopted for calculating birth, death and other rates furnished in the report.

The area of the city including the added areas is 49·74 square miles or 31836·9920 acres. The average density based on the estimated population worked out to 45·0 per acre.

Registration of Births and Deaths:—Registration of births and deaths is compulsory in the city and this is done in 28 centres. 18 Medical Officers assisted by Birth and Death Clerks attend to this work.

Births and Birth-rate:—The total number of live-births registered during the year 1951 was 58,961 the highest on record - equivalent to a birth-rate of 41·11 per 1000 of the estimated population against 52,619 births with a rate of 51·94 per mille in the preceding year, worked on the basis of an estimated population of 10,13,000. The quinquennial average was 48·30 worked on the estimated population of each year. The variation in the rates is due to the rates being worked on estimated figures during the past quinquennium and the present rate being worked on the census population of 1951.

Of the total number of children whose births were registered, 30,080 were males and 28,881 females, the ratio of male births to female births being 104 to 100 against 107 to 100 in the pervious year. Excess of male births over female births was recorded in 39 Municipal Divisions.

The seasonal distribution of births during the year was as follows:

Quarter	Number of births registered	Percentage to total births registered
1st quarter	10,099	17·13
2nd „	14,170	24·03
3rd „	16,641	28 22
4th „	18,051	30·62
Total	58,961	100·00

The largest number of births was recorded in the fourth quarter and the lowest birth in the 1st quarter as in the previous years.

Births and birth-rates among the principal communities were as follows :—

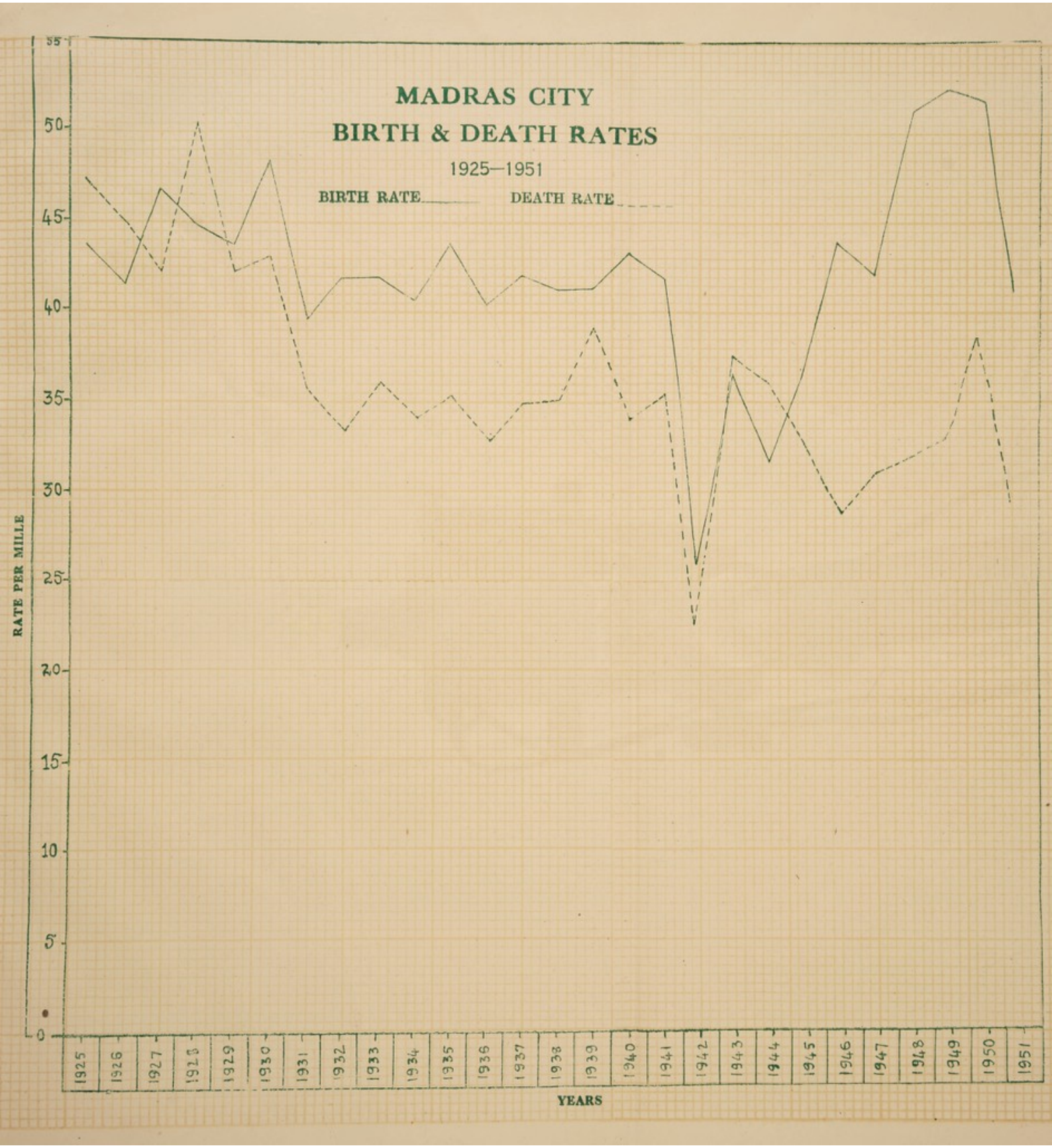
Principal communities	Total population	Number of births	Birth rate per 1000 of census population
European	1,534	34	22·16
Anglo - Indian	13,247	348	26·27
Indian Christian	95,387	2,281	23·91
Hindu	11,55,722	51,348	44·43
Muslim	1,40,319	4,930	35·13
Others	9,847	20	2·03
Total	14,16,056	58,961	41·64

Still - births:—The number of still - births registered during the year was 1,634 (883 males and 751 females) giving a rate of 27·71 per 1000 live - births against 1733 and a rate of 27·50 in 1950.

Deaths and death - rates:—The total number of deaths from all causes registered during the year was 42,039 including deaths of non - residents, homeless and destitutes against 38,726 deaths in the previous year. Calculated on the estimated mid-year population, the death - rate was 29·31 per mille against 38·23 in 1950, the quinquennial average rate being 32·43 per mille. An excess of 16,922 births over deaths was recorded during the year against 13,893 excess births in the previous year.

The rate of natural increase works out to 11·80 per mille against 13·7 in 1950. The distribution of deaths during the different quarters of the year was as follows:

Quarter	No. of deaths	Percentage to total deaths
1st	8,725	20·75
2nd	10,193	24·25
3rd	10,852	25·81
4th	12,269	29·19
Total	42,039	100·00


MADRAS CITY
BIRTH & DEATH RATES
1925—1951
BIRTH RATE
DEATH RATE
RATE PER MILLE
55
50
45
40
35
30
25
20
15
10
5
0
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
YEARS

The principal communities recorded the following death-rates during the year:

Community	Deaths	Rate per 1000 of census population in each community
European	9	5·87
Anglo - Indian	208	15·70
Indian Christian	1,766	18·51
Muslim	4,029	28·71
Hindu	36,023	31·17
Others	4	0.41
Total	42,039	29·69

Sex and age distribution of deaths:—Of the total deaths registered during the year, 21,588 deaths were among males and 20,451 deaths among females. There were 106 male deaths for every 100 female deaths as compared with 108 to 100 in the previous year. Excess of male deaths over female deaths was recorded in 31 Municipal Divisions.

The specific death-rate of males and females was 29·3 and 30·1 per mille respectively. The number of deaths under the different age groups and its percentage to the total mortality for the year are given in the following statement.—

Age groups	Recorded number of deaths	Percentage to total deaths recorded
Under one year	9,821	23·36
1 - 5 years	10,702	25·46
5 - 10 „	2,203	5·24
10 - 15 „	774	1·84
15 - 20 „	853	2·03
20 - 30 „	2,963	7·05
30 - 40 „	2,695	6·41
40 - 50 „	2,548	6·06
50 - 60 „	2,761	6·57
Over 60 years	6,719	15·98
Total	42,039	100·00

Infant Mortality:—9,821 Infantile deaths (5,121 boys and 4,700 girls) under one year have been recorded during the year giving an infantile mortality rate of 166·57 per 1000 live-births as against 9,878 infant deaths and 187·73 per thousand live-births in the previous year, the average rate for the previous five years being 176·26 per mille of live-births. The percentage of infantile deaths to total deaths was 23·36 during the year against 25·51 in 1950 and 25 20 in 1949.

The statement below furnishes the infantile death-rates recorded during the previous ten years as compared with 1951.

Year	No. of births registered	No. of infantile deaths	Infantile death-rate per 1000 live-births
1941	32,770	6,847	208·94
1942	20,644	4,062	196·76
1943	29,498	7,295	247·30
1944	26,056	7,407	284·27
1945	30,549	6,532	213·82
1946	41,874	7,663	183·00
1947	40,753	7,987	195·99
1948	50,222	7,833	155·97
1949	52,362	8,304	158·59
1950	52,619	9,878	187·73
1951	58,961	9,821	166·57

There has been a progressive increase in the number of births registered in the city year after year since 1947.

The statement below furnishes the distribution of infant deaths in the different age periods of first year of life during the year.

Age periods	Number of infant deaths	Proportion to total infantile deaths
Under 7 days	1,999	20·36
7 days and under 1 month	1,349	13·74
1 month and under 6 months	3,404	34·66
6 months and under 1 year	3,069	31·24
Total	9,821	100·00

Seasonal Variation :—Infant deaths recorded in the different quarters of the year were as follows :-

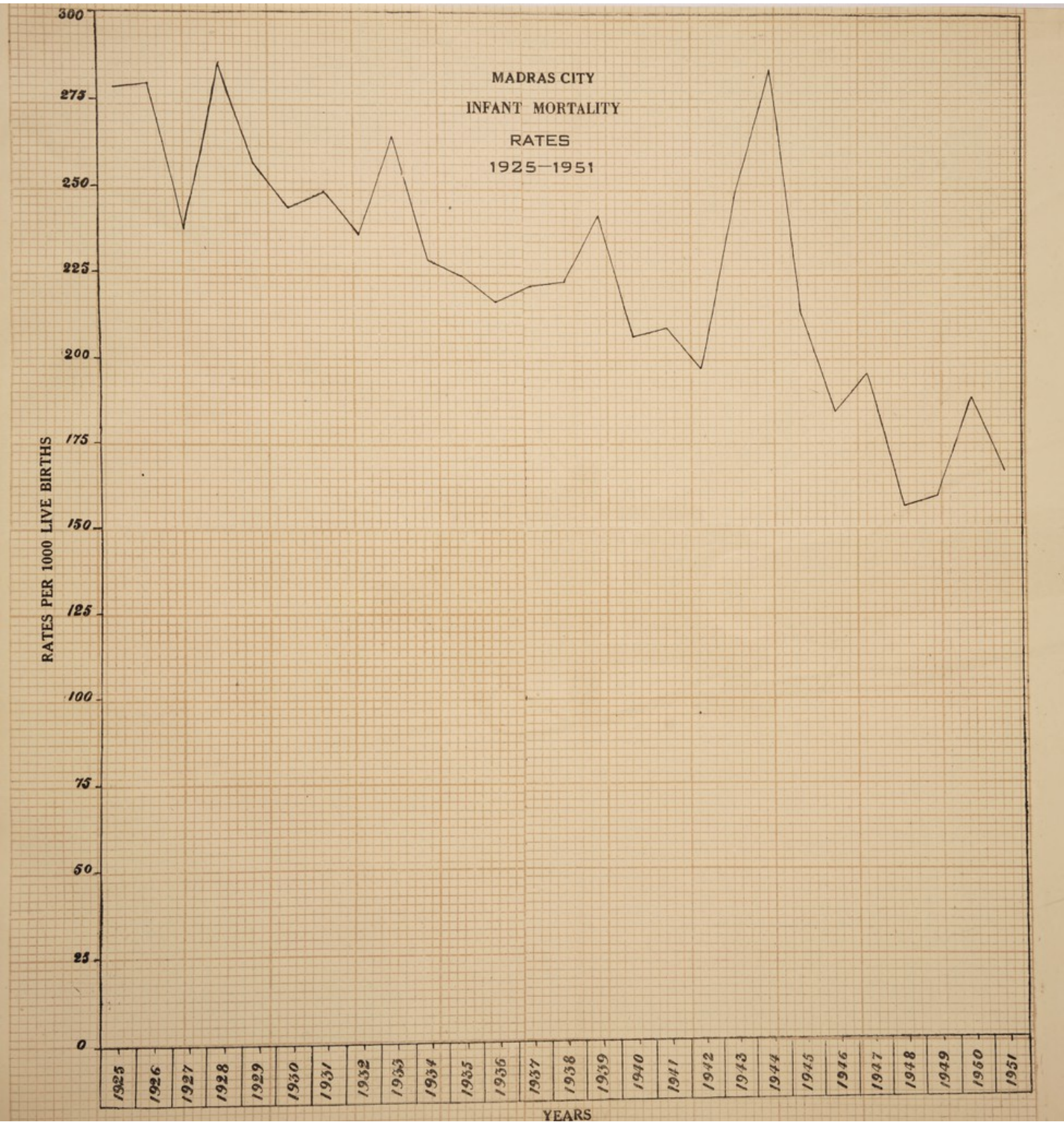
Quarter	No. of infant deaths	Percentage to total infant deaths
1st	2,000	20·4
2nd	2,312	23·5
3rd	2,612	26·6
4th	2,897	29·5
Total	9,821	100·00

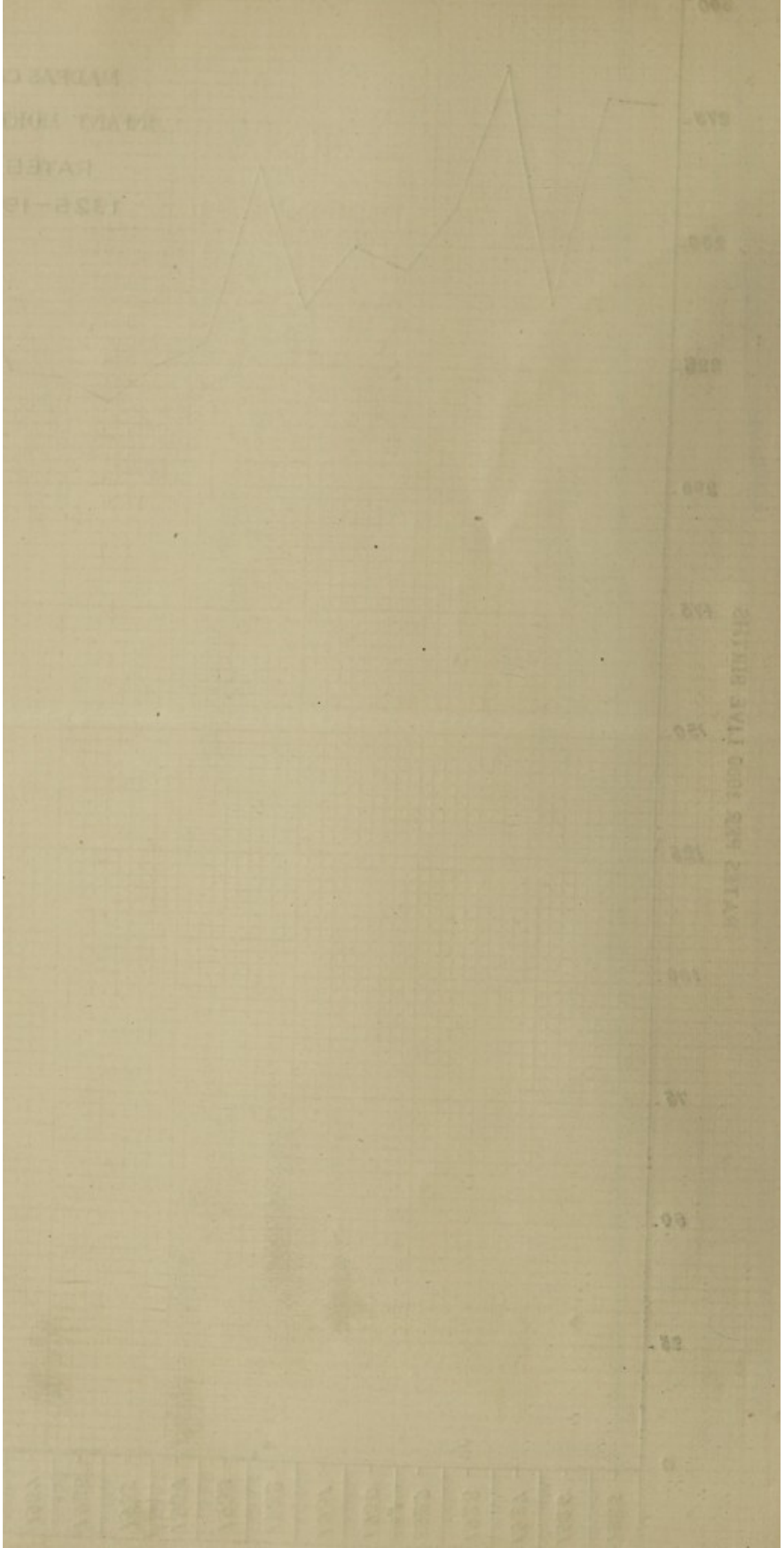
Infant mortality with rates among principal communities :—

The infant mortality and the rates among the principal communities are given below :

Community	No. of births recorded	No. of infant deaths	Infantile death rate per 1000 live-births
European	34	—	—
Anglo-Indian	348	25	71·84
Indian Christian	2,281	318	139·41
Muslim	4,930	997	202·23
Hindu	51,348	8,481	165·17
Others	20	...	...
Total	58,961	9,821	166·57

Principal causes of deaths :—The mortality figures with the rates under the principal causes of deaths during 1951 as recorded in the death registers are furnished below:


MADRAS CITY
INFANT MORTALITY
RATES
1925—1951
RATES PER 1000 LIVE BIRTHS
300
275
250
225
200
175
150
125
100
75
50
25
0
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
YEARS



Principal causes of deaths	No. of deaths recorded in 1951	Death-rate per 1000 of estimated population
Cholera	216*	0·15
Dysentery and diarrhoea	5,695	3·97
Small-pox	490*	0·34
Malaria	91*	0·06
Enteric fever	256*	0·18
Other fevers	3,504	2·44
Tubercle including tubercle of lungs	898	0·63
General respiratory diseases	9,933	6·93
Injuries	443	0·31
Deaths from child-birth	151	0·10
All other causes	20,362	14·20
Total	42,039	29·31

*Includes deaths among moffussil cases admitted in the city Hospitals.

Plague:—The city continued to be free from Plague during the year.

Cholera:—Cholera continued to prevail in the city though sporadically throughout the year. There was increased incidence during September and it gradually declined afterwards. The number of attacks and deaths from cholera in each month during the year was as follows:

Month	Cases recorded in the city		Cases admitted from the adjoining district of Chingleput for isolation and treatment	
	Cases	Deaths	Cases	Deaths
January ...	49	13	25	5
February ...	42	5	3	1
March ...	24	4	17	3
April ...	26	3	7	0
May ...	95	15	27	6
June ...	67	12	14	3
July ...	26	4	5	0
August ...	82	15	8	0
September ...	536	68	37	3
October ...	135	23	26	1
November ...	47	7	29	1
December ...	91	17	29	7
Total ...	1,220	186	227	30

1,220 attacks and 186 deaths from cholera were registered in the city during the year with a death-rate of 0·13 per mille of the estimated population against 1,139 attacks and 183 deaths with an annual death-rate of 0·18 per mille in the previous year, the quinquennial average rate being 0·09 per mille.

The usual preventive measures such as disinfection, inoculation of contacts, removal of patients to hospitals, chlorination of wells etc., were promptly adopted. The members of the Health staff were concentrated in the infected areas and extra staff was appointed according to requirements. Inoculations were performed after dusk in slums and other affected areas so

as to get at the labouring classes. As a result of the energetic measures taken promptly, the disease was brought under control. The Government were kept informed of the day-to day situation of the incidence of cholera in the city. 3,32,030 persons were protected against cholera during the year. 13 persons were prosecuted for failure to notify cases of cholera and to get themselves inoculated.

There was a mild out-break of cholera in the Government General Hospital from 31st August 1951 to 5-9-1951. There were 33 cases. The Government in their G. O. No 3139 dated 11th Septemper 1951 appointed a committee to investigate and report on this incidence. The Health Officer was nominated by the Government as one of the members. On the basis of the recommendation of the Committe, Government in G. O. No. 135 dated 12-1-1952 issued instructions for avoiding its recurrence.

Small-pox:—The total number of deaths from Small-pox was 449 in 1951 against 882 in 1950. All efforts were made to deal with the situation. The entire Health staff was mobilised to take preventive measures. Besides the permanent Health staff, special staff was also appointed to augment the permanent staff to push on vaccinations and to detect and isolate cases. 79 persons were prosecuted for failure to notify cases of Small-pox during the year.

Measles:—2 deaths from Measles were registered during the year with a death-rate of 0·001 per mille of the estimated population.

Dysentery and Diarrhoea:—The total number of deaths due to dysentery and diarrhoea was 5,695 against 4,335 in 1950.

Malaria:—The number of deaths from Malaria in the city recorded during the year was 91 equivalent to a death-rate of 0·06 per thousand. This was less by 11 deaths than last year's mortality which numbered 102 with a death-rate of 0·10 per mille.

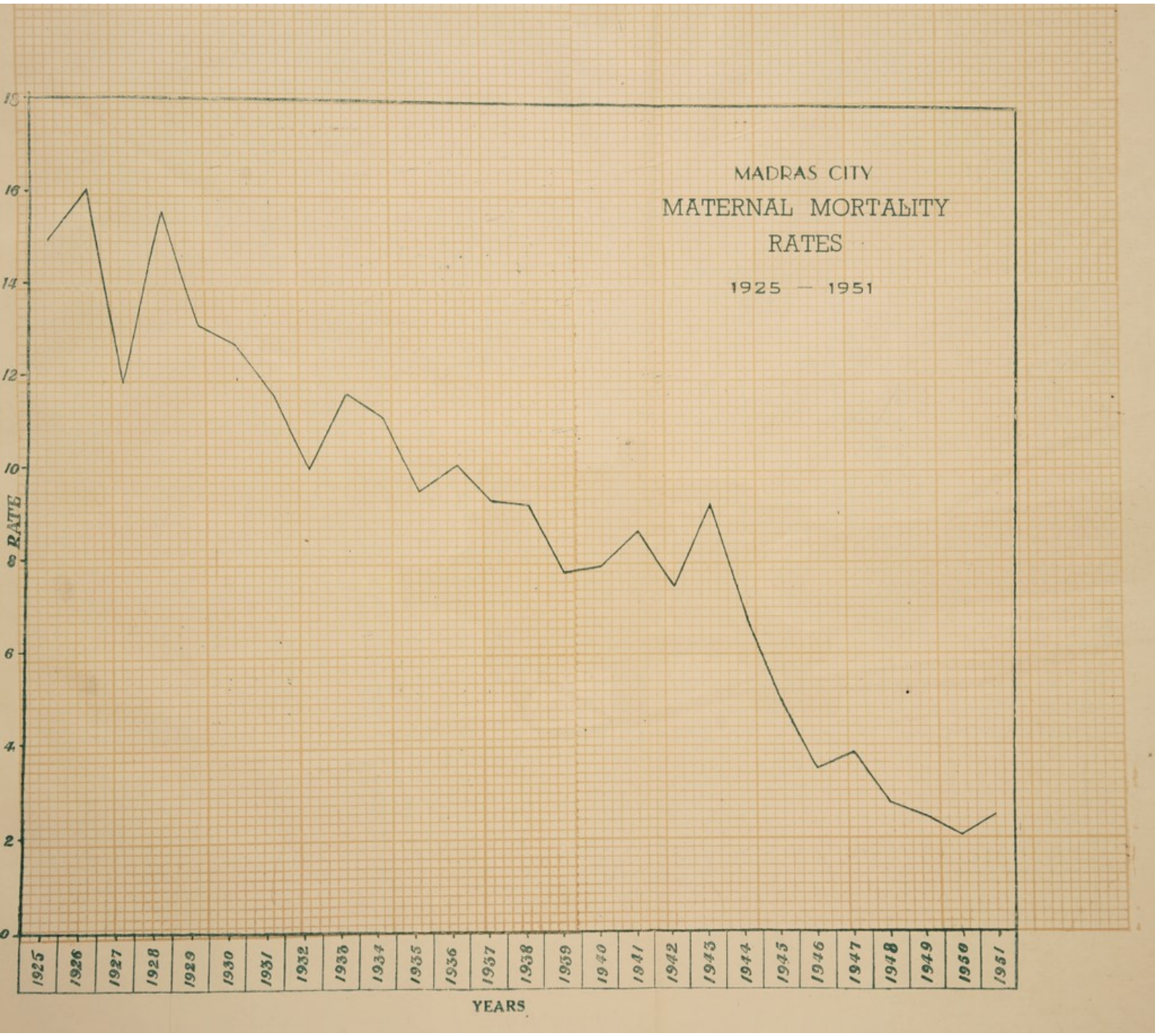
Enteric or Typhoid Fever:—810 attacks and 214 deaths from Enteric fever were registered in the city during the year against 801 attacks and 187 deaths in the previous year. Typhoid was prevalent in the city in a sporadic form throughout the year. 22,450 inoculations against Typhoid were performed in the city. During the year, 109 cases were admitted into the city hospitals, clinics, nursing homes etc., for treatment from the adjoining district. Of these, 42 proved fatal.

Other fevers:—Under this head are registered all deaths due to fevers other than Malaria, Enteric fever and Tuberculosis. During the year, 3,504 deaths under this head were registered against 2,644 deaths in 1950. The death-rate calculated on the estimated population was 2·44 per mille against 2·61 in 1950.

Tuberculosis:—898 deaths from Tuberculosis including Tubercle of lungs were recorded in the city during the year against 813 deaths in ths previous year. The Health staff inspected the houses of all cases notified by the various clinics in the city and gave necessary instructions to the contacts about its prevention and to get themselves examined and treated.

Details of cases treated at the Corporation Tuberculosis Hospital and at the clinics are furnished separately.

General Respiratory Diseases.- The total number of deaths from respiratory diseases in the city during the year was 9,933.


MADRAS CITY
MATERNAL MORTALITY
RATES
1925 — 1951
RATE
YEARS
0
2
4
6
8
10
12
14
16
18
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951

Deaths from injuries.— 443 deaths from injuries were registered during the year against 325 in 1950.

*Deaths from child-birt—h.*151 deaths of mothers as a result of child-birth in 1951 were registered giving a maternal mortality rate of 2·50 against 113 deaths and a rate of 2.15 in the previous year.

The deaths from child-birth during the year are classified below according to age groups and causes of death:-

Causes of death	Age groups				Total	Percentage to total deaths from child-birth
	10-20 years	20-30 years	30-40 years	40 and above		
Puerperal sepsis	8	26	7	3	44	29.1
Abortion	2	10	3	-	15	9.9
Other accidents of pregnancy	22	45	20	5	92	61.0
Total	32	81	30	8	151	100.0

Details relating to the deaths of mothers who came under the care of the various clinics of the Child Welfare scheme are given in the Annual Report of the Lady Superintendent, Child Welfare Scheme.

Deaths from "other causes".— 20,360 deaths from other causes were registered during the year against 20,087 deaths in 1950.

Certified deaths.— 7,869 deaths were certified by the various hospitals clinics and institutions in the city and 1,341 deaths were certified by private medical practitioners as to the causes of death. The certified deaths represented 22 per cent of the total deaths registered during the year as compared with the same percentage in the previous year. Medical Officers in charge of Registration of Births and Deaths verified the causes of other deaths. The percentage of certified deaths still continues to be poor and unsatisfactory. It is necessary to amend the rules of Registration of Births and Deaths to make certification of deaths compulsory in the city.

VACCINATION

Staff:- 18 Medical Officers assisted by 72 Male Vaccinators and 8 Lady Vaccinators were in charge of vaccination. Vaccinations were also performed by the Medical Inspectors and Inspectresses among Corporation school children and Medical Officers of dispensaries at the dispensaries. Sanitary Inspectors vaccinated those employed in licensable places and contacts of small-pox cases. Lady Medical Officers in charge of Child Welfare Centres vaccinated those who came for vaccination at the Child Welfare Centres.

Vaccinations:- During the year, 4,58,319 vaccinations were performed in the city. Of these, 52,027 were primary vaccinations and 4,06,292 were re-vaccinations.

Operations:- 52,027 primary vaccinations were performed during the year against 56,804 in the previous year, the quinquennial average (1946-50) being 42,061. 4,06,292 re-vaccinations were performed in 1951 against 9,05,402 in 1950.

As usual, the vaccination staff made house-to-house inspections with a view to detect un-protected children who either moved into the city from outside or were born in the city and had escaped vaccination.

Number of successful vaccinations:- The success rates for the year were 99.9 in primary vaccinations and 4.3 in re-vaccinations.

The vaccination staff contacted the parents of 53,826 babies born and registered in the city for the purpose of compulsory vaccination under the bye-laws framed under section 349 (26) of the Madras City Municipal Act. By intensive house-to-house inspections, they were able to detect 12,715 babies born in mofussil and brought into the city without being vaccinated. 5,910 babies under one year of age died before vaccination. 14,529 babies left the city before verification for purposes of vaccination and 4,895 babies could not be traced. 1,049 babies were certified as unfit for vaccination under medical advice. 38,724 babies under one year of age i. e. 94 per cent of those available for vaccination were vaccinated during the year.

Primary vaccinations:- Primary vaccinations performed in the city under different age periods are furnished below:

Age periods	Number of primary vaccinations performed	Percentage to total primary vaccinations
Under 6 months	5,558	10·7
6 months under 1 year	33,194	63·8
1 year and under 2 years	6,437	12·4
2 years and under 3 years	2,403	4·6
3 years and under 4 years	2,568	4·9
4 years and under 5 years	1,241	2·4
5 years and under 10 years	599	1·2
10 years and above	27	0·05
Total	52,027	100.0

Inspection of vaccinated persons:- The Health Officer, Assistant Health Officers and Medical Officers in charge of Vaccination inspected vaccinated persons. During the year, 42,742 primary vaccinations and 99,812 re-vaccinations were verified by them. 307 persons were prosecuted for failure to get their childern vaccinated and 82 persons for failure to get themselves re-vaccinated inspite of notices served on them under section 349 (26) of the Madras City Municipal Act.

Training of pupils in Vaccination:- Students of the Sanitary Inspector's class of the Madras Medical College and of the Government Stanley Medical College, apprentice-physicians of the College of Indigenous Medicine, Kilpauk, and students of the Christian Medical College, Vellore, were posted for training in Vaccination under the Medical Officers in charge of Vaccination during the year.

MEDICAL RELIEF

There were 32 general dispensaries, 8 special clinics and 2 hospitals. 24 of the dispensaries were allopathic, 3 sidha, 3 unani and 1 ayurvedic. The Ayurvedic Dispensary is located in Thousand Lights and attends to only women and children. Of the special clinics, 5, attend to Tuberculosis cases, 2, to leprosy and 1, to venereal diseases. The Infectious Diseases Hospital is at Tondiarpet and the Sri Thiruvotteeswarar Tuberculosis Hospital is at Otteri. The Public Health Laboratory, situated behind Ripon Buildings, continued to be popular.The Ashok Vihar Health and Recreation Centre completed its third year. It maintains the aim and the scope with which it was started. Separate reports on the working of these institutions are found in the Report.

Dispensaries:

27,18,525 cases were attended in the Corporation general dispensaries during the year as against 26,90,613 cases in the previous year. 13,106 minor operations were performed during the year in these dispensaries. Figures for each dispensary are furnished in the Appendix - Medical Relief Statement I.

Clinics

Leprosy Clinics:—The two leprosy clinics, one in Ice House Road and the other in Vyasarpady, continued to be popular during the year under report. There was increased demand on the services of the clinics as in the previous years. A large number of suspicious cases attended the clinics for the purpose of diagnosis. Patients not only from the different parts of the city but also from the suburbs and districts attended the clinics for advice and treatment.

During the year, the clinics recorded a total attendance of 50,006 including 9,218 new cases of skin and leprosy. Out of the 1,755 new leprosy cases, the number of infective cases was 333 and the rest, non-infective. On the whole, 25,650 injections for leprosy cases and 2,224, for skin cases were performed.

The administration of hydnocorpus oil and esters, subcutaneously and intradermally in adequate doses, continued to be the treatment in force. Sulphones, which have been recognised recently as a definite advance in the treatment of leprosy, was adopted this year, the drugs of choice being D. D. S. (Avlosulfon) orally. It is our aim to administer the drug to all leprosy cases especially, lepromatous cases. A study of selected cases who regularly attended for treatment was made.

1. Those patients who were started on an initial dose of 25 mgs. per day and gradually raised to 100 mgs. per day in the course of 5 weeks were able to tolerate the drug much better than those started on higher doses.

2. Marked clinical improvement especially in the lepromatous cases was observed within a period of 3 to 4 months after starting the treatment.

3. Untoward symptoms such as reaction, anaemia, loss of weight etc., were found to be rare.

4. It was observed in most of the cases that the Hb % improved with treatment.

As children are highly susceptible to this disease and as the control of leprosy among children largely contributes towards the eradication of leprosy, special attention was paid to the treatment of afflicted children. Children studying in various Corporation schools with definite and suspicious signs detected by the School Medical Inspectors were brought to the clinics by the Corporation Medical Service van for diagnosis and treatment. In the latter part of the year, the Medical Service van was also directed to the survey areas to fetch children suffering from leprosy. Many children availed themselves of the opportunity and attended the clinics for treatment.

The population in the divisions selected for survey was roughly about 25,000 each. Each division, for the purpose of leprosy survey, was divided into smaller areas and called 'A' 'B' 'C' and 'D'. Each small area comprised of a number of streets.

Most of the families in these areas were found to be of low economic standard and illiterate. Few of them knew that leprosy is infectious. Dermitities, scabies and fungus infections of the skin were found to be of common occurrence. Most of the residents belong to the working classes. Division 21 (Ayanavaram) being a large area, was divided into 4 blocks and surveyed. The survey of blocks 'A', 'B' and 'C' was done during 1950. Block 'D' was taken up this year. A rapid re-survey of the above 3 blocks was also carried out along with the survey of block 'D' for follow-up purposes. It was interesting to find that many changes had occurred in the above 3 blocks in the course of one year. While some had shifted from one block to another in the same area, some others had left the city while others had newly come into the area. It will be seen from this how difficult it is in a city like Madras, where the population is so constantly on the move, to collect exact details for survey work as compared to rural areas, where one can be more definite about the movement of the population.

Venereal Clinic:—The Venereal Clinic is situated at 82, Strahan's Road, Otteri. It has separate sections for males and females with a male doctor and a lady doctor in charge of the respective sections. The dispensary is common to both. It draws its patients mostly from the surrounding area which is an industrial area.

The following is the details of the work done in the clinic:-

No. of new cases treated at the clinic:-

Males	2,394
Females	1,072
Children	138
Total no. of new cases	3,604

S. No.	Diseases	Males	Females	Children	Total
1	Syphillis	203	387	99	689
2	Gonnorrhoea	643	313	13	969
3	Chancroid	1,073	—	—	—
4	Lympho granuloma venereum	106	5	—	111
5	Genital lesion of non-venereal origin	369	367	26	762
	Total	2,394	1,072	138	3,604

(a) *Males Section*:—203 cases of syphillis evidenced by Dark Field examination and Serological tests were treated in this clinic in the male section from January 1951 to December 1951. During the year, 428 blood samples were sent to the Pathologist and 147 of them were reported positive. Examination under Dark Field Illumination revealed 50 c ases of Treponema Pallida. There could have been many more had it not been for the fact that most of the patients reach the clinic after being treated outside. In most of the cases, the surface of the sore was practically sterile.

The 50 cases whose microscopic examination showed positive T. P. were i mmediately treated by intravenous injections of 0·4 gr mapharside and bismuth intramuscularly. The routine of the clinic is to give 2 injections a week of mapharside and 1 of bismuth every week. It was relieving to note that we had no cases of arsenic dermatitis.

Dark Field positive cases had a definite advantage over others in as much as they were treated practically on admission while the others had to wait till serological report arrived.

32 patients had the benefit of having had a full course of injections. It was not posible to examine the blood of all of them after treatment since they were not available.

2 patients were considered cured since after the injections, they had no symptoms of syphilis and their serological tests were negative.

There were 6 cases of clinically typical cases of early syphilis for whom injections of Arsenic were given, but unfortunately they stopped away as soon as their sores were healed.

From experience at the clinic, it was found that 90 percent of the primary sores healed by the time a fourth injection was given and it was really a difficult task to make the patient realise the after-effects of the disease and most of the patients never cared to have the full course.

Out of 203 cases, 19 were secondary with eruptions. All were immediately treated and blood was sent afterwards, all of which proved positive.

Altogether, 32 patients got a full course of injections each. 10 patients got more than 5 injections each and the rest 145 had only under 5 injections.

(b) *Females Section*:- During the year under report, 1,210 new cases and 5,201 old cases attended the clinic for treatment. Of the new cases, 1,072 were women and 138 were children.

387 women and 99 children were suffering from syphilis and 313 women and 13 children from gonnorrhoea. 5 had bubo and the rest, 367 women, and 26 children had genital lesions of non-venereal origin.

Arsenic and bismuth were the drugs of choice for treatment of syphilis. 7 patients had 0·6 gms. of arsenic and 10 gm. of bismuth each i.e. 20 injections of arsenic and 10 of bismuth which is one complete course of treatment. 43 patients had between 11 and 19 injections each. 4 started the second course of injections after a lapse of 3 months. More than 150 had between 5 and 10 injections. The rest had below 4 injections each.

9 cases had nagative kahn result after the first course of treatment and one after the second course. 2 had doubtful kahn results. Almost all the external lesions disappeared after 3 injections which made them stop away inspite of our repeated advice to continue treatment.

99 children had acetylarsen and bismuth injections. 45 of them had more than 10 injections. On the whole, 2,243 injections were given and 584 specimen of blood had been sent for kahn test.

The Corporation Child Welfare Centres sent 48 cases. 7 of them had poritive kahn and were treated at the clinic. 4 of them brought their new-born infants for treatment.

326 cases of gonorrhoea were treated with penicillin with good result. Sulpha drugs were also used in a few cases. 5 bubo cases were treated with cibazol and local dressing. All of them healed up. 2 cases of bartholin abscess were incised. All the non-venereal cases were given suitable treatment.

The Health Visitor attended the clinic in the forenoons and visited the houses of the irregulars in the afternoons. She advised the patients to continue treatment regularly and also traced the contacts viz., the husbands and children in the houses and advised them to take treatment. Many of them were casual labourers. Hence they were not able to attend the clinic regularly. Every woman who attended the clinic was advised to bring her husband also for examination and treatment. Only a few of them came. 1,071 houses of the patients were visited by the Health Visitor and she was able to persuade 174 cases to continue treatment.

Mrs. Senaputra of the Salvation Army attended the clinic and advised the patients to continue treatment. She also visited the houses of the patients who were found to be irregular. A W.H.O. team consisting of Dr. Guthe and Dr. Jungalwala visited the clinic during the year.

Serological examination of the blood of ante-natal cases was started in the Choolai Maternity Home and Saidapet Maternity and Child Welfare Centre in September and November 1951 respectively. The total number of blood samples examined, the numbers positive, nagative and doubtful, the result of corresponding kahn test and the number of positive cases treated during the year 1951 are furnished in the tabular form below.—

Month	No. of blood Samples examined.	No. of positive cases.	No. of negative cases.	No. of doubtful cases.	Result of corresponding kahn tests	Number treated
1951						
September	35	2	33	—	2	—
October	166	6	157	3	6	4
November	166	8	156	2	5	4
December	235	14	211	10	4	14

Tuberculosis Clinic :

As in the previous years, the Tuberculosis Clinic in Pulianthope concentracted its preventive efforts in the areas under its preventive control viz., Vyasarpady. Choolai, Pulianthope, Perambur Barracks, Sembiam, Ayanavaram, Purasawalkam and Kosapet.

There was a growing awareness among the public for early diagnosis of Tuberculosis as evidenced by the attendance at the clinic and for verifying if they were victims of this fell disease. Out of 7,962 cases examined during the year, 1,332 were Pulmonary Tuberculosis.

Clinical and fluoroscopic examinations were done as a routine measure in all cases. Radiographic examination was done for diagnosis and for periodical check-up of patients after discharge from the hospital.

Laboratory examination of sputum, urine etc., was made in the laboratory in the clinic and the assistance of the Corporation Public Health Laboratory was sought for culture.

The work done at the clinic is detailed in the statements furnished later in the report.

Notification - Every positive case diagnosed at the clinic was notified to the sanitary staff to enable them to take care of the general sanitation of the houses and surroundings of those patients.

Home visits - The Health Visitor of clinic continued to be the link for domiciliary supervision, treatment, after-care and advice on prophylactic

measures in the houses. The Health Visitor, in this respect, had been of value both to the ideals of the clinic and to the numerous poor patients who for want of accommodation in the hospital had to be home-isolated.

Contact Examintion - Contact examination for the detection of early cases was facilitated by the Health Visitor. Through her efforts, a larger number of contacts turned up at the clinic for examination this year. Contacts who do not suffer from active disease were advised to attend the B.C.G. clinic at Ashok Vihar for Tuberculin testing and B.C.G. vaccination, if necessary, and also for periodical check-up.

Treatment: Cases were classified under the following heads:

I. Early cases who needed no hospitalisation.

II. Advanced cases with little chance of recovery.

III. Cases which required very prolonged sanatorium regime and treatment and which, for want of accommodation in the hospital, had to remain in their houses.

IV. Cases which were suitable for out-patient Collapse therapy.

After-care and preventive measures had to be adopted at the clinic in the absence of adequate accommodation either for isolation or for treatment purposes. Facilities for treatment at the clinic appeal most to a patient which in turn forms the first step towards prevention and cure. It was therefore felt that the therapeutic function of the clinic should continue till adequate bed provision is made available.

Organised Home Treatment— The starting of four more clinics in the city under the Tuberculosis Control Programme facilitated a more intensive examination of cases resident within the preventive control area of each clinic. Consequently greater attention and care could be paid to the patients from the control area of each clinic. The greater number of positive cases that could thus be spotted out in the control area of each clinic could be easily kept under careful observation and necessary advice given wherever necessary.

After-care:- The after-care of the patients was entrusted to the Health Visitor who brought the ex-patients to the clinic either for continuing treatment or for periodical check-up of their conditions. It was observed that early relapses particularly among the poor classes were common possibly due to their low socio-economic conditions.

Co-operation with General Practitioners and other institutions:— A good number of patients was from the Buckingham and Carnatic Mills Dispensary for opinion and treatment. Patients from Corporation dispensaries, Health and Recreation Centre (Ashok Vihar), Port Dispensary and Military Dispensary Avadi, were also referred to the clinic for opinion. The general practitioners in the city referred a number of cases to the clinic for opinion and suggestions on treatment.

Admissions to the Corporation Thiruvotteeswarar Tuberculosis Hospital:— A list of patients needing hospitalisation was maintained as in the previous years. Each case was considered on its merits and urgency for purposes of admission into the Corporation T.T. Hospital, Ayanavaram.

Admission to other sanatoria :—Application forms for admission into other sanatoria were filled in whenever so required by the patients.

Economic relief:—12 deserving cases received financial aid of Rs. 20 each per mensem from the City Tuberculosis Association. The total financial assistance thus given amounted to Rs. 960 during the year.

Education :—Education, both at the clinic and outside by the Health Visitor in the houses of the patients, on the various aspects of the disease continued to be a regular feature of the activities of the clinic.

Visitors :—The Statistical Consultant, W.H.O., visited the clinic during the year. He was much interested in the work of the clinic and the work of the Health Visitor in the following up of contacts.

1. *Statement of cases diagnosed*

7,962 new cases were examined at the clinic. 1,396 (i.e. 17·5%) were diagnosed as Tuberculous. Out of these, 1,332 (95·4%) were Pulmonary Tuberculosis.

Number of repeated cases during the year including Tuberculous and non-Tuberculous cases : 41,778.

Table A —Showing the number of cases examined and the number of Tuberculous cases among them during the last 6 years.

Year	No. of cases examined	No of cases diagnosed as T B	Percentage of T B
1946	4,712	644	13
1947	5,900	601	10
1948	7,734	1,189	15·1
1949	9,144	1,640	17·8
1950	9,284	1,630	17·2
1951	7,962	1,396	17·5

Table B : Daily average attendance during the last 6 years

Year	Daily average
1946	65
1947	80
1948	99
1949	140
1950	147
1951	136

II. Statement showing disposal of Pulmonary Tuberculosis Cases

Table A

		1950	1951
P.T. Stage	I	18	23
P.T. Stage	II	6	17
P.T. Stage	III	1566	1292
	Total	1,580	1,332

It was thus observed that a vast majority of cases was in the advanced stage.

Table B: Showing age group

Age		
	1— 5	13
	6—10	7
	11—15	29
	16—20	168
	21—25	285
	26—30	286
	31—35	170
	36—40	163
	41—45	76
	46—50	92
	51—55	22
	56—60	24
	61 and above	7
	Total	1,332

Table C: Regional Distributions

Preventive control area of the clinic.	No. of cases in 1950	1951
Pulianthope	146	152
Choolai	184	234
Purasawalkam	140	86
Perambur	142	218
Sembiam	71	107
Kosapet	22	8
Vyasarpady	32	42
Ayanavaram	32	40

	1950	1951
Total diagnosed at the clinic	769	887
Cases transferred from other clinics	200	299
Total	969	1,186

Positive cases from other areas diagnosed at this clinic

1950	811
1951	445

Table D: Occupation group

1	Attender, Peon, Watchman, Time-keeper, Messenger, Packer etc.	39
2	Barber	8
3	Beedi-worker	36
4	Businessman	24
5	Blacksmith, Mechanic	34
6	Baker, cook etc.	7
7	Binder, Printer	13

8.	Compounder	Nil
9.	Conductor	3
10.	Clerks	27
11.	Thozhilalies, Porters	156
12.	Cultivators	29
13.	Mill thozhilalis	291
14.	Driver-Tram and Engine	7
15.	Dhoby	9
16.	Destitute	1
17.	Fisherman	2
18.	Gold and silvermith	13
19.	Merchant	6
20.	Milkman and ghee vendor	2
21.	Inspector (M. F. S.)	1
22.	Painter	2
23.	Shoe-maker	6
24.	Student	11
25.	Sweeper	10
26.	Teacher	15
27.	Tailor	4
28.	Weaver	19
29.	Housewives	360
30.	Unemployed	201
31.	Plumber	1
	Total	1,332

III. *Laboratory, Fluoroscopic and Radiographic Examinations*

	1950	1951
No. of sputums examined	5,406	5,137
No. of urine specimens examined	64	5
Fluoroscopic examinations	11,796	10,043
No. of radiographic examinations	827	1,141

IV. *Home visits by the Health Visitor and contact examinations*

	1948	1949	1950	1951
No. of primary visits by the Health Visitor	725	897	936	1069
No. of re-visits	769	485	233	205
No. of visits to discharged patients from the hospital	Nil	25	357	298
Total	1,494	1,407	1,526	1,572
No. of contacts examined at the clinic at the instance of the Health Visitor	1,130	1,074	1,208	1,274

On an average 4 contacts per day presented themselves at the clinic for examination.

Table A— Active P. T. cases among contacts :

P. T.	I	22	6	8	12
P. T.	II	3	7	4	1
P. T.	III	12	6	13	22
	Total	37	19	25	35

Percentage of active P. T. cases among contacts during the year was 2·74.

V. Treatment of cases :

1. *Artificial Pneumothorax*

Total number of cases getting A. P. at the clinic	234
No. of cases selected for A. P. at the clinic as outpatient	130
No. of cases getting A. P. as continuation of treatment after discharge from the hospital and from other institutions and patients brought over from the previous year	104

Out of the 130 cases A. P. failed in 6 cases for want of a free pleural space.

In 26 cases, A. P. had to be abandoned at various stages as being contra selective.

54 cases with A. P. were admitted into the hospital in a better condition.

A. P. was abandoned in 18 cases at the end of successful treatment.

A. P. was abandoned in 10 cases at some stage or other on account of complications.

38 cases discontinued A. P. against medical advice.

2. *Pneumoperitonium :*

Total no. of cases who got P. P. during the year	104
No. of discharged patients from the hospital and other institutions and who continued P. P. at the clinic	18
No. of cases for whom P. P. was initiated at the clinic	86
No. of cases admitted in to the T. T. Hospital with P. P.	8
No. of cases admitted into Tambarm Sanatorium with P. P.	2
No. of cases for whom P. P. was stopped at different stages as they were not showing any improvement	13
No. of cases who discontinued P. P. against medical advice	40

The remaining 41 cases continued P. P. at the clinic.

Table A	1949	1950	1951
1. No. of initial A. Ps given at the clinic	129	176	130
2. No. of initial P. Ps given at the clinic	Nil	6	114
3. No. of A. P. refills given at the clinic	1,424	1,780	1,976
4. No. of P. P. refills given at the clinic	Nil	21	1,167
5. No. of aspirntion of fluid	31	64	46
6. No. of air aspirations	2	4	1
7. No. of injections including streptomycin and other injections by the way of symptomatic treatment	750	5,898	5,222

VI. Statement showing admissions to the Hospital:

No. of positive cases diagnosed during the year	1,332
No. of cases put on the waiting list on their first appearance at the clinic	491
No. of cases approved for admissions (including special ward and emergencycases)	203

No. of cases responded and admitted in the hospital	143
No. of cases not responded for admission	49
No. of cases awaiting admission on 31-12-1951 in the approved list	11

Number of admissions into the hospital during the last three years.

1949	1950	1951
140	160	143

Other T. B. Clinics :— A summary of the report from the Co-ordinating Officer, Tuberculosis Control Scheme on the working of the four Tuberculosis Clinics run under the joint control of the Government of Madras and the Corporation of Madras is furnished below:

The four clinics, one each, in the Government Stanley Hospital, Governmentment General Hospital, Government Royapettah Hospital and the Kasturba Gandhi Hospital continued to function during the year. Two Health Visitors were working in each of the first two clinics and one Health Visitor, in each of the other two. From the tabular statement below, it will be seen that a large number of Tuberculosis cases was detected. As mentioned in the previous report, the areas of operation of these clinics were restricted to a contiguous series of municipal divisions to avoid overlapping. The area allotted to each of the clinics was as below:

Government General Hospital Clinic

Katchaleswarar Koil Street, Kothwal Bazaar, Sowcarpet, Periamet, Edapalayam, Park Town, Napier Park and Chintadripet.

Government Stanley Hospital Clinic

New Washemanpet, Royapuram, Singara Garden, Sanjeeviroyanpet, Korukkupet, Basin Bridge. Peddunaickenpet, Seven Wells, Ammen Koil Muthialpet and Harbour.

Government Royapettah Hospital Clinic

Royapettah, Mylapore North, Mylapore South, Teynampet, Thyagarayanagar South, Guindy and Adyar.

Kasturba Gandhi Hospital Clinic

Pudupakkam, Thiruvotteswaranpet, Chepauk, Triplicane, Zam Bazaar and Mirsahibpet.

It is observed that a large number of cases from out-stations also attended these clinics during year.

Preventive work was attended to by the Medical Officers and the Health Visitors by visiting the homes of the open cases of Tuberculosis. Patients and their relatives were advised about the methods of disposal of sputum. Sputum receptacles and disinfectants continued to be provided to the patients. The Health Visitors re-visited the homes of the open cases to ensure the observance of instructions given. From the number of advanced Tubercular cases attending these clinics, it can easily be seen that an isolation hospital is an urgent necessity.

A screening apparatus for the Kasturba Gandhi Hospital Clinic was installed during the year and it is expected that it may be possible to instal another similar unit in the Royapettah Clinic early in 1952.

Statement showing the total number of cases attended to during the year in each of the four Tuberculosis clinics

Particulars	General Hospital	Stanley Hospital	Royapettah Hospital	Kasturba Gandhi Hospital	Total
1. No. of cases registered	3,357	2,642	2,212	1,442	9,653
2. No. of pulmonary T.B. cases	2,457	1,432	611	434	4,935
3. No. of non-pulmonary T.B. cases	182	153	35	83	472
4. No of non-tubercular cases	718	1,219	1,518	893	4,376
5. No. of home visits					
(a) by Health Visitor	903	1,545	1,046	976	4,470
(b) by Medical Officer	423	563	295	288	1,509
6. No. of contacts examined					
(a) in homes	884	1,907	862	593	4,246
(b) in clinic	1,266	1,810	941	713	4,730
7. No. of A. P's done	1,618	115	129	548	2,410
8. No. of P. P's done	681	109	102	772	1,664

B.C.G. Vaccination

The Corporation B. C. G. Team consisting of a Medical Officer, a staff nurse, and necessary clerical assistance continued to function during the year. The clinic in Ashok Vihar was open to the public on all week days from 8-30 A.M. to 10 A.M. after which, the team started on its work in Corporation schools.

As usual, the programme of work of the team was sent to the school concerned in advance and the B.C.G. vaccination was done after obtaining the consent of the parents.

Details of work done by the team were as follows :

Corporation schools :

Total no. of mantoux tested	14,934
Total no. of positive reactors	6,085
Total no. of B.C.G. given	6,499
No. absent for the test	2,021
No. of Corporation schools visited	117

B.C.G. Clinic, Ashok Vihar :

Total no. of mantoux tested	875
Total no. of positive reactors	485
Total no. of B.C.G. given	251

Table A showing Mantoux tests and B.C.G. given figures at B.C.G. Clinic, Ashok Vihar :

Month	Mantoux tested	Positive	B. C. G.
January 1951	79	43	25
February	89	66	13
March	84	44	27
April	58	29	20
May	76	46	25
June	74	39	22
July	95	47	20
August	55	29	13
September	78	43	16
October	60	27	15
November	54	30	24
December	73	42	31
Total	875	485	251

Table B showing Mantoux tests and B.C.G. vaccinated figures for the Corporation schools :

Month.	Mantoux tests	Positive	Negative	B.C.G.	Absentees
January 1951	623	329	196	192	98
February	959	435	364	363	160
March	1,242	420	679	677	143
April & May	307	950	1,126	1,126	231
June	899	246	506	481	147
July	1,554	487	812	803	255
August	1,522	597	762	625	163
September	1,646	784	627	612	235
October	1,002	473	379	372	150
November	1,491	660	521	477	310
December	1,689	704	856	771	120
Total.	14,934	6,085	6,288	6,499	2,021

A consolidated report of the work of the three B.C.G. teams, two sponsored by Government and one by the Corporation, as furnished by the Director, Tuberculosis Institute and Clinics, is reproduced below:

"*Tuberculin testing and BCG Vaccinations for the year* 1951:- Three BCG teams - two of the Government and one of the Corporation - continued to function in 1951. Tuberculin testings and BCG vaccinations were continued to be done among the most susceptible groups, namely children in the primary schools,—both Corporation and private aided-besides the Secondary and High Schools in the city.

Tuberculin testings were also undertaken at Ashok Vihar as well as at the Government Tuberculosis Institute, Egmore, for the convenience of the public. Tuberculin testings among the contacts of patients attending the various tuberculosis clinics in the city and the vaccinations of the non-reactors were undertaken by these teams in addition, during the year under review.

Industrial groups as of the Aluminium workshops, Strathie Co-operative Workshops and Chrome Leather Co., and Technical training groups as of the Instrument Mechanic Training Centre, Central Polytechnic and Defence

Service personnel as the Indian Air Force, Tambaram, and their families have also been taken up during this year.

Tuberculin testings and BCG vaccinations were carried out among medical students and pupil nurses of the City State Hospitals.

It is a pleasure to record that during 1951 the number of testings reached 41,032 giving an average of 3,419 tests a month. The total number vaccinated this year was 14,402 as compared with a total of 11,147 vaccinated during the two previous years 1949 and 1950 taken together demonstrating that the susceptible age groups are being tackled in larger numbers.

In the follow up study of the vaccinated children, it is a pleasure to record that there have not been a single case of untoward complication after the BCG vaccination and no report of any death proved tuberculosis have been reported so far among the BCG vaccinated children.

Education for the BCG Vaccination is not sufficiently being done in this state to popularise the BCG vaccination. With the help of the Central Tuberculosis Association, the teams have been able to educate the public and some literature was distributed to the public through school children and the teachers of the schools. To conduct a full scale vaccination programme with benefit to the public, steps should be taken to popularise BCG Vaccination and it is felt that the Public Health Department must even now start a campaign in moffussil urban areas so as to lower significantly the tuberculosis mortality and morbidity rates of the Madras State.

Mass Radiography Survey in Madras.- The Mass Radiography Unit was taken over in December 1950 and it started work from January 1951. The unit did not work very smoothly and gave us frequent trouble. From the month of August 1951 the set was lying idle for nearly three months as it was completely out of order.

We started our work in the B. & C. Mills and then X-rayed the personnel of Government Transport. In addition, we did the mass X-ray of the public during the Stanley Medical College Exhibition and the Y. M. C. A. Boys Town Carnival. In all, we have X-rayed 14,538 persons as detailed below:

1.	Industrial and transport works	7,965
2.	Public	1,311
3.	High school boys	1,125
4.	Contact of open cases	5,554
5.	General Hospital Nurses and other staff	407
6.	Malabar Special Police	135
7.	Medical students	115
8.	Government Mental Hospital staff	476
9.	Madras City Police	2,000
10.	Jaganathapuram (public)	450

Of the 14,538 persons mass - X-rayed, 2,328 were found to be abnormal shadows. Of these, only 1,174 persons reported for further investigation. Among them, there were 176 active cases. All the 176 active cases were put on the waiting list and only 102 cases were admitted in the hospitals during the year."

Hospitals

Sri Thiruvotteeswarar Tuberculosis Hospital:- This is the fourth year of the working of the hospital and it continued to progress in all ways. The original staff of a Medical Superintendent and an Assistant Medical Officer (both specialised in Tuberculosis) with a nursing staff of one Ward Sister and seven nurses continued.

The accommodation in the Hospital was increased from 62 to 64 beds (62 for in-patients and 2 for emergency cases) during the year. The hospital is well equipped with a laboratory, operation theatre, X-ray plant and other clinical appurtenances. From March 1951 arrangements have been made for taking skiagrams for in-patients at the hospital itself. The hospitalisation and diet were free for indigent patients in the general wards. Patients in general wards with a monthly income ranging between Rs. 100 and Rs. 150 had to pay stoppage charge at As. 12 a day. Special ward patients had to pay stoppage charge at Rs. 3 per diem per head, and diet charge at Rs. 2 per diem. Stoppage charges collected totalled Rs. 21,886-10-0 of which Rs. 484-2-0 were from general ward patients with income between Rs. 100 and Rs. 150.

8 Government servants were admitted during the year.

10 patients were admitted for emergency with symptoms of Haemoptysis and for spontaneous Pneumothorax and 42 patients were admitted purely on public health grounds for isolation i. e. 13 in General Wards and 29 in Special Wards.

There were 58 patients at the beginning of the year. 143 admissions were made during the year. The total number of discharges including deaths (5) during the year was 144 leaving 58 patients at the end of the year (44 indigent patients and 14 special ward patients.)

Daily average number of patients treated during the year:

1.	General wards	47·7
2.	Special wards	13·4
		61·1

The particulars of the 143 admissions are as follows:

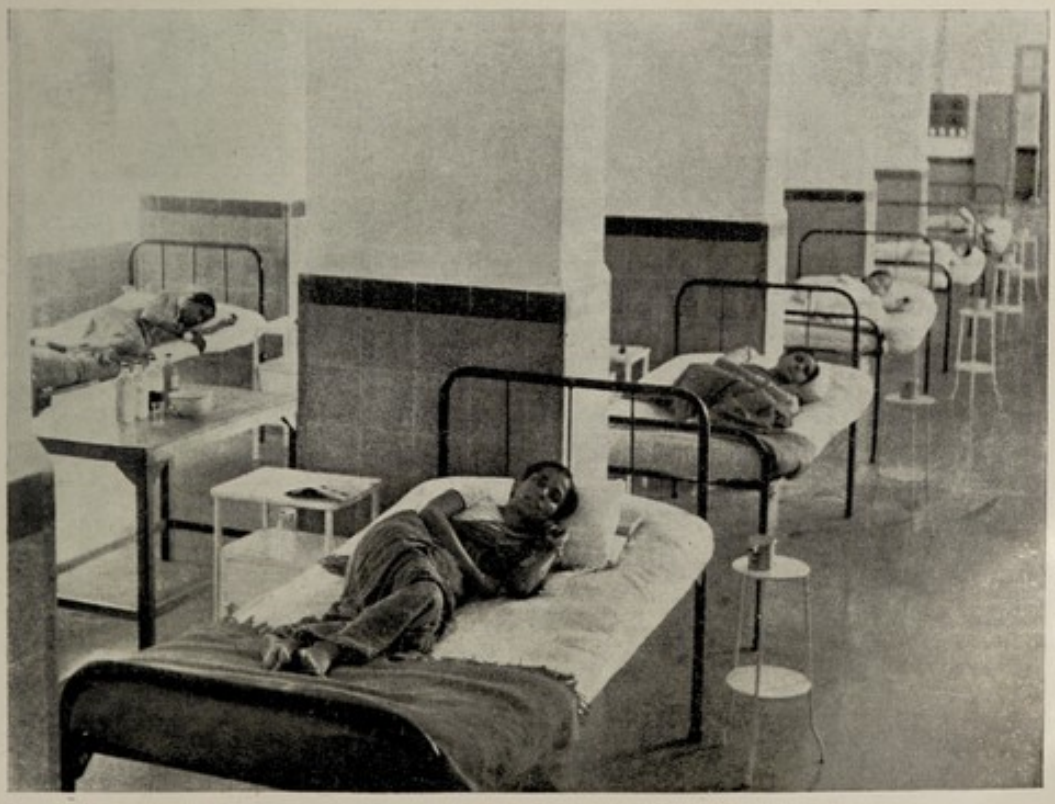
Males	97
Females	46

Age distribution:

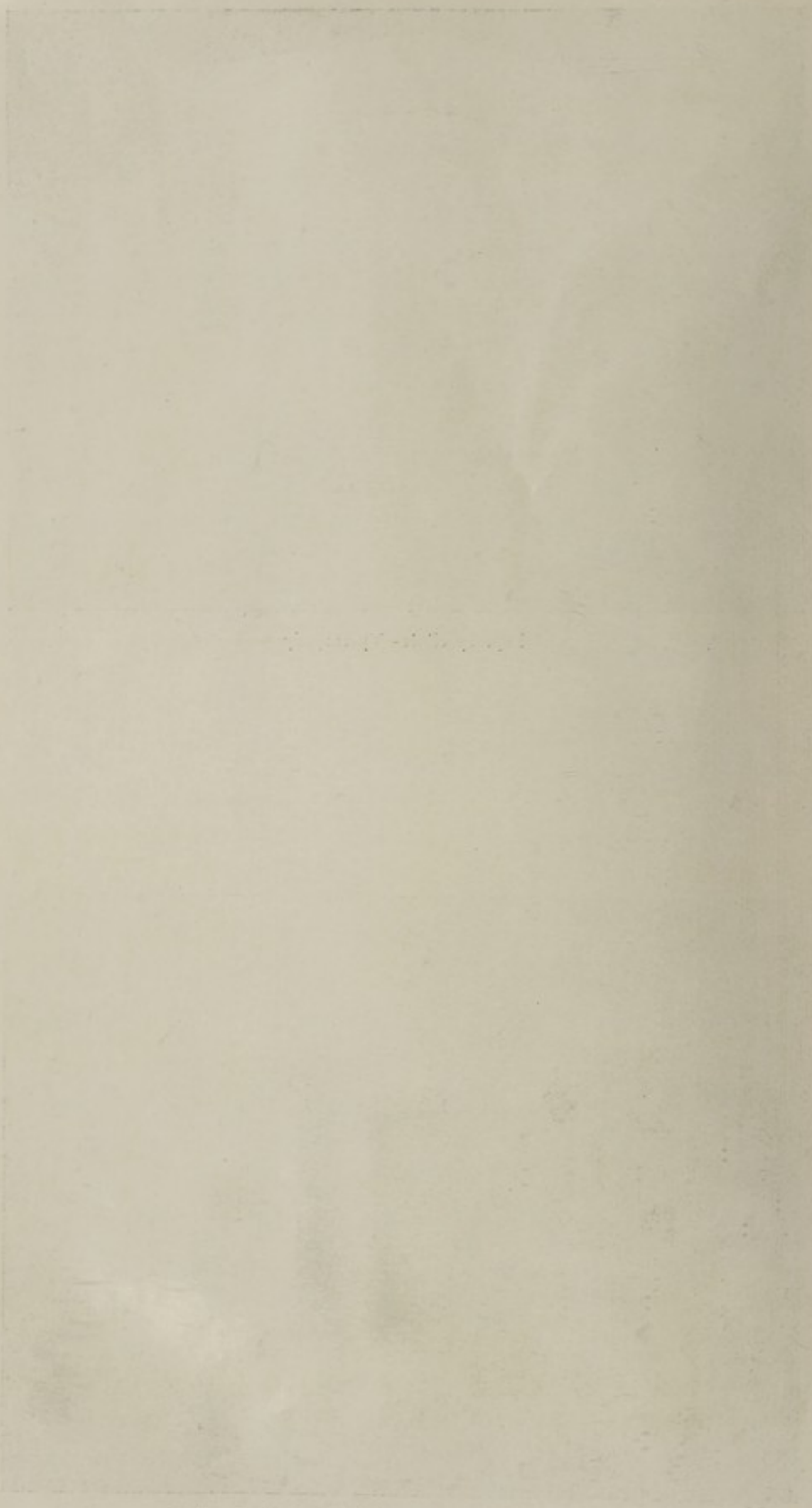
Age groups	Males	Females	Total
0 to 4 years	—	—	—
5 to 14 „	—	—	—
15 to 24 „	30	22	52
25 to 44 „	61	22	83
45 to 64 „	5	2	7
65 and above	1	—	1
Total	97	46	143

Classification of discharged cases:- Classification of the stage of disease and results adopted here are based on the recommendations of the Tuberculosis Association of India. Out of the 144 (including 5 deaths) patients discharged during the year, 143 were Tuberculous cases and 1 a non-tuberculous case i. e. lung abscess treated and cured.

Leprosy clinic—Vyasarpady



Ward in Sri Tiruvotteeswarar Tuberculosis Hospital



1. *Type and stage of disease of Tuberculous cases*

Pulmonary Tuberculosis	Stage I	Stage II	Stage III	Total
(a)	3	4	18	25
(b)	2	3	39	44
(c)	-	4	70	74
Total	5	11	127	143

Out of 143 tuberculous cases discharged during the year,11 patients stayed for periods less than one month, and have been excluded from consideration for purposes of noting results of treatment. It will be seen that 127 cases or 88.8 per cent of the admissions were in the III stage of the disease. 143 discharges shown above includes 5 deaths of which 4 are taken into the statistics and 1 death is left out as the period of stay of this 1 case in the hospital was less than a month.

2. *Results of Treatment*:-

	Stage I			Stage II			Stage III			Total
	a.	b.	c.	a.	b.	c.	a.	b.	c.	
Quiescent	...	...	...	...	...	...	...	...	1	1
Much improved	1	...	...	3	2	2	4	15	7	34
Improved	1	2	...	1	.	2	12	16	35	69
Stationary	1	...	...	...	1	...	1	5	15	23
Worse	...	...	...	...	...	...	...	...	1	1
Died	...	...	...	...	...	...	...	1	3	4
Total	3	2	...	4	3	4	17	37	62	132

Of these 132 cases, 104 or 78·8% had positive result of treatment, 90 of these were in the III stage, 10 in the II stage and 4 in the I stage.

Surgical Treatment

Artificial Pneumothorax:-

(a) No. of cases in which it was tried - Right side 18
Left side 17
Total 35

(b) No. of cases in which it was successful - Right side 13
Left side 13
Total 26

(c) No. of cases in which it was unsucessful-Right side 5
Left side 4
Total 9

(d) Bilateral A. P. was attempted on 2 cases both of which were successful and it was continued.

(e) No. of cases in which A. P. was started outside prior to admission to this hospital. 49

(f) Total no. of patients who received A. P. treatment 113

(g) Total number of refills given 1,353

2.	Apiration of fluid done	105	times
3.	Apiration of air done	16	times
4.	No. of cases in which Pneumoperitoneum was given	1,046	refills
5.	No. of cases in which initial Pneumoperitoneum was given	43	
6.	Thorascopy and cauterisation of adhesions	43	
7.	Phrenic paralysis	20	

Medical Treatment

1.	Streptomycin : No. of cases treated	31
2.	Para Amino Salicylic Acid Treatment	64
3.	Conteben	4

X-Ray Work

1.	No. of Fluoroscopic examinations done	2173
2.	X-Ray skiagrams taken in the hospital	375

Tubercle Bacilli

Of the 143 cases discharged, Tubercle Bacilli were found in sputum on admission in 130 represents 90·9 % of the admissions. In 102 cases or 71.3% of these, Tubercle Bacilli disappeared before the patients left the hospital and sputum was negative. (42 negative for T. B. by culture, 42 negative by concentration and 18 negative by smear).

67 sputum samples were sent for culture during the year.

Laboratory Work

1.	Motion-routine examination		176
2.	Urine examinations	Routine	197
		Albumin	139
		Sugar qualitative	1,630
		Sugar quantitative	981
3.	Sputum for A. F. B,	Smear	2,115
		Concentration	274
		* Culture	67
	* (at Corporation Public Health Laboratory)		
4.	Blood examinations	Differential counts	875
		B. S. R.	853
		For M P.	23
		Index	286
5.	Examination of Pleural Fluid for Tubercle Bacilli		27

Complications

1.	Obliterative Pleuritis	1
2.	Empyema	2
3.	Effusion on A. P. side	20
4.	Intestinal Tuberculosis	15
5.	Haemoptysis	8
6.	Coloured sputum	6
7.	Ascariasis	4
8.	Diabetes	6
9.	Tracheo Bronchitis	7
10.	Laryngitis	7

11.	Kalaazar	1
12.	Perianal Tuberculosis	2
13.	Contralateral spread of disease	4
14.	Secondary anaemia	6
15.	Pregnancy	4
16.	Glands	5
17.	Lung Abcess (Primary)	1
18.	Fits (Epiteptic)	2
19.	Dry Pleurasy	2
20.	Scabies	1
21.	Malaria	2
22.	Eczema	2
23.	Jaundice	1
24.	Filariasis	2
25.	Bilat. Effusion with A. P.	2
26.	Abortion	1
27.	Bed sore	1
28.	Otitismedia	1
29.	Tonsillitis	1
30.	Haemorrhoids	1
31.	Unibilical Hernia	1
32.	Abscess thigh	1
33.	Peripheral neuritis	1

Infectious Diseases Hospital

There were 201 cases in the hospital at the commencement of the year. 9,358 patients were admitted during the year, 719 of them being from Chingleput District.

There were 1,054 deaths, the mortality rate being 11. Details are found in the appendix.

Small pox.- There were 88 cases in the hospital at the commencement of the year. 2,546 cases were admitted during the year, of which 217 were from Chingleput District. 472 died. The mortality rate was 18.

Cholera.- 1,215 patients from the city and 227 from Chingleput District were admitted during the year. There were 33 patients already on 1-1-1951 1,212 were discharged cured. 216 died. The mortality rate was 14·6

Public Health Laboratory

Since its commencement in 1946, the Public Health Laboratory has been rendering useful service to the citizens. Its activities have been expanding year after year. The following figures furnish an idea of the rapid growth of the laboratory since its inception.

Year	No. of samples examined	Receipts Rs.
1946	311	215
1947	1492	647½
1948	5642	1635
1949	12266	4766
1950	16396	10939
1951	19005	11234

During the year, the UNICEF donated to the laboratory a field survey unit for the VD control programme and penicillin for the treatment of antinatal cases, nursing mothers and children with venereal disease. Part of the equipment was received on the 27th September 1951 and the modified Menicke test for the diagnosis of syphilis in addition to kahn test is now being carried out.

A few vials of penicillin supplied during 1951 were used for the treatment of VD positive cases.

The following statements indicate the details of work done at the laboratory during 1951 :

I Statement showing details of various types of examinations on samples of blood, urine, sputum & etc. received at the Laboratory during 1951

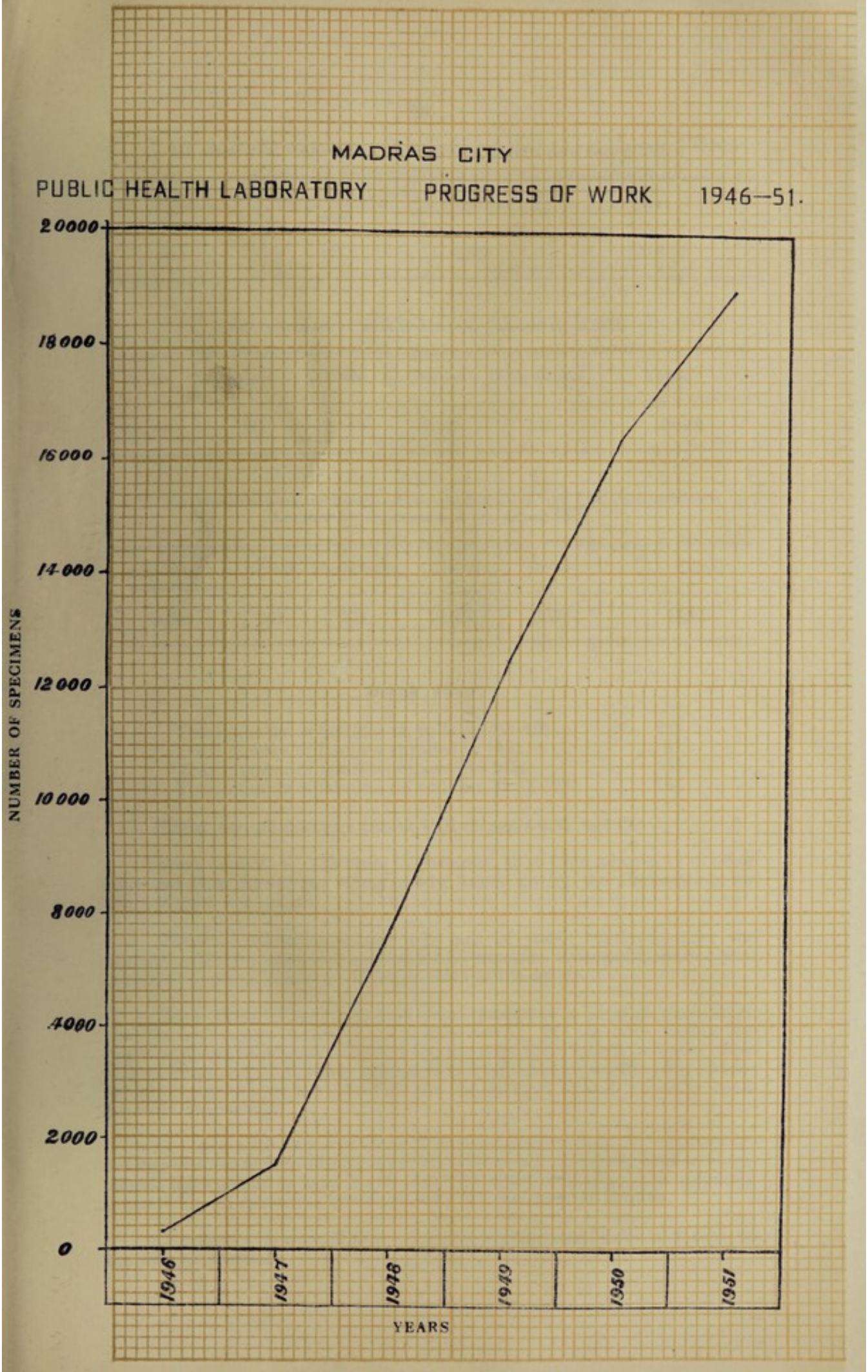
No of total R.B.C. count	No. of total WBC counts	No. of Hb%	No. of Bl. smears for diffrl. counts	No. of Bl. smears for M P	No. of Bl for Gel test	No. of Bl for chopra test	No. of Bl. for B.S.R	No. of Bl. bleeding time	No. of Bl. coagulating time
1	2	3	4	5	6	7	8	9	10
942	1,113	1,786	6,463	312	146	136	185	10	9

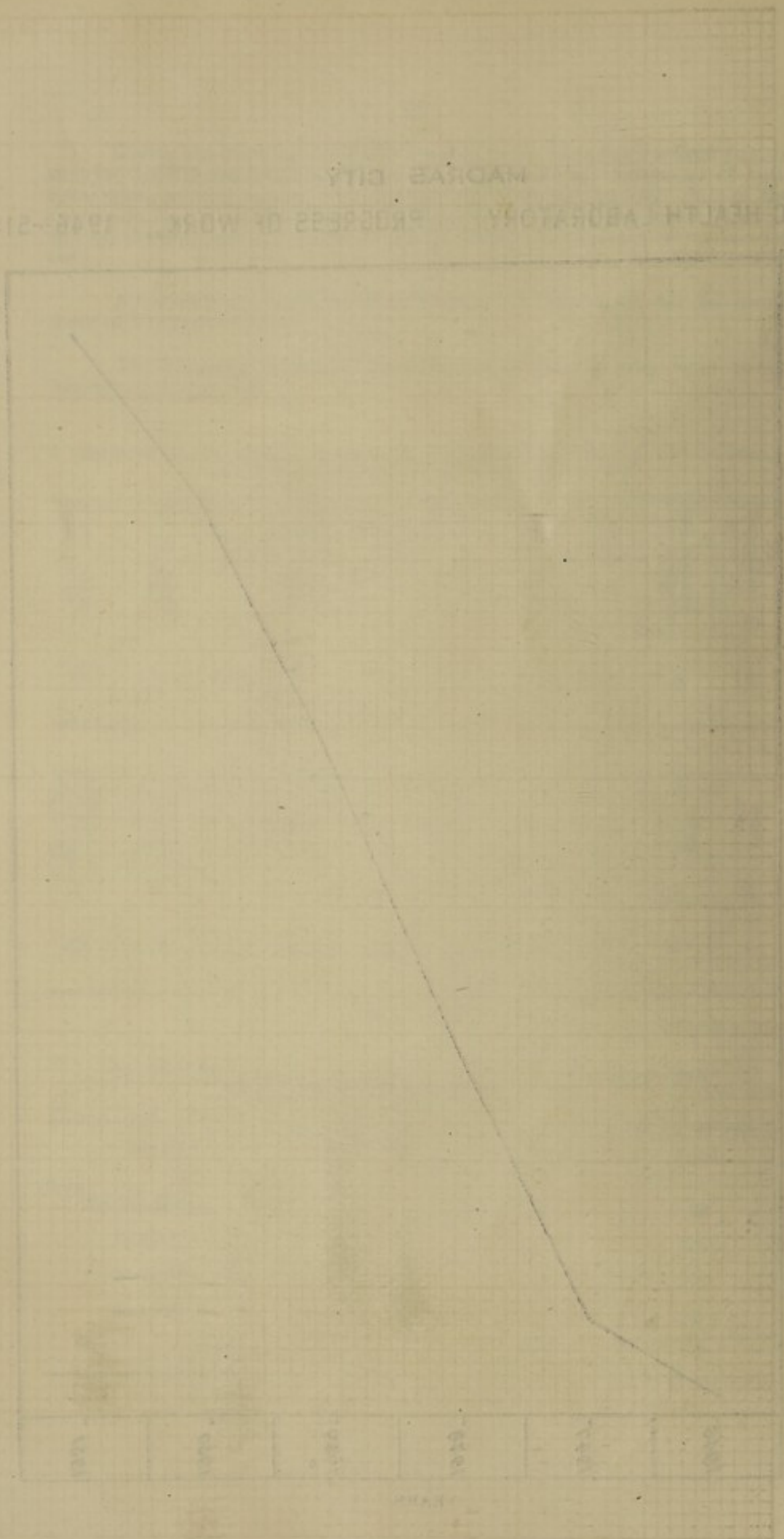
No. of Bl. Thrombocy e counts	No. of Bl. Recticulocyte counts	Ear Puncture smears for lepra bacilli	Bl smear Exam.	SputumExam for T.B.	Urine for Exam	Urine for Sugar%	Motion for Exam	Cx. smears for Exam	Urethral smears for Exam	Volume index
11	12	13	14	15	16	17	18	19	20	21
2	2	16	550	1,941	1,961	110	2751	14	10	4

Total ... 18,462.

II. Statement showing the Menicke test UNICEF. W. H. O's team (from 27th September 1951 to 31st December 1951)

Month	No. of cases Positive	No. of case negative	Total
From 27th September	1	27	28
October	8	147	155
November	8	151	159
December	11	190	201
Total	28	515	543


MADRAS CITY
PUBLIC HEALTH LABORATORY PROGRESS OF WORK 1946—51.
20000
18000
16000
14000
12000
10000
8000
4000
2000
0
NUMBER OF SPECIMENS
1946
1947
1948
1949
1950
1951
YEARS



III Statement showing the no. of serological tests done during 1951

No. of positive cases	No. of doubtful cases	Negatives	Total
533	152	2,523	3,208

IV Statement of work done at the Laboratory in 1951

Blood	Sputum	Urine	Motion	Other smears	Total
11,645	1,941	1,961	2,757	158	18,462

V Statement showing the details of the specimens received from various clinics Corporation dispensaries & etc. during 1951

Private practitioners	C.W.C. Dispensaries	Clinics	Others	Total
14,083	591	739	1,077	1,972	18,462

Ashok Vihar.

Total number of families on rolls on 1-1-1951	258
Total numbes of families enrolled in 1951	61
Total number of families removed in 1951	55
Total number of families on rolls on 31-12-1951	264

There were 55 deletions during 1951 as against 97 in 1950.

Social contact :— 113 visits to Periamet, 53 to Chintadripet, 19 to other areas and 45 to the various slums newly taken up by the Corporation for improvement were made.

The main problem continues to be lack of stable employment for the members. Employment was secured for 13 members. 4 women members were employed as casual labourers in the canteen at the centre.

Naval Hospital area and Cox Cheri presented a cleaner appearance after the improvements carried out in these areas. We are now finding the residents taking more interest in keeping not only their houses but also their surroundings clean. Epidemics of small-pox and cholera which were predominant in these slums have more or less disappeared though sporadic cases occurred occasionally.

A comparative study of about 50 member-families and 50 non-member-families was made with special reference to personal, domestic and environmental hygiene and it was found that the member-families had definitely improved in all spheres as compared with the non-member families.

Members who were ill were contacted at their residences and sent to the various hospitals.

Creche

Total number of children on rolls as on 1-1-1951	69
Total number of children admitted during the year	41
Total number of children removed	40
Total number of children on roll as on 31-12-1951	70

Reasons for removal were as under :

Admission into schools	17
Change of residence	5
Migrated to village	3
Mother found not working	4
Admitted in the Children's Aid Society	1
Admitted in orphanage	1
Failure to undergo health overhauls	1
Deaths	8

Causes of Deaths :

Severe malnutrition	4
Measles	4

Attention to personal hygiene, balanced diet, nursery education, recreation and medical care were given to all the children in the creche. Most of the children on admission were suffering from malnutrition and they took nearly one year to come to normal health. An average of 6 pound increase in weight was noted in the children for a period of one year. Worm infestation was treated in 58 children.

B. C. G.

Total number examined	26
Mantoux positive	5
Mantoux negative	21
B. C. G. Vaccinated	21

Primary vaccination was done for 9 and re-vaccination for 50, cholera inoculation for 54, T.A.B. inoculation for 49 and whooping cough vaccination for 22 children.

Mothers' meetings were held periodically and short talks on health matters such as the value of preventive inoculations, family planning, children's diet, sleep, clothing, cleanliness, education etc., were given.

Women's Section: The average number of women members attending the section were 25 on week days and 40 on holidays.

The following handicrafts were taught :

1. Spinning
2. Crochet and knitting
3. Garment cutting and mending
4. Palm leaf work
5. Rag-doll making

The following articles were made during the year :

1. Table cloths	7
2. Underwear	7
3. Baby garments	5
4. Handkerchiefs	17
5. Pillow cases	8

6.	Jackets for the girls' section	46
7.	Button stitching for garments	47
8.	Uniforms mended	375
9.	Cushions	2
10.	Bed-sheets for the creche	60
11.	Twine bags	4
12.	Pin cushions	2
13.	Rag dolls	2

In addition, the members brought their own cloth to make garments with the help of the sewing machine.

Embroidery, crochet work and palm leaf work were also taught. The members were also taught how to make sandhu, appalam and sambar powder. The members themselves took commendable interest in learning the preparation of a few sweets at the canteen.

Education : Members were taught to read and write common words in their mother-tongue. 5 were taught Hindi.

Recreation : They were chiefly interested in indoor games like chokkattan, snakes and ladders etc. A number of women took part in the annual sports held.

Girls' Section :

Total number of girls on rolls as on 1—1—1951	230
Total number of girls admitted during the year	27
Total number of girls removed during the year	23
Total number of girls on rolls as on 31—12—1951	234

The average daily attendance was 57 on week days and 62 on holidays.

Daily attention was given to

1. Personal Hygiene
2. Education
3. Hand work
4. Music and dancing
5. Recreation

There was a general improvement and keen interest among the girls to keep themselves clean and tidy. Most of them showed keen interest in music and games. Dancing was taugt to those interested.

Hand work and needle work : 6 were taught hem-stitch, chain stitch and sewing. A table cloth with embroidery work was completed and presented to Lady Nye.

Leadership : Group system was started, dividing the girls into seniors, juniors and sub-juniors and leaders were selected to be in charge of each of these divisions. The responsibility of maintaining discipline, order, personal hygiene, music and recreational activities was left to their care.

Recreation : 29 girls were found to be interested in skipping and 12 girls in lazeem drill. All of them enjoyed free play very much. Mass drill and athletic events were also held from time to time.

Talks: Moral instruction classes were held once a week and talks were given.

Boys' Section

Total number of boys on rolls on 1—1—1951	259
Total number of boys attending schools	175
Total number of boys not attending schools	84

The average daily attendance was 40 on week days and 65 on holidays.

The boys were given training in mass drill, military parade and guard of honour. They also took part in the various entertainments and dramas enacted by the members of the centre.

Story-telling was an interesting item always liked by the boys. A number of story books in Tamil and Telugu received from the Education Department were given to boys for reading.

The boys showed great interest in football among the out-door games and in carrom among the in-door games. Group games were encouraged. Two teams competed in the Mayor's Cup Football Tournament conducted for the boys in the slum areas. One of the boys of our team was awarded a special silver medal for distinguishing himself as a good player. Boxing was a regular feature. Annual sports was conducted in track and field events at the Stadium grounds during the anniversary celebrations and prizes were awarded.

The boys were taken frequently on excursions to places of interest in and around the city.

Men's Section

The average daily attendance was 50 on week days and 75 on holidays. The number of men on rolls on 1—1—1951 was 338.

The members played volley ball, badminton, hockey and football regularly. Table-tennis attracted a good many of the members. Friendly matches in in-door and out-door games were also arranged with outside teams in the city in many of which our teams came out successful. Training in boxing was given to our men and one of the memberss participated in the 15th Indian Olympic Meet in boxing tournament and won.

Periodical talks on the value of health check - ups, importance of physical education, family economy and citizenship were given.

The men's section had a dramatic troupe consisting of actors, musicians etc. Dramas and entertainments were arranged for on festive occasions.

A binding section was newly started this year with a view to train the members in some remunerative handicraft. Book-binding, envelope-making, file-pad-making and various kinds of stitching used in binding work were taught.

Health Overhauls
Examinations.

	1st.	2nd.	3rd.	4th.	Total
General	413	344	153	12	922
Dental	401	335	134	17	887
Eye	359	324	128	10	818
E. N. T.	406	345	118	18	887

Diseases more commonly met with were chiefly deficiency diseases and the resulant disorders arising out of them. The blood pressure uniformly recorded very low systolic and diastolic pressures. Malignant diseases in any form was not seen among these people.

Pathological Examinations

Blood	76
Blood kahn	45
Blood culture	1
Urine	62
Urine culture	2
Motion	29
Sputum	27
Cervical smear	6

Screening of chest was done for 43 persons of which 9 were positive.

Number of patients sent to the various hospitals

Government General Hospital	72
Government Stanley Hospital	6
Government Hospital for Women & Children	9
Government Opthalmic Hospital	6
Corporation Tuberculosis clinic, Pulianthope	43
Corporation Venereal Clinic	1

At these hospitals, some were treated as out-patients and others as in-patients.

Maternity Section

Number of cases on 1-1-1951	10
Number of cases ante-natal booked during 1950	76
Number of cases delivered at Ashok Vihar	50
Number of cases delivered at Corporation Child Welfare Centres, and Government Hospital for Women and Children	10

Ante-natal morbidity

Vitamin B deficiency	23
Anaemia	17
Heart disease	3
Pre Eclamptic toxaemia	2
Ante partum haemorrhoage	1
Jaundice	1
Syphillis	1
Bronchial asthma	1

Natal and post-natal mobidity :

Perineal tears	3
Ante-partum haemorrhoage	1
Pre Eclamptic toxaemia	1
Hydramnios	1
Post partum haemorrhoage	2

Babies

Full term	54
Premature	2
Still-birth	1
Neo-Natal mortality	2
Foetal abnormality	1

Dispensary

About 9,200 cases were attended to.

Canteen

	Rs.	A.	P.
Total receipts during the year	2,459	14	0
Totol expenditure during the year ...	2,413	0	1

Auditorium

123 film shows were arranged during the year. We are much indebted to the British Information Services, the United States Information Services and the British Council for lending their films for screening at the centre for the benefit of the members.

General

All festive occasions were celebrated with entertainments and distribution of sweets to children. During the Dasara week, dolls were arranged in the girls' section. There was music and dance by the girl members daily. Under the auspices of the Guild of Service, about 60 of our children were given a treat on the Republic Day. On the death anniversary day of Mahatmaji, all the members went in a procession to the Rajaji Hall and took part in the non-stop bhajana.

A drama entitled 'Prema B.Sc.' was enacted by the men members at the Kala Mandir, S.I.A.A., during the Park Fair and Exhibition conducted during December 1951. The Corporation band enlivened the members periodically with music. Children's Day of the W.H.O. was celebrated with a talk on "Health for your Child and the World's Children" followed by film shows.

Three children were admitted in Bala Mandir and 4 were admitted in the Children's Aid Society.

Employment was provided for 7 men members and 2 women members and all the unemployed members were made to register their names in the Employment Exchange. Two members passed their Intermediate and two their B.A. degree examinations.

65 members were re-vaccinated against Small-Pox and 150 inoculated against cholera. A private savings campaign was started to encourage and promote thrift among the members. About 60 members put by their savings.

During the early part of the year, the members were taken to the following places :

(1) Mahabalipuram (2) Sadras (3) Marina (4) Thiruvottiyur (5) Broadway Creche (6) Varadarajulu Naidu Home, Tondiarpet (7) Government Leather Technology Institute (8) Iyanavaram Milk Depot (9) Government Glass Factory (10) Service Home, Royapuram (11) Thirukalikunram and (12) Kovalam

Visitors

The following persons visited the centre during the year:

Mrs, S.D. Sundaram, Kulalumpur. Malaya.

Lady Collen Nye.

Drs. M. S. Kini and M. B. Prabhu.

A group of visitors representing U.S.A. England, Malaya, Mexican Congo and Belgian Congo who were on a tour to India.

Mr, H. K. Mitra, Representative and President of Rotary International Conference held at Madras.

Dr. Sushila Nayar.

Dr. L. Verhuertroeli, Chief, Maternal and Child Health Section. W.H.O., Geneva.

Mr. Thakin Tin, Ex-Minister for Agriculture and Forests, Burma.

Mr. M. R. Varachia, Secretary, South African Cricket Board of Control.

Mr. Gordon P. Hagberg, Information Officer, U.S.I.S.

Mr. B. Ladtman, W.H.O., New Delhi.

Mr. K. Mukerjee, Minister for Labour, Government of West Bengal.

Mrs. Margaret Garner, Office of the Deputy High Commissioner, New Delhi

Dr. S. K. Siddoo, Toronto, Canada.

Dr. I. K. Siddoo, Toronto, Canada,

Mr. R. Forbes Adam, British Council, England.

Prof. Jen-lan-Shin, China.

Mrs. Chester Bowles.

Mrs. and Mr. V. N. Pillay, South Africa.

Besides these, several local institutions, social service organisations and the medical college students visited the institution during the year.

Donations: Thanks are due to Mrs, and Mr. Moorhead and their family for their contribution of kakhi and crepe worth about Rs. 200 for uniforms for the boys and girls of the centre and a table-tennis set for the use of the members and to the Guild of Service, Madras, for their contribution of a sum of Rs. 20 towards Christmas celebrations.

Medical Inspection of Corporation Schools 1951-52.

Staff: Four Medical Inspectors and three Medical Inspectresses continued to work during the year.

Routine of work: Out of 233 schools, 102 schools were visited and and medical examination of children conducted. Treatment was given to the defective children. The total number of childeren on roll in all the schools was 47,536 boys and 24,097 girls. There were 17,776 boys and 15,080 girls on rolls in the 103 schools visited. The average attendance in the schools inspected was 13,707 boys and 12,039 girls. 13,901 boys ond 13,063 girls were examined during the year. 5,615 boys (40·32%) and 4,447 girls (34·04%) were found defective and in need of treatment.

Personal hygiene: 982 boys (7·06%) and 156 girls (1·19%) were dirty in their person and clothing. They were advised to bathe in such of the schools where water was available. Attention was continued to be paid to the teaching of personal hygiene in the classes. Children having skin complaints were given treatment.

Malnutrition: 2,360 boys (16·98%) ond 1.942 girls (14·87 %) were undernourished as against 15.53% and 16.35% respectively in the previous year. Shark liver oil and calcium lactate were given to them for improving their condition. 1,599 boys (11·50%) and 469 girls (3·59%) had dental and oral complaints. 812 children had stomatitis and were treated at the schools with benefit. 76 children had their caries teeth extracted. 1,639 had enlarged tonsils and received appropriate treatment. 15 of them had their tonsils removed by operation for gross infection. 2 had their vision corrected by glasses. (Others having defects in a minor degree improved by a course of vitamin oil). 103 children received treatment for discharge from the ear. 5 were defctive in hearing and were provided seats near the teacher. 4,888 children had courses of vitamin oil and calcium lactate in the schools. 795 having stomatitis and other allied defects of nutritional origin were given yeast.

Circulatory and respiratory diseases: 104 boys (0·75%) and 172 girls (1·32%) had defects relating to heart and blood. 195 anaemic children improved by treatment. 27 had enlarged spleen due to malaria and they were suitably treated.

Diseases of bones and joints: 954 children had deformities of chest due to rickets in childhood. 12 had infantile paralysis and functional disorders of nerves. All of them received suitable treatment.

Infectious and contagious diseases: 858 boys (6·17%) and 910 girls (6·97%) had intectious and contagious diseases, the correspondi[n]g percentage for the previons year being 11·72 and 6·87 respectively. 1,108 children were suffering from scabies. 848 had signs and symptoms of Hansen infection in early stages. All of them received treatment. There was good improvement in most of them.

General preventive work: 6,388 children were re-vaccinated in the schools by the Medical Inspectors. 11,714 were inoculated against cholera and 1,307 against typhoid.

Other diseases and defects: 13 children underwent operation for phimosis.

Medical Treatment: A major portion of the defects related to malnutrition and vitamin deficiencies due to poverty. They were all treated at the schools with the assistance of the teachers. Midday meal, vitamin oil and calcium lactate were given to them. 210 such children selected from 7 different schools received the contents of CARE-food packages for a period of 5 months. 6,890 children having minor ailments were treated at the schools. 1,320 were sent to Corporation Dispensaries for treatment of ailments that could not be attended to at the schools. 1,050 were sent to Government hospitals for treatment of more serious ailments.

Re-inspections: 305 re-visits were paid to schools after the routine visits for treatment and re-examination of the defectives. 13,013 children were re-examined during these re-visits.

Co-operation of parents and teachers.—1,890 parents of children were present at the schools during the inspection and treatment of their children. The details of medical attention bestowed on their children were explained to them and their co-operation sought. The school staff made effective arrange

ments for the treatment of the ailing and good results were noticed. Special attention was bestowed on the treatment of children suffering from Hansen's disease.

School sanitation: The sanitary defects regarding accommodation, ventilation and sun-light, latrine, playground and water supply were pointed out in regard to the schools inspected and suggestions were given to remedy them.

Midday Meals: 9,471 children in 167 schools situated in poor localities were provided with midday meals on school working days. 22 children in the nursery classess also received food. The Medical Inspectors supervised the arrangements made for distribution of the food. In addition to all these, 210 ill-nourished children from 7 schools were given the contents of CARE-food backages for a period of 5 months. The supply consisted of cheese, butter, reconstituted milk and dry beans. The beans were boilled, salted and flavoured with butter before distribution. Many of these children were benefited.

Health Education: 135 lectures and 187 talks on health subjects were arranged in the schools. The total attendance at these gatherings was 14,946.

The report on the administration of contents of CARE food packages to children in Corporation Shools as furnished to Government is reproduced below:—

"200 packages were received by the Corporation for distribution to the school children. It was proposed to give them to the most deserving of the ill-nourished children and assess the benefits. Each packet contained the following:

1	Skimmed milk power	10 lbs
2	Dairy butter	5 lbs
3	Cheddar cheese	4 lbs
4	Dried pea beans	5 lbs

Seven Corporation schools, 4 boys' schools and 3 girls' schools, were selected as per list given below:

S. No.	Name of school	Total no. of working days during the period	Average Attendance
1	C. B. S., Karuppannan St., George Town	51	28
2	C. G. S., Nattu Pilliar Koil Street	46	27
3	C. B. S., Gangadareswaran Koil Street	52	26
4	C. G. S., Kandappa Mudaly St., Puraswalkam	52	27
5	C. B. S., Venkataramgam Pillai St.,	53	26
6	C. B. S., Thyagarayanagar	49	26
7	C. G. S., Brodies Road, Mylapore	52	26

30 children were selected in each school making a total of 210 for extending the benefit. The supply available was divided to last for 90 working days for these children. The ages varied between 6 and 13.

Each boy or girl received the following quantities of food on all full school-working days.

S. No.	Nature of food given	Quantity given per a boy or girl	Manner of distribution	Time of distribution
1	Dried skimmed milk	1·2 oz	Reconstituted before distribution	Between 2-30 and 5-30 p.m. on full working days. (5 days in the week).
2	Salted butter	0·6 oz	Taken raw	
3	Cheddar Cheese	0·5 oz	Cut into small pieces and taken with onion chips	
4	Dried pea beans	0·6 oz	Soaked in water previously and boiled the next day. Again fried with butter salt and spices to improve flavour and taste	

The report covers a period of three months between 15-10-1951 and 15-1-1952. The number of actual working days on which the food was given varied between 53 and 46 in the seven schools. The actual number of working days and the average number present in each school are given against each school.

In addition to the 30 children, 8 children were kept as reserves es replace any absentees from the regular list. The Head masters were entruco ted with the work of preparing and distributing the food under the guidant- of the Medical Inspectors. The recording of height, weight and general condition was done by the latter.

The first examination and recording was on 15-10-1951 and the last now taken into consideration was on 15-1-1952 covering a period of three months, the number of working days varying in each school.

During the period some replacements were necessitated due to certain children leaving the school for good. In certain cases the parents were unwilling to allow their children to take the food after some days. But these replacements were not many and did not exceed 8. 24 children attended all the working days on which food was given. The rest were absent for varying periods.

The average gain in height worked out to 1·14 inches. Similarly the average gain in weight worked out to 5·53 lbs. Details of increase in weight were as follows:

9	children	gained	6	lbs.	in weight
8	"	"	5	"	"
23	"	"	4	"	"
43	"	"	3	"	"
42	"	"	2	"	"
36	"	"	1	"	"

In 37 children, there was no increase in weight. In the rest of the children, the increase in weight was in fraction of a lb. In seven, there was reduction in weight ranging between 1 and 2 lbs. due to temporary causes—illness.

The details of increase in height cannot be said to be very accurate in the absence of the mechanical device. The figures as received have been worked out and the results are given below:

In 1	child	the increase in height was	4 inches.
In 4	children	the increase in height was	2·5 inches
In 2	,,	,,	2·0 ,,
In 6	,,	,,	1·5 ,,
In 46	,,	,,	1 ,,
In 4	,,	,,	0·75 ,,
In 49	,,	,,	0·50 ,,

In 99 children, there was no increase in height.

No appreciable effect could be noticed in the vitamin deficiency conditions while good improvement was noted in their general health. They looked more sprightly and active."

Sanitation

General: Dr. S. E. D. Masilamani continued to be the Health Officer during the year. For a period of nearly 5 months from 21-3-1951 to 16-8-1951, he was out of India on a W. H. O. Fellowship and on leave for 4 months from 27-8-1951 to 25-12-1951. He represented the Corporation at the Health Congress at Southport in April 1951. During the entire period of his absence, his senior-most Assistant, Dr. G. Srinivasan, acted in his place.

The Health Administration of the city was in charge of the Health Officer and he was assisted by the five assistant officers. There were 56 Divisional Sanitary Inspectors each in charge of a difinite area. 6 of the municipal divisions, which were too unwieldy for effective inspection were each placed in charge of two Sanitary Inspectors.

Sewers and F. O. Ls: Sewere laid to a length of about 12½ miles during the year as detailed in the statement appended. 1,849 F.O.Ls were contructed departmentally and 722 by the parties themselves. 382 Public conveniences were in use during the year. 9 were under construction on 31-12-1951

Housing:—Inspite of a fairly sizeable increase in the number of houses constructed during the year, the problem of housing continued to prove difficult. The provisions of the Madras City Municipal Act had to be enforced in the case of houses which were found defective from a sanitary point of view.

The Sanitary Inspectors inspected 29,095 houses during the year as a routine measure. 1,764 houses were inspected on complaints. The main results of the inspection were as below:

No. of houses found defective for want of proper drainage	1,411
,, ,, adequate latrine accommodation	908
,, ,, satisfactory water supply	275
,, ,, proper ventilation	1,312
No. of notices issued for rectifying defects	6,312
No. of houses repaired as a result of action taken	5,340
No. of prosecutions launched for failure to carry out the suggested improvements	803

236 houses were provided with F. O. Ls. as a result of the action taken by the department.

Cattle yards: 1,533 cases were dealt with during the year. 1,206 prosecutions were launched for failure to comply with notices for improvement served on the owners. Licence was refused in 29 cases. 18 cases were pending consideration at the end of the year. 1,486 cattle-yards were licensed during the year.

The Corporation maintained 4 cattle-yards :

1 Basin Road.
2 Purasawalkam
3 Chintadripet and
4 Triplicane.

All of them were maintained in a satisfactory condition.

Offensive trades: 11,808 applications for licensable trades were received during the year of which 10,407 were licensed. 289 were refused licence and 112 cases were pending disposal at the end of the year. A list of all licensable trades including cattle-yards licensed during the year is furnished in Appendix-Sanitation-Statement II.

Dhobykanas: The six dhobykanas in

1 Robinson Park
2 Conran Smith Nagar
3 Suryanarayana Chetty Street
4 Venkatadrinaicken Street
5 Chetput and
6 Kosapet

continued to be maintained in a satisfactory condition.

Food Control: There were 7 public and 42 private markets in the city. The Moore Market and the Fruit Market were each in charge of a Conservancy Inspector, who looked after the sanitation of the market. The portion of Moore market known as Evening Bazaar was remodelled during the year and was thrown open for business by the Hon'ble Sri K. Chandramouli, then Minister for Local Administration on 21-12-1951. Roads and approaches were tarred wherever necessary and the entire market was maintained in a very satisfactory condition. Construction of other blocks is in progress.

Sanitary Inspectors inspected private markets frequently and wherever necessary, dust and fly-proof cases for food stuffs were insisted on. Food stuffs kept exposed or rendered noxious were destroyed. With a view to prevent flies in the markets, D. D. T. was sprayed periodically.

On the occasion of the Corporation Inauguaration Day, a silver cup was presented to the best kept market in the city selected by a committee of judges composed of the Worshipful Mayor, the Deputy Mayor and the chairman af a Standing Committee.

Meat Supply: The supply of wholesome meat to the citizens was ensured by insisting on the sale in the city of meat of only such animals as were a slaughtered in the slaughter houses maintained by the Corporation. Each carcass was stamped with an indelible mark as a token of its having passed the test for its fitness for consumption Organs of animals which, on examination, were found unwholesome were removed and thereafter the car-

casses were released to the butchers for sale The out-turn of work in the slaughter houses was as follows :

Slaughter Houses.	No. of animals brought	No. rejected after examination	No. slaughtered	No. of carcasses condemned whole	No. of carcasses condemned part	Organs condemned
Sheep Slaughter House, Perambur	4,24,299	3,377	4,20,922	6	2,131	12,079
Sheep Slaughter House, Saidapet	55,937	5,117	50,820	...	...	1,123
Cattle Slaughter House, Perambur	36,194	756	35,438	...	1,565	10,333
Pig Slaughter House, Perambur	659	6	653	3	293	648

Detailed particulars regarding the sheep, cattle and pigs slaughtered are furnished below :

Sheep and Goats

	Sheep	Goats	Total
Perambur	2,79,737	1,41,185	4,20,922
Saidapet	36,252	14,568	50,820
Total	3,15,989	1,55,753	4,71,742

Cattle

Cows.	Bulls.	He-buffals.	She-buffalos.	Males.	Females.	Total.
602	16,626	17,384	826	34,010	1,428	35,438

Pigs

No. of pigs inspected	No. condemned	Males	Females	Total slaughtered	No of carcasses condemned whole.	No of carcasses condemned Part.	Organs Condemned.
659	6	584	69	653	3	293	648

Instructions issued in G. O. No. 4109, Health, dated 18-12-1942 were strictly adhered to with the result that 1,449 heads of cattle as detailed below were saved from slaughter.

Cows.	Bulls.	He-buffalos.	She-baffalos.	Heifers.	Total.
785	58	52	375	179	1,449

70 stray pigs as detailed below found straying in the city were captured during the year and were released to owners after slaughter.

No. of pigs.		Total	No. auctioned		No. released.		No. died.
big	small.		big.	small.	big.	small.	
44	26	70	...	...	44	25	1

Valuable specimens have been preserved to serve as exhibits for the students from the various medical institutions in the city and outside.

Anti-rabic measures :—The measures adopted to prevent rabies were (1) licensing of dogs (2) destruction of stray dogs. Licensed dog catchers were utilised for the purpose of catching stray dogs and they were paid on an out-turn basis. These measures were under the control and direction of a Superintendent. Two motor vans suitably constructed were provided for this work.

Stray dogs in the city were rounded up and removed to the Lethal Chamber in Basin Road where they were electrocuted. Particulars of work done were as below :

No. of dogs left over on 31 12-1950	...	111
No. of dogs caught during the year	...	28,874
No. of dogs claimed by owners and returned	...	2,469
No. of dogs given to Medical Colleges	...	349
No. of dogs electrocuted	...	22,072
No. dogs undisposed on 31-12-1951	...	95

322 complaints were received from the public alleging nuisane from dogs. They were attended to expeditiously. 210 dogs were found, on examination by the Veterinary Officer, to be in a diseased condition and were electrocuted.

Zoological Gardens (1951—52)

The Madras Zoological Gardens completes 98 years of existence this year. It is located amidst ideal surroundings in the heart of the city. It houses a large variety of animals, reptiles and birds. Proposals are taking shape for securing unrepresented and interesting species like the Rhinoceros, Bison, Ibex etc., through the good offices of the Government of Assam. It is hoped that with these additions, the Zoological Gardens will be a centre of more educative and informative value to the young and old alike.

Visitors.—Many hundreds of people visit the Zoo every day. The total number who visited the Zoo during the year was 3,71,020 including 71,016 children.

Pets' Show.—During the year under review, the first Pets' show was organised and it was declared open on 6-1-1952 by His Excellency the Maharaja of Bhavanagar, Governor of Madras, opposite the lions' moat in the Zoological Gardens. It was the first of its kind aimed at encouraging the care of animals and birds and to inculcate kindness and love towards them The success of the Show was entirely due to the keen interest evinced by the Worshipful Mayor.

Honorary Visitors.—Mr. M. Kesava Unni Nayar, I. F. S., Mr. A. A. Nayar, Mr. C. E Holland, Mr. P. V. Ramanujam Chettiar and Mr. K. Manohara Prasad were appointed as Honorary Visitors to the Zoo for a period of two years. The Advisory Committee met for the first time on 10-11-1951 when Mr. M. Kesava Unni Nayar, Chief Conservator of Forests, Madras, promised to secure a pair of elephant calves besides other animals for the institution. During the year, the Committee met thrice and considered various suggestions for extending the Zoo Canteen, a Zoological Library etc.

Livestock details.—At the commencement of the year, there were 411 livestock in the Zoo comprising of 138 animals, 258 birds and 15 reptiles.

Acquisition through births, purchases and gifts numbered 264 and reduction due to death, sale and exchange was 44. There were thus at the end of the year 631 livestock made up of 173 mammals, 436 birds and 22 reptiles.

A detailed statement showing additions and disposals in each class under different heads is furnished below :

Class	No. at the beginning of the year	Additions				Disposals			No. at the end
		Gifts	Ex-change	Pur-chases	Hatches births	Sales	deaths	Ex-changes	
Mammals	138	15	2	8	31	12	9	...	173
Birds	258	5	7	159	29	2	17	3	436
Reptiles	15		...	4	4	1		...	22
Total	411	20	9	171	64	15	26	3	631

Additions: The following were the additions to the livestock through (1) purchases (2) births (3) exchanges and (4) gifts.

1 Purchases: . Fowls of sorts :

A pair of Austrolorps
Five black Minorcha hens
One cock ahd four light sussex hens
One drake and three manilla ducks
Two cocks and six rhode island red hens
One pair of turkeys
Two cocks and seven white leghorn hens
One cock and two white guinea hens
Three pairs of bronze doves
Oue hundred and twelve fancy birds of sort
One female Malabar squirrel
Three cobras
One sand snake.

2 Births:

Three Albino bucks
One black buck
Six Budgerigars
Four crocodiles
Two grey langurs
One Nilgai
Twenty-three pigeons
Seventeen rabbits
Four spotted deer
One sambur deer
One wallaby
One zebra filly.

3. - Exchanges: One pair each of golden, silver and obscurous pheasants were acquired by way of exchange for a pair of Macaw parrots. One white leghorn was also secured, offering in exchange a cock Roman pigeon.

4. Gifts:

Eleven Guinea pigs from Sri. T. Gopala Menon.
One male Hyaena cub from Mr. A. K. Thamba
Two jungle hens from the Madras Forest Department.
A pair of Mannilla ducks from Sri. M. A, Namberumal Naidu.
One female Otter from the Madras Fisheries Department.
One sloth bear cub from Mr. H. Hybbinnitte.
One tigress from Sri S. K. Manohara Prasad.

Disposals:

1 By sales:

One crocodile
One leopard cub
One lioness cub
One pair of pigeons
Ten rabbits.

2 Presentation: Three mouse deer were offered as present to the Yuvarajah Sahib of Bhavanagar.

3 Deaths.—Many problems towards prevention of diseases which confront animals in captivity were attended to. The health of the animals continued to be satisfactory throughout the year. The percentage of death worked out to 4. Details of death with causes are furnished below:

Two black bucks Three bronze doves Twelve bulbuls One civet cat One donkey One duck One red breasted Macaw	Natural causes and senility.
One stump tail monkey	Acute broncho pneumonia.
One tiger	Fracture of the thigh limb due to fight.
Two wallabies	Mycotic infection of the jaws.

4 Destructions: The leopard cub "Cherie" born in the Zoo on 9-9-1950 developed cancer of upper pallet. It was considered inhuman to allow it to drag on a painful life. To save it from excruciating pain, it was shot dead.

Improvements: Complete rewiring of the song birds aviary was effected to afford facility for visitors to see birds within. A separate cage for breeding Budgerigars was constructed on the plan suggested by the Commissioner after his recent visit to U. K. Two movable wooden verandah cages were manufatcured for display of small fancy birds. The pedestrian pathways within the pheasant and mawcaw parrots' enclosures which were much used by visitors were concreted. Roads round the lions' moat which get scoured off after rains were permanently asphalted. Kerb stones were planted along the hedges. Painting of iron bars and colour washing of cages were effected departmentally. An overhead tank was erected to provide visitors with drinking water. A telephone was also installed.

General: Arrangement was made to shift the breeding crocodiles from the island to a suitable cistern so that the reptiles may be visible at all times, undisturbed by the public.

A poultry unit which will be a nucleus to a farm has been started during December 1951 with suitable temporary hutches and different species of fowls were on show.

Amenities: Hitherto, only rides on elephants for the public were allowed. Joy rides on camels have also been started with effect from 20-6-1951 and a fee of annas eight per head per round was collected. Camel rides are restricted only to adults.

Literature: The Zoo is not only a place of amusement but also a centre of education. In addition to painted labels displayed in front of cages, visitors require further guidance and information to understand the habits

and nature of animals. A descriptive Zoo Guide was published. Copies have been arranged to be sold to the public at the Zoo gate and at the Enquiry Office, Ripon Buildings. at Re. 1 each.

Revenue: The right of collecting the fees from visitors to the Zoo and for the use of the cycle stand inside the Zoo was not leased out for the year. Collections were made departmently and the returns for the year worked out to Rs. 1,01,63?-1-0 as against Rs. 79,925-1-6 in 1950-51.

Boating: Pleasure boats and punts plied in the Zoo lake during the year. This amenity was leased out for the year for a sum of Rs 2,100 as against Rs. 3,144-7-0 realised in 1950-51.

Zoo Canteen: The Zoo canteen situated centrally within the Zoo continued to provide light refreshment to the visitors. The right of running it was leased out for a sum of Rs. 5,300 against Rs. 2,800 for the year 1950-51.

Other receipts: The receipts realised by the department under other sources are detailed below:

		Rs.	As.	Ps.
Collection under joy rides on elephants	...	416	8	0
„ „ on camels	...	1,810	0	0
„ admission of cameras	...	562	0	0
„ sale of elephant dung	...	165	0	0
„ hire of animals	...	1,975	0	0
„ stalling charge	...	173	0	0
„ sale of animals and birds	...	1,841	0	0
„ shooting films	...	950	0	0
„ sale of fowl eggs (from Feb. '52)...		9	0	0

Health Education

Education of the public was carried on throughout the year by two of the Medical Officers entrusted with this work assisted by the Divisional Sanitary staff. Lectures and informal talks, some of them illustrated with slides were given in accordance with a planned programme.

During the year, 2,329 lectures and 2,042 talks were given. 72 of them were illustrated with lantern slides.

Slides exhorting the citizens to keep the city clean were exhibited in all theatres in the city during the week covered by the Corporation Inauguration Day.

The proposal to organise the entire work in connection with Health Education by filming the various activities of the Department took definite shape towards the very close of the year and steps have since been taken to make a film on "Fight against Epidemics" comprising the activities against cholera and small-pox. It is hoped that a film on the subject may be exhibited in the various parts of the city during 1952.

The Deparatment took part in the S. I. A A. Exhibition this year.

Care of Destitutes

The diseased and the homeless were taken care of in the institutions specially maintained by the Corporation for the purpose. The following institutions were maintained during the year:

1 Special Home for Infirm and Diseased Beggars
2 Work House for Able-bodied Beggars
3 Poor House
4 Orphanage
5 Homes for the Homeless

1 *Special Home*: The report submitted to Government in the Home Department on the working of the Home in 1951-52 is reproduced below:

"The year 1951-52 opened with a strength of 300 inmates in the Special Home. 430 inmates were newly admitted and of these 80 were transferred from the Corporation Work House under the orders of the Magistrate. Among the new admissions, there were 36 ex-inmates of the Special Home. There were 421 disposals during the year. 298 inmates who had served their detention period were discharged and 16 were discharged before the expiry of the detention period under orders of the Commissioner, Corporation of Madras, under Rule 32A of the Corporation Special Home Rules. 12 inmates who developed mental defects were transferred to the Government Mental Hospital, Kilpauk. 7 inmates escaped and 88 died. These particulars are tabulated and given below:

	Males	Females	Total	Grand total
Strength on 1-4-1951	243	57	300	
No. admitted during 1951-52	297	53	350	
No. transferred from work House	66	14	80	430
No. discharged after detention period	243	55	298	
No. discharged under Rule 32A	11	5	16	
No. transferred to Govt. Mental Hospital	12	—	12	421
No. escaped	7	—	7	
No. died	72	16	88	
Strength on 31-3-1952	261	48	309	

The persons admitted were between the ages of 16 and 85.

Afflictions: The conditions of ill-health of the 430 newly admitted cases are tabulated below:

	DISEASES.																		
	Leprosy infective	Leprosy non-infective	Alimentary system	Nervous system	Respiratory system	Cardio-vascular system	Special organs	Genito urinary system	Venereal	Skin	Mental	Elephantiasis	Osteomylitis	Drug addiction	Infirm & crippled	Tubercular	Other diseases	No appreciable disease	Total
Males	104	55	10	17	6	3	24	—	1	14	7	4	2	1	7	12	95	1	363
Females	9	11	3	3	—	—	6	1	2	4	—	1	—	—	1	2	24	—	67
Total	113	66	13	20	6	3	30	1	3	18	7	5	2	1	8	14	119	1	430

The period of detention of the inmates committed to the institution during the year was uniformly one year.

Medical Treatment: At the time of admission, the cases were found to be in a bad state of health, most of them being extremely emaciated on account of starvation, malnutrition, and chronic incurable diseases. Especially leprosy cases were badly striking with multiple ulcers. They were all given good food and appropriate medical treatment. Besides bi-weekly injections of hydnocorpus oil, selected cases were given sulphones. The cases with sores had daily dressings. Cases of other inter-current ailments were also suitably treated as a result of which most of the inmates improved in their appearance, weight and general health. 7,106 injections were given to leprosy cases and 1,750 injections for the other general ailments. Fortnightly weighment of all the inmates was made and steady increase in weight in most of the cases was noticed. Most of the cases put on weight ranging from 8 to 30 lbs.

Cases requiring special treatment were referred to the following medical institutions in the city.

S. No.	Name of medical institution	No. of cases
1.	Government Mental Hospital	12
2.	Government General Hospital	9
3.	Government Royapettah Hospital	1
4.	Corporation Infectious Diseases Hospital	2
5.	Government Opthalmic Hospital	4
6.	Corporation Thiruvateeswarar Tuberculosis Hospital	1
	Total	29

Disposals: 298 inmates who had served their detention period were discharged. Remissions upto 76 days were granted to some of the inmates. At the instance of the Superintendent, the Police in the city and the Revenue Authorities in the mofussil followed up these discharged cases. The reports received so far from these authorities showed that 20 persons had given up begging and either have taken to avocations like cooly work, cultivation etc., or are being looked after by their relations.

Escapes: 7 inmates escaped and their escape was duly reported to the police. Necessary security measures are being taken to prevent escapes.

Deaths: There were 31 deaths amongst the 300 residual cases of 1950-51 and 57 from the 430 newly admitted cases.

The causes of deaths are furnished below in a tabular form.
The mortality rate was 12 per cent.

Causes of death.	Males	Females	Total
Enteritis	18	4	22
Valvular disease of heart	14	2	16
Inter current and diseases complicating leprosy	8	3	11
Dysentery	8	2	10
Septicaemia complicating leprosy	9	–	9
Nephritis	5	3	8
T. P.	5	1	6
Paralytic stoke	2	–	2
Heart failure	2	–	2
Septicaemia, cellulitis and necrosis	1	1	2
	72	16	88

Staff: The Staff of the institution continued to consist of the following:

1	Superintendent cum Medical Officer	1
2	Nurses	4
3	Clerk	1
4	Compounder	1
5	Chief Warders	2
6	Second-grade warders	13
7	Male Ward Attendants	5
8	Female Ward Attendants	5
9	Peons	3
10	Cooks	4
11	Barbers	2
12	Gardener	1
13	Dhobies	3
14	Male thozhilalis	8
15	Female thozhilalis	5
		58

Visitors: Besides the official, non-official and ex-officio visitors who inspected the Home regularly, the following distinguished persons also visited the Home.

1 Sri T. Govindarajalu Naidu, Jeweller, Madras.
2 Vibhuti Jyoti Swami Nityananda Kaviswar.
3 Emma Davies Lt. Commander, Salvation Army.
4 Mr. Munwar Hussain
5 Sri K. Ramadoss } Members of the Standing Committee (Health), Corporation of Madras.
6 Sri G. Loganathan

All were much impressed with the up-keep of the Home and the care bestowed on the inmates.

Festive days and free gifts: Particulars of the festive days celebrated during the year and of the donors who gave gifts for the purpose are given below :—

S. No.	Festive day	Name of donor	Nature of gift	Entertainment
1	Independence Day 15-8-1951.	Sri S. K. Sundaram.	Ingredients for Pongal.	Drama (Valli's Wedding) by inmates and staff.
2	Sri Krishna Jayanti. 25-8-1951.	Sri T. Rajagopal Chettiar, Contractor.	Sweetened beaten rice & pongal.	...
3	Vinayaka Chathurthi 5-9-1951.	Sowcar Indrachand Galada of Sowcarpet.	Semiapayasam. Sweet rice, poori, appalam, vadai, koottukari, pongal, pansupari and smoke.	Dance recital by Kumari Rajeswari and party. Acrobatics by S. Veeraswamy Chief Warder and party.

S. No.	Festive day	Name of donor	Nature of gift	Entertainment
4	Corporation Inauguration Day. 29-9-1951.	Corporation Council.	Semia payasam, appalam, pongal, pansupari and smokes.	Drama (The Conscience) by P. R. Ranga and party,
5	Vijayadasami 10-10-1951.	Kevraj Chodia.	Sweet and karaboondi.	3 dramatic farces by inmates.
6	Do.	Sait Parasumull.	Iddili with chutney.	...
7	Moharam 12-10-1951.	Arranged by the Superintendent.	Payasam, plantain and coffee	...
8	Deepavali 29-10-1951.	T. Govindarajulu Naidu.	Sweet and karaboondi	
9	30-10-1951.	Sowcar Parasumull.	Sathukudi ...	
10	20-11-1951. ...	Manikchand Bethala.	Iddli with chutney.	
11	Christmas Day ...	Arranged by the Superintendent.	Mutton kurma ...	
12	22-1-1951 ...	Sowcar Parasumull.	Plantains	
13	23-1-1952	Do.	Wheat halva and karaboondi.	3 farces by inmates.
14	Indian Republic Day.	Corporation Council.	Milk & sago pudding, gingelly seed laddy, masalvadai, appalam, pansupari and smokes.	
15	4-3-52	Mrs. Pankajam, Nurse.	Bengal-gram sundal.	
16	Telugu New year's Day 26-3-1952.	Arranged by the Superintendent.	Pongal, coffee and plantains.	Therukuthu, Abinaya Swayamvaram by inmates and

Besides the special feeding given on the above mentioned days, entertainments such as dramatic performances, dance recitals, farces and acrobatics were arranged with a view to relieving the monotony of the life of the inmates in the institution.

Home Garden :—The space used for gardening purposes was attended and various kinds of vegetables were grown viz., greens, gourds, radish, tomatoes, brinjals, lady's fingers, beans, etc. The garden-produce replaced the contractor's supply on 86 occasions and thereby effected a saving of Rs. 800 approximately during the year.

The expenditure incurred by the Corporation during the year under report on the maintenance of the Home was Rs. 1,13,624."

Work House :— The report submitted to Government in the Home Department on the working of the Work House in 1951-52 is reproduced below :—

"The strength of the Work House on 1-4-1951 was 128 males, 23 females and 8 children, the total being 159.

During the year, there were 356 admissions including those under remand, and 254 cases including those under remand were discharged. Among those released, 9 males were discharged on the orders of the Commissioner, Corporation of Madras, under Rule 35 A of the Corporation Work House Rules.

During the year, 7 inmates escaped and their escape was reported to the Police for necessary action and one of these seven was recaptured by the staff. There was one death during this year. The inmate died when he was in Government Stanley Hospital for treatment for heart complaint.

Number of admissions, discharges etc., according to sex is given below in the following statement :—

	Males	Females	Children	Total
No. on 1-4-51 ...	128	23	8	159
No. admitted during the year ...	235	34	10	279
No. kept under remand ...	50	27	...	77
No. released including those under remand	187	51	16	254
No. escaped during the year 1951-52	3	4	...	7
(2 males and 1 female escaped from Government Stanley Hospital while undergoing treatment)				
No. died during the year 1951-52	1	...	...	1
No. transferred to Special Home during the year 1951-52 ...	66	14	...	80
No. on 31-3-1952	156	15	2	173

The committal periods of the inmates ranged from 6 months to 2 years as shown below :—

	6 months	1 year	2 years
Males	14	214	7
Females	6	25	3

The average weight of an inmate when admitted was 89 lbs. and the average weight on release was 96 lbs.

Inmates under various age groups were as follows :—

	Age between									
	15—20	21—25	26—30	31—35	36—40	41—45	46—50	51—55	56—60	60—70
Males ...	19	28	30	33	32	24	32	13	20	4
Females ...	8	4	1	6	5	2	5	3	...	...

Public Health Laboratory
Assistant Pathologist at work on the U. N. I. C. E. F. – donated equipment for the diagnosis of Syphilis

Inmates of Work House, Poor House & Orphanage
'En fete' on August 15th

There were two sick wards, one for males and the other for females. Minor ailments were treated in the Work House itself by the Superintendent. During the year, 7 cases were sent to Government Stanley Hospital and 4 cases to the Infectious Diseases Hospital for special treatment.

Able-bodied beggars committed to the Home are trained in spinning, textile weaving, tag-making, rope making, mat weaving, gardening and cooking. Washing of clothes is done by the inmates themselves.

The statement below shows the number of inmates trained in the various sections during the year :

	Males.	Females.
Weaving	41	...
Tag making	4	...
Rope making	50	18
Gardening	12	3
Cooking	13	...
Mat weaving	5	...
Spinning	3	3

Female inmates were given training in needle work.

The inmates while under training, manufactured bed sheets, bandage cloth, towels, dungry cloth, matty shirting cloth, cocoanut rope of different sizes and kora mats. These articles were sent to Corporation General Stores and Medical Stores to meet the requirements of the various Corporation institutions.

After discharge from the Home, inmates are recommended to different firms in the city for employment. Eight released inmates were retained in the industrial section of the Work House, 5 in weaving section and 3 in rope making section, on daily wages.

The Collector of Madras, the Inspector-General of Prisons, the Commissioner of Police and the Deputy Commissioner of Police paid official visits during the year. The Mayor, Deputy Mayor and the other visitors appointed by the Council made periodical visits and recorded their suggestions in the Visitors' Book.

Besides the weekly inspections made by the Assistant Health Officer, the Health Officer and the Commissioner have visited the institution periodically.

During the year, the Work House supplied to the Infectious Diseases Hospital equipment valued at Rs. 925-9-2.

Statement showing the cost of raw materials consumed, the value of articles produced and the proceeds from the sale of the finished articles in 1951-52 is given below :—

Cost of raw materials consumed ...	Rs. 17,019-4-1
Value of articles produced in 1951-52 ...	„ 39,762-0-9

Proceeds from finished articles sold.

Cash.	Credit sales to various departments of the Corporation.	Total.
Rs.	Rs.	Rs.
2,147-10-1	35,526-1-6	37,673-11-7.

Cash collections amounting to Rs. 2,147-10-1 were realised by the sale of finished articles to the visitors who came to the institution during the year.

There are two gardens in the Work House, one in the males section and the other in the females section. Various kinds of vegetables were grown in these gardens and the total production came to 25,151½ lbs. These vegetables were used in the Poor House, the Work House and the Orphanage and in other Corporation institutions as shown below :—

	Quantity	Value
Poor House ... Work House ... Orphanage ...	15,485¾ lbs.	Rs. 1,779-11-8
Midday Meals Centres and Special Home ...	9,665½ „	„ 930-13-4

Free supply of beedies and snuff by the various beedi and snuff factories continued to be made this year also.

The expenditure incurred on the maintenance of the institution during the year was Rs. 77,792.

Poor House—

The Poor House is a voluntary home where disabled and old destitutes of either sex are admitted. The Home is in charge of the Superintendent of the Corporation Work House.

Minor ailments of the inmates are attended to by the Superintendent, who is a medical man. 33 cases requiring special treatment were sent to Government Stanley Hospital and 6 of them died there.

The details of the inmates in the Poor House during the year were as follows :—

	Males.	Females.	Total.
No. of inmates on 1-1-1951 ...	94	50	144
Admissions during the year ...	89	56	145
Discharged	43	40	83
Deaths	30	20	50
Absconded	11	...	11
No. of inmates on 31-12-1951 ...	99	46	145

The inmates were given free food and clothing. On almost all the Hindu festival days, the inmates were provided with special dishes, the expenditure therefor being met from out of the interest on endowments created for the purpose.

Periodicals were provided for the inmates from the nearest Corporation free reading room. A radio provided entertainment to the inmates.

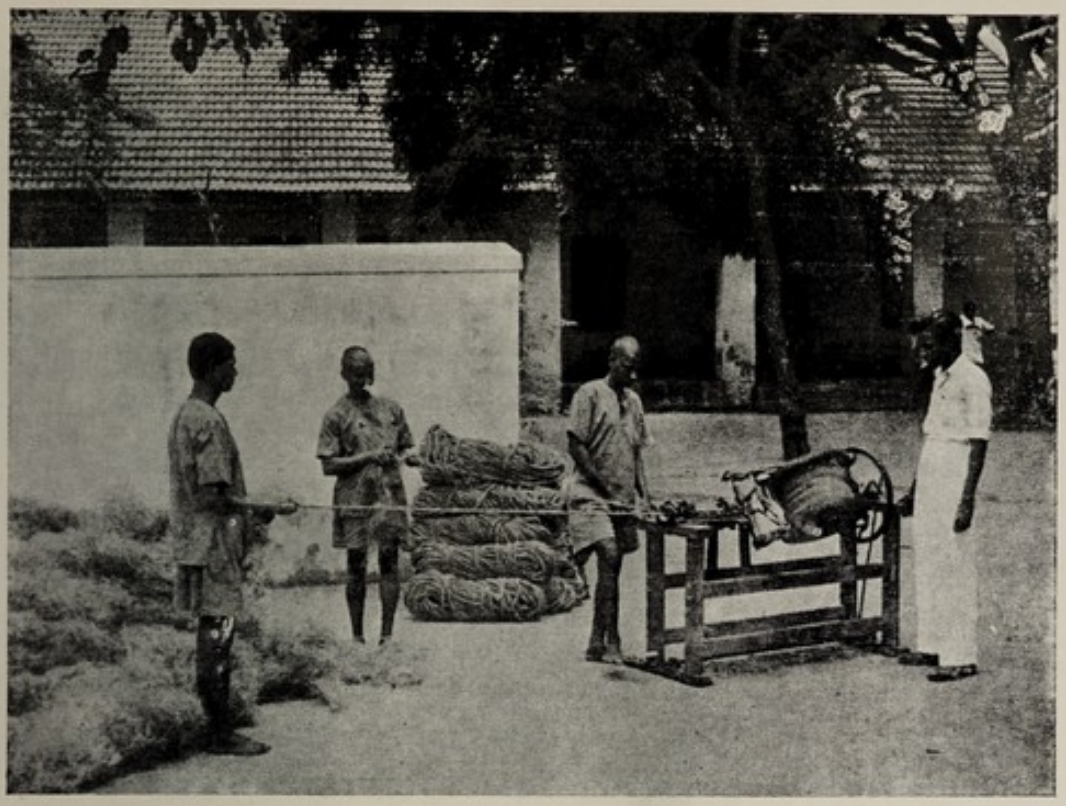
Orphanage :—The orphanage is located in the compound of the Work House and is open to bonafide orphan boys between 5 and 12 years of age. Boys are retained only upto their 14th year. Accommodation is available for only 50 children.

There is a recognised Elementary School attached to the orphanage where regular instruction under the Madras Educational Rules up to the V standard level is imparted. Ordinary ailments of the children are attended to by the Superintendent of the Work House who is also the official in charge of this institution. Wherever necessary, children were sent to Government hospitals for specialised treatment.

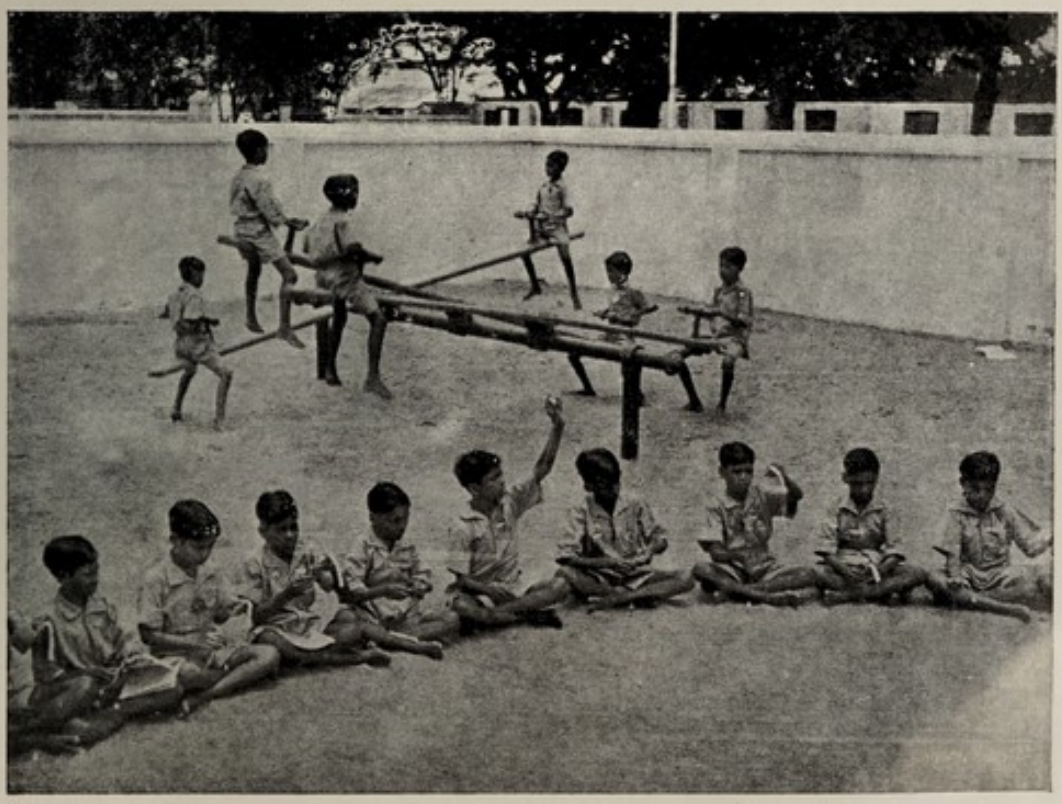
The details of the strength in the Orphanage were as below :—

No. of children on 1-1-1951	50
No. admitted during the year	6
No. discharged	6
No. at the end of the year on 31-12-1951	50

Homes for Homeless :—The six Homes for the Homeless located in different parts of the city afforded shelter to over 700 homeless persons during the year.



Inmates of the Work House at Rope - making



Corporation Orphanage - Children spinning on the Takli.

Conservancy

The question of the separation of conservancy from the Health Department is still under the consideration of the Council. A decision on this subject should be taken very early.

Conservancy of the city continued to be under the control of Assistant Health Officers. The city was grouped into 5 ranges each of 10 divisions and each range was in charge of a Conservancy Supervisor. He was assisted by a Conservancy Inspector in each division. 3,194 labourers were employed for sweeping streets, cleaning latrines, removing sullage from the cesspools and for maintenance of cattle in the depots. The total expenditure incurred on conservancy in 1951-52 was Rs. 30,82,450 as against Rs. 29,39,429 in 1950-51.

542 carts as detailed below were used for removal of rubbish, sewage silt etc., in the city.

Trollies	13
Double draught rubbish carts	143
Single draught rubbish carts	281
Sewage Barrel carts	93
Night-soil carts	12

In addition, 61 motor lorries were utilised for the purpose:

Conservancy	45
Night-soil	8
Sewage	8

The question of increased transport to meet the increased demand is under examination. It is felt that the transfer of conservancy to a separate department is all the more necessary to investigate the proportion of increase necessary in animal-drawn vehicles and mechanised transport best suited to meet the needs of the city in the interest of efficiency and economy so that Madras may maintain its reputation as one of the best conserved cities in the East.

Disposal of rubbish and filth.—About two lakhs of tons of rubbish were removed during the year. A part of rubbish was utilised for reclamation and a portion was used for the manufacture of compost. The details of the reclamation work are as follows:—

Particulars of land.	Dn. No.	Owned by	Approximate valume in cubic feet.	Approximate cost of work done. Rs.
Low land near Gandhi Park ...	6	Corporation.	5,47,500	13,688
Low land in Korukkupet ...	5	„	27,37,500	68,438
Low land behind Slaughter House	18	„	15,32,000	38,300
Low land near burial ground in Otteri	23	„	10,00,125	25,003
Low land near Shenoy Nagar.	22	„	3,54,625	8,866
Low land in Railway Road ...	48	„	200	5
			61,71,950	1,54,300
Gandhi Nagar low land ...	50	Private ...	18,000	450
Lattice Bridge Road pond ...	50	„ ...	3,960	194
Velacheri Road pond	49	„ ...	13,120	328
41/42, Mount Road ...	33	„ ...	53,400	1,335
Muslim Association, Peters Road	37	„ ...	80,000	2,000
			63,40,430	1,58,507

The amounts realised by way of sale of cow-dung from the various cattle depots and by way of sale of rubbish to private parties for reclamation of their lands were Rs. 7,770-5-3 and Rs. 2,779-0-0 respectively.

The tipping platform located at Basin Road, Krishnampet and Pudupet worked satisfactorily and relieved the strain on animal-drawn vehicles to a great extent. Rubbish carts removed the rubbish to the nearest tipping platform from where motor lorries transported it to the places of its ultimate disposal.

Compost manure.—Compost manufacture was done in two places in the city, Otteri and Korukkupet. About 3,500 tons of night-soil 720 tons of bowel contents from the Slaughter House and about 4,200 tons of rubbish were used during the year in the manufacture of compost, out of which, about 5,690 tons of compost were manufactured. The total sale of compost during the year was 4,802 tons and the amount realised was Rs. 28,812. 30 thozhilalis and 1 Maistry were engaged for the work. Buffalo grass and guinea grass were also grown in Korukkupet. This grass was supplied to the various Corporation Cattle Depots for feeding sick animals. A quantity of 31,435 lbs. of grass was supplied during the year. A graphical illustration of the progress in the sale of compost manure form the commencement of the scheme in 1949 to the end of 1951 is found elsewhere in this report.

Public latrines.—There were 382 public conveniences in the City during the year. 9 public convenienees were under construction on 31-12-1951.

The day-to-day cleaning and disinfecting of public latrines were looked after by this department, while repairs were attended to by the Special Works Department. In order to keep the public conveniences in a sanitary condition, the work of white and colour washing was attended to by the Conservancy Inspectors of the divisions once in 3 months. The amount spent for this purpose was about Rs. 3,000 during the year.

Conservancy of private institutions.—On a representation to the Government for payment of conservancy charges for city state hospitals, the Government in their Memorandum No. Ms. 392, Health, dated 5-2-1952 was pleased to sanction payment of conservancy charges of Rs. 898-12-0 per mensem from 1-8-1951.

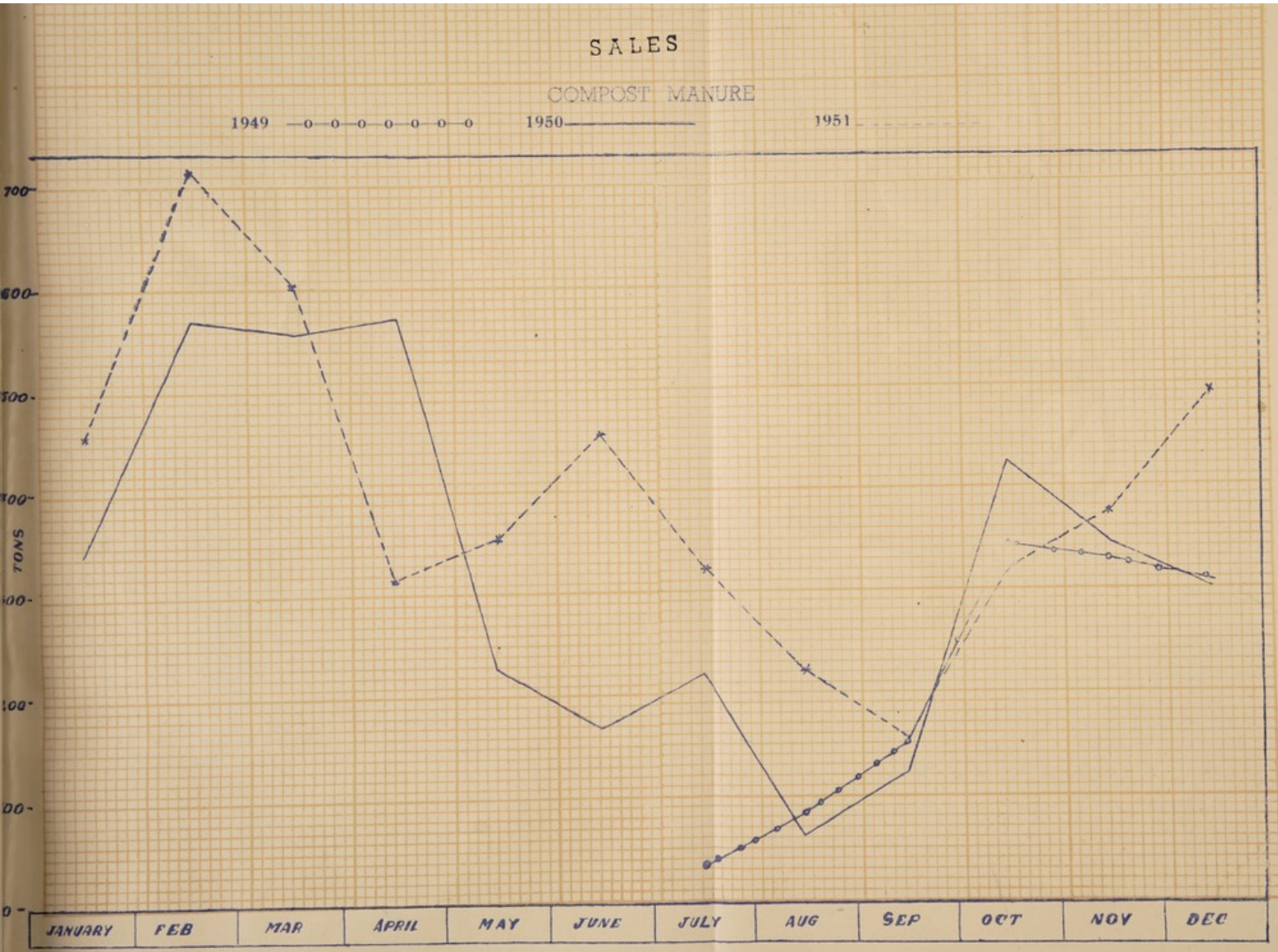
Labour.—In pursuance of G.O. No. 4942 L. & M. dated 29-12-1931, 49 thozhilalis, retired on account of old age and infirmity, were granted bonus and gratuity. The total amount thus paid was Rs. 11,608-8-0. 299 thozhilalis were in occupation of tenements provided by the Corporation, while 184 thozhilalis were given facilities to construct their own dwellings on Corporation lands. To encourage thozhilalis, prizes were awarded to efficient workers, namely, conservancy sweepers, syphon thozhilalies etc., males and females, onthe Corporation Inauguration Day. These awards were made on the recommendation of Workshipful Mayor, Deputy Mayor and the Chairman of a Standing Committee.

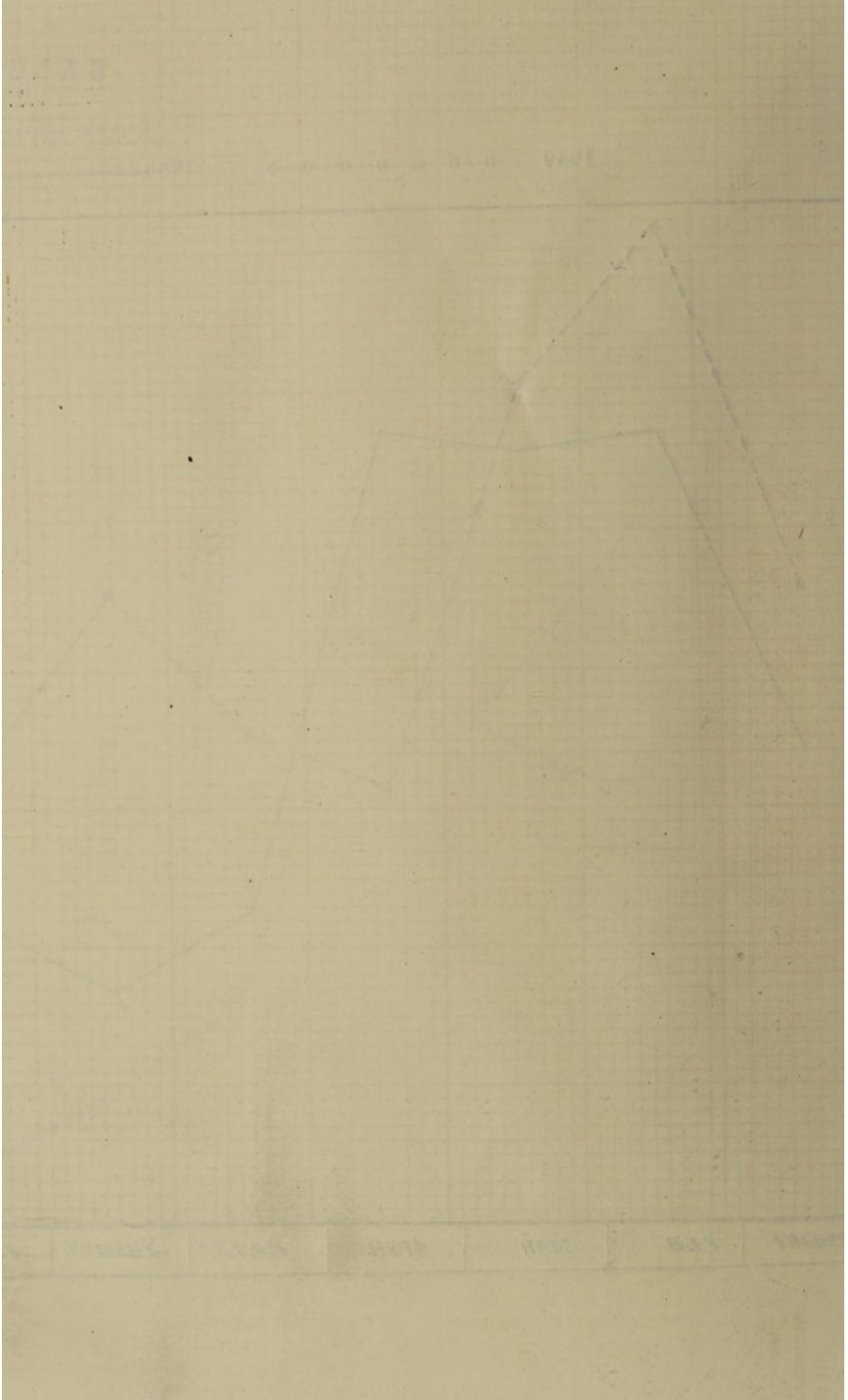
Animals.—803 bullocks were in service on 1-1-1951 in all the 9 conservancy cattle depots situated at the various places in the city. 37 new bullocks were purchased during the year under review, and 69 bullocks died and 23 animals were sold in public auction. 748 animals were in service on 31-12-1951 for conservancy work.

The cattle depots were placed in charge of the Veterinary Assistant Surgeons assisted by the Conservancy Inspectors. The Veterinary Assistants were in charge of the health of the bullocks, fodder and feedings, while the Conservancy Inspectors were in charge of labour and maintenance of accounts.

SALES

COMPOST MANURE





The Veterinary Assistant of 'C' Cattle Depot was also in charge of 'G' Depot at Perambur and the Veterinary Assistant of Saidapet was in charge of 'H' Depot at Kodambakkam. The Veterinary Assistants in charge of Basin Bridge, Barber's Bridge and Pudupet Cattle depots were also in charge of the Veterinary Dispensaries in the respective depots. The scale of diet adopted for conservancy bullocks was the same as in 1950.

Out of 69 animals that died during the year, 59 were of old age, 1 of rabies and the other 9 of other causes. 13 old and unserviceable animals were sold in public auction.

During the year under review, 1,139 cases were treated in all the cattle depots and Veterinary dispensaries for various diseases.

Foot and Mouth Disease: There was no other contagious disease in the cattle depots excepting foot and mouth disease at Royapuram and Saidapet Cattle Depots. 131 cases were segregated and treated at Hope Lodge. Necessary preventive measures were adopted to check the spread to other depots. There was no casualty from the disease.

There was considerable increase in the conservancy work on account of increase in the population and due to addition of extended areas. There was a heavy strain on the animal-drawn vehicles and in the interest of work, re-allocation and redistribution of carts were given effect to from March 1951, but it is absolutely necessary to augment the strength of the conservancy fleet at a very early date.

Veterinary Dispensaries: The three veterinary dispensaries continued to do good work and they were very popular with the public. The total number of cases treated in the three dispensaries was as follows :—

'B'	Basin Bridge	...	...	...	11,739
'D'	Pudupet	...	...	...	12,587
'F'	Barber's Bridge	...	..	...	16,325

The common diseases treated in addition to the digestive and other allied diseases were sterility, pregnancy and deficiency diseases in calves. During the year, there was an out-break of cow-pox in the private cattle yards. It was checked and the owners of cattle yards were instructed to keep the places in sanitary condition.

Breeding bulls.—112 services were done by the breeding bulls stationed in the depots.

Artificial insemination work was started by the Government Animal Husbandry Department at Basin Bridge Depot also during the year in addition to the existing centre at Barber's Bridge ('F' Depot) It was very popular and 80 to 85% of the attempts were successful. The determination of sex of the calf by artificial insemination is still in the experimental stage. Specimens of professional interest were collected and preserved in the Veterinary Dispensaries.

Anti-malarial operations

Anti-malarial operations in the city were in charge of a Malaria Officer with Public Health qualification in the grade of a second-class Health Officer and with special training in Anti- malarial operations. He was assisted by 5 Malaria Supervisors, 8 Stegomyia Overseers, 50 Malaria Maistries and 313 thozhilalis. The labour complement was grouped into gangs and assigned for work in the divisions. On anverage, about 6 thozhilalis were availablef or work in each division in the city. These operations involved cleaning, oiling of drains, fish introduction, house inspection etc.

The aim of the anti-malarial operations was the control and eradication of the malaria carrying mosquitoes, the carriers prevalent in the city being A' Stephansi and 'A' Culicifacies. Their breeding was effectively checked in wells, ponds, tanks and stagnant waters.

Of the two vectors of Malaria prevalent in the City, Anopheles Stephansi and Anopheles culicifacies, the former were found to breed in domestic wells and the latter in tanks and ponds. There are about 23,000 wells in the city. Every well was subjected to routine examination at interval of 2 months. Fish gangs removed floating matter and if larvae were found, treated the well with 0.2 per cent D. D. T. solution. Larvicidal fish was later on introduced to keep down the growth of larvae.

Anopheles Culicifacies were found to breed generally in ponds and tanks in the outlying areas of the city. About 96 private ponds and tanks in the outlying areas of the city were cleaned on payment of charges. The charges collected under this head came to Rs. 2,485. Tanks cleaned by the owners were kept under constant observation for preventing larval breeding.

Anti-stegomyia operations:—To control the breeding of Aedis-Aegypti in the region half a mile around the port, the area was divided into 8 sectors with a Stegomyia Overseer in charge of each sector with necessary equipment. They inspected buildings in the area and eliminated larval breeding from neglected drains, cisterns, fire-buckets, overhead tanks and other such places. The survey of stegomyia mosquito House index ranged between 0.01 and 0.11 during the year as against 9.5 when the survey was first started in 1936.

Culex Fatigens and Anopheles subpictus were the other prevalent species of nuisance value. The former bred in the storm water drains and in the cesspools in the extended areas not sewered by the under-ground drainage and latter species along the course of the three water ways, the Cooum, the Adyar and the Buckingham Canal. The abatement of nuisance from these mosquitoes was also a feature of the anti-mosquito work. Culex fatigans being carriers of Filariasis, much attention was directed to their control in the added areas like Sembiam, Ayanavaram, Aminjikarai, Kodambakkam, West Mambalam and Saidapet. Bags of saw-dust soaked in a mixture of diesel and kerosene oil fortified with 0.2% dissolved D. D. T. were kept immersed in the cesspools in the added areas in the city to prevent larval breeding. This device ensured gradual liberation of oils to form a thin covering on the surface of the sullage, effectively destroying larvae therein and also repelling the female species resorting to the cesspools to lay eggs. Desilting of cesspools was done once in three months and about 647 lorry-loads of silt were removed from the cesspools in the added areas.

The storm water drains in the city were inspected regularly twice a week and were cleaned and brushed. The Kelly's drain, a fertile source of breeding in George Town area received special attention. This drain was flushed with sea water twice a week by the Special Works Department. This step helped to control the breeding effectively in George Town area.

Anopheles subpictus was found to breed in the rivers like the Cooum and Adayar. The floating moss and algae decomposition together with the matting fibre weeds afforded good shelter for larvae from the attack the larvicidal fish. To clear these weeds usually 6 tank cleaning gangs were concentrated and 380 lorry-loads of weeds were removed. The water ways were then suitable trerted. These water ways breed culicenes as well in places where there were sewage contaminations from storm water drain ending and the drains from the pumping stations and such breedings were arrested in the larvae stage itself.

The Buckingham Canal formed a breeding place for Culex Fatigans wherever there was sewage contamination in its course. Anopheles Subpictus were found along its entire length. The edges of the banks were trimmed and weeds and floatage were removed as frequently as possible. Larvicidal fish were stocked in sufficient numbers to kill larval breedings along its entire length.

6,109 gallons of liquid fuel oil and 1,812 gallons of kerosene oil, 1,224 lbs. of D D. T. were used during the year for the anti-mosquito work and for destruction of flies and 419 lbs. of D. D. T. suspension Geigy, powder 95 lbs. of soft soap and 265 gallons of Aromax were used.

The House Inspection Squads carried out intensive inspection of houses in 14 divisions. Breedings were eliminated from storage utensils, discarded vessels, tins, broken pots, condemned tyres etc., found the houses. Such intensive work could not be extended to all the divisions in the city for want of sufficient staff. Complaints about mosquitoes very often revealed breedings in neglected house drains. In every such case, the breedings were destroyed and residents informed of the need for cleaning the drains frequently. A 5 per cent D. D. T. Suspension was used for destruction of breedings. in the case of Anophelines and 10% solution in the case of Culicines, the latter being more resistant. At the request of private parties, D. D. T. was sprayed on payment at the rate of Rs. 5 per 1,000 sq. ft. surface area. A sum of Rs. 939-10-0 was collected.

Flies in private and public markets in the city were controlled by 5% D. D. T. emulsion specially during the prevalence of cholera. A sum of Rs. 915 was collected for spraying private markets with D.D.T. emulsion. Cheries were also sprayed with D.D.T emulsion to abate fly nuisance. All the dumping grounds were attended to in the same manner.

As an emergency measure to tide over the water scarcity in the city, chlorination of wells was taken up on 25-1-1951 under the control of the Malaria Officer. The scheme was begun with 50 gangs working under 5 Chlorination Inspectors (qualified Sanitary Inspectors) one for each range under whom were posted ten chlorination gangs to work. The work of each gang was to examine with a well-net for mosquitoe larval breedings, which, when present, was treated with 0.2% DDT. solution to destroy them and to chlorinate the well next day with a dose of 1 oz. of bleaching powder containing 33% nasant chlorine in it to every 1,000 gallons of water In other cases, where the larvae could not be found, the chlorination of well was performed once in a week according to the prescribed dose regularly and systematically. About 18,860 wells were brought under regular chlorination out of 23,000 as a precautionary measure against water-borne diseases. The amount of bleaching powder used was 8-1/6 tons at a cost of Rs. 5,063.

Reclamation of low lands.—Low lands in the following places, both public and private, were reclaimed during the year.

1. Gandhi Park (Perambur Tank.)
2. Low land in Korukkupet for a new colony.
3. Low land behind the Slaughter House.
4. Low land in Shenoy Nagar.
5. Land behind Otteri Burial Ground.
6. Railway Road (48th Division).
7. Low land in Gandhi Nagar.
8. Pond in Lattice Bridge Road.
9. Pond in Velacheri.
10. Low land in the Muslim Association Compound, Peters Road.

Report of the Water Analyst

Introduction :

The two vital aspects of the City Water Supply demanding attention are its quantity and quality. It is necessary that any scheme of water supply should take note of the fact that allowance should be provided for a per capita consumption of about 50 gallons per day. Our present storage facilities, even at the best of times, cannot be expected to reach at least this desirable minimum. The maximum that we had so far been able to provide has only been 29 gallons during the best of periods and it has often gone down, of late, as low as 11 gallons. (Table I.)

In regard to quality, we are far from the standard both aesthetically and from a health point of view. The existing system of sand filtration through 6" of sand is quite inadequate to meet the needs of the situation. As a second line of defence, we are resorting to chlorination. Though this gives us satisfactory results for the present, much reliance cannot, for obvious reasons, be placed on this method. We must naturally aim at a system of filtration which would provide a hygienically and aesthetically satisfactory quality of water to the citizens.

Scientific :

The water supply to the city is derived from three sources (a) the Kortalayar River System, (b) Infiltration Galleries and (c) Emergency Well water supplies.

The number of samples of water tested for various purposes are shown in Table II.

(i) *Limnological conditions in Satyamoorthy Sagar* : (Vide Table III and IV).

At Poondi, where Satyamoorthy Sagar is situated, the total rain-fall for the year was 27·52 inches and the maximnm level recorded was in January 1951 and the minimum in August 1951.

The total solids varied from a minimum of 25·2 parts on 18th April to a maximum of 61·2 parts per 100·000 on 28th July; hydrogen ion concentration expressed in terms of P.H. from 7·8 on 14th October to 9·3 on 28th July; the dissolved oxygen from 4·0 cc/l on 18th February to 10·1 cc/l on 28th July; chlorides from 3·9 parts on 29th November to 11·6 parts on 28th July and oxygen absorbed from 0·184 parts on 19th October and 29th November to 0·604 parts per 100·000 on 28th July.

Bacteriologically coliform flora were present in 1 ml. and upwards for the major portion of the year.

A noteworthy feature of the water was that on 28th July 1951, the water was coloured greenish and super-saturated with oxygen due to a vigorous algal bloom of *Microcystis Spp.*

(ii) *Limnological conditions in Sholavaram Reservoir (vide Tables III and V)*:

The total rain-fall for the year in the catchment area of Sholavaram Reservoir was 28·6 inches only. Maximum level was reached in September and the minimum in March.

The total solids varied from a minimum of 12·4 on 29th November to 32·4 parts on 18th April; hydrogen ion concentration water (P.H.) varied from a minimum of 7·7 on 29th November to a maximum 9·6 on 28th July; dissolved oxygen varied from a minimum of 1·3 cc per litre on 14th March to a maximum of 9·2 cc. per litre on 28th July; and oxidisable organic matter (Tidy's 4 hours test) varied from a minimum of 0·215 parts on 29th September to a maximum of 0·942 parts per 100·000 on 14th March.

Fig 1. OSCILLATORIA LIMNETICA
Dominant plant organism in Red Hills Reservoir
in June 1951 (Magnified about 100 times)

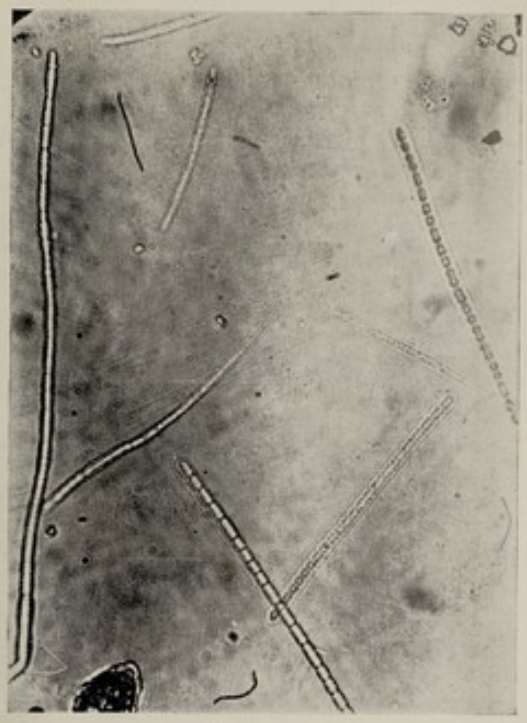


Fig 2. OSCILLATORIA LIMNETICA
(Magnified about 1000 times)

Fig 3. Microcystis Spp. Dominant plant
organism in February 1952 in Red Hills Reservoir

Bacteriologically coliform organisms were invariably present in ml and upwards.

As in Satyamoorthy Sagar, a striking feature of the reservoir was its content of low dissolved solids, high pH, dissolved oxygen and organic matter. A permanent bloom of *Microcystis* spp was almost always seen in the water giving the water a greenish or yellowish green tinge.

(iii) *Limnological conditions in Red Hills Reservoir (Vide Tables III and VI)*:

In the catchment area of the Red Hills Reservoir, the total precipitation for the year was only 28·69" as against 50" for a normal year. The level of water was highest in January and thereafter it decreased gradually on account of draw off for the city's water supply as well as due to evaporation until the lowest level was reached in October, which is quite unusual. The water was discoloured yellowish and was also opaque throughout the year. The contents of total solids varied from a minimum of 16·0 parts on 29th December to a maximum of 48·4 parts per 100·000 on 22nd June; hydrogen ion concentration (pH) varied from a minimum of 8·3 on 29th November to a maximum of 9·3 on 19th September, October and 29th December; the content of dissolved oxygen varied from a minimum of 3·2 cc/litre on 14th March to a maximum of 6·7 cc/litre on 19th September and October; the chlorides from a minimum of 4·5 parts on 29th November to a maximum of 7·3 parts on 19th October; and the oxidisable organic matter (Tidy's) varied from a minimum of 0·217 parts on 29th May to a maximum of 0·309 parts per 100·000 on 31st August.

Bacteriologically coliform flora were present in varying volumes i.e. from 1 ml. and upwards to 20 ml. and upwards.

In the early months of the year when there was a greater volume of water, the dominant plankton organism was *Oscillatoria limnetica* (Fig I and II) which was succeeded by *Microcystis spp* (Fig. III) when the level became very low.

The distinguishing features of the reservoir were its low level, yellowish or yellowish green coloured water, due to the dominance of almost a single plant organism, its high pH and dissolved oxygen, low chloride content and excessive amount of oxidisable organic matter of vegetable origin.

(iv) *Limnological conditions of the Red Hills Reservoir water before and after reaching the Roughing Filters at Red Hills (vide Tables VII and VIII respectively)*:

The water entering ehe Roughing Filters was drawn from the last bell-mouth or still lower which was about 5 feet below the water surface in the Red Hills Reservoir. So, the water reaching the Roughing Filters represented a lower strata of water found in the reservoir. The results shown in Tables VII and VIII differ from those shown in Table VI in some respects as detailed below:—

RED HILLS RESERVOIR (Results expressed in parts per 100,000)

Chemical variables	Surface	Roughing Filters	
		Before	After
1 Total solids	16·0 to 48·4	31·2 to 32·9	27·2 to 36·0
2 Hydrogen ion Concentration (pH)	8·8 to 9·3	8·8 to 9·3	8·5 to 9·3
3 Dissolved oxygen cc/l ...	3·2 to 6·7	3·2 to 6·2	3·2 to 6·6
4 Organic matter (Tidy's) ...	0·217 to 0·309	0·218 to 0·296	0·118 to 0·315
5 Albuminoid Nitrogen ..	0·036 to 0·084	0·036 to 0·088	0·032 to 0·088

The differences are not very significant except in the case of total solids where the maximum is reached for the surface water.

Next, a comparison of the three reservoirs with regard to some of the important chemical variables is made below :

Chemical variables	Satyamoorthy Sagar	Sholavaram Reservoir	Red Hills Reservoir
Total solids (Parts per 100,000)	25·2 to 61·2	12·4 to 32·4	16·0 to 48·4
Hydrogen ion concentration (pH)	7·8 to 9·3	7·7 to 9·6	8·3 to 9·3
Dissolved oxygen (cc/l) ...	4·0 to 10·1	1·3 to 9·2	3·2 to 6·7
Organic matter (Tidy's) (parts per 100,000)	0·184 to 0·604	0·215 to 0·942	0·224 to 0·309
Albuminoid Nitrogen (parts per 100,000)	0·016 to 0·084	0·028 to 0·072	0·036 to 0·084

It will be seen from the above that (i) the total solids is greatest in Satyamoorthy Sagar and least in Sholavaram Reservoir ; (ii) hydrogen in concentration expressed in terms of pH is greatest in Sholavaram Reservoir indicating indirectly that organic production is greatest in it ; (iii) the content of dissolved oxygen although greatest in Satyamoorthy Sagar, is also found to be fairly high comparatively in Sholavaram Reservoir and least in Red Hills Reservoir : (iv) oxidisable organic matter is highest in Sholavaram Reservoir and least in Red Hills Reservoir ; (v) but albuminoid nitrogen is greatest in the Red Hills Reservoir.

So, the location of the Sholavaram Reservoir in the middle of the three reservoirs of the Kortalayar River System helps to sediment all the solids present in the raw water reaching Red Hills Reservoir. It affords also facilities for greatest organic production so that all the nutrient substances of biological significance brought into it from Tamarapakkam anicut, are utilised.

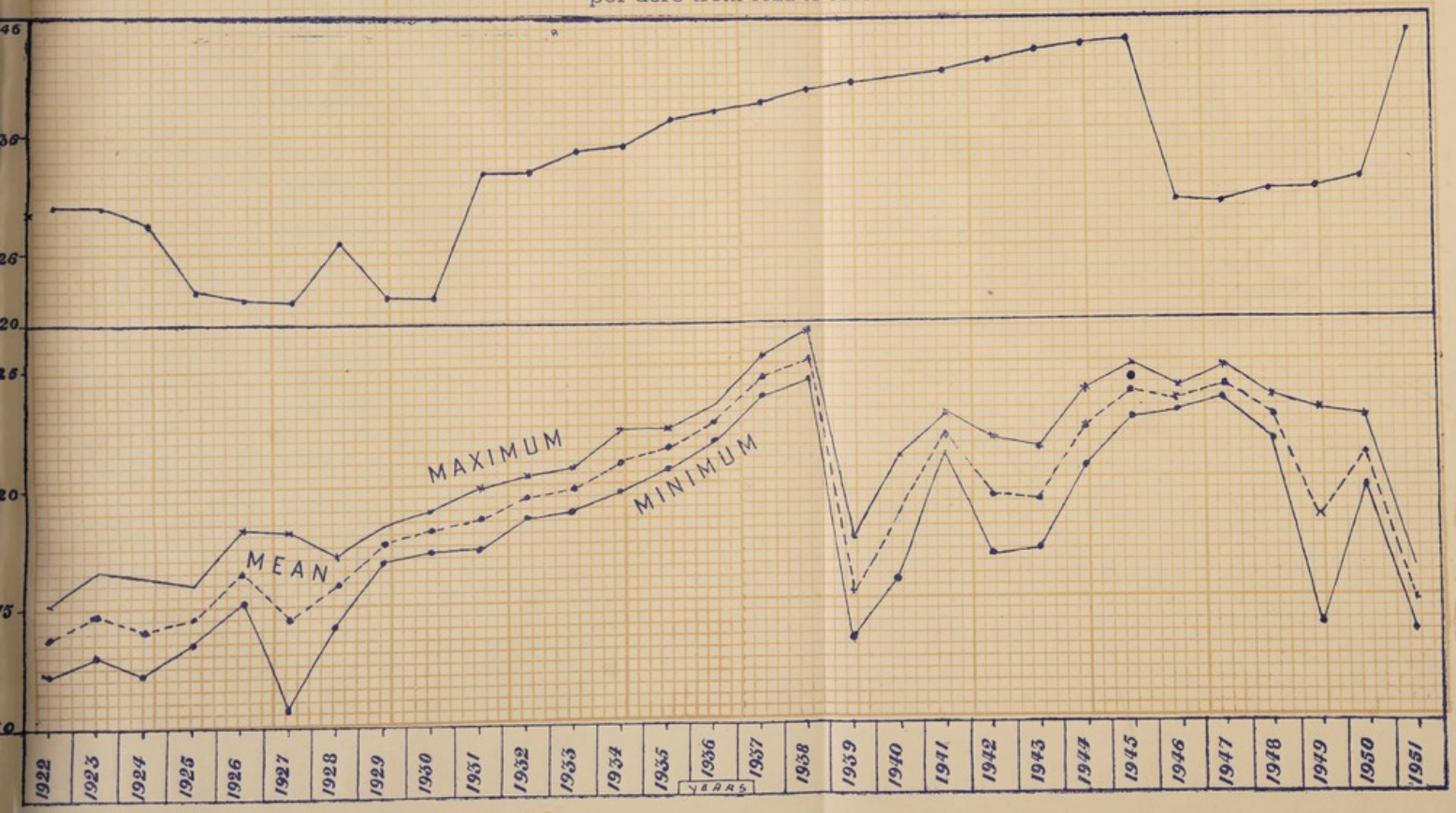
Raw Water at the Kilpauk end (*Table IX*): The quality of the raw water reaching Kilpauk was examined every day and the results of the weekly averages are shown in Table IX. It will be seen from the table that the water was yellowish and opaque. Ammonical nitrogen varied from trace to 0.013 parts ; albuminoid nitrogen from 0.03 to 0.078 parts per 100,000 : oxygen absorbed varied from 0.177 parts to 0.306 parts per 100,000 and hydrogenion concentration (pH) from 8.6 to 9·3. Nitrites and nitrates were conspicuous by their absence.

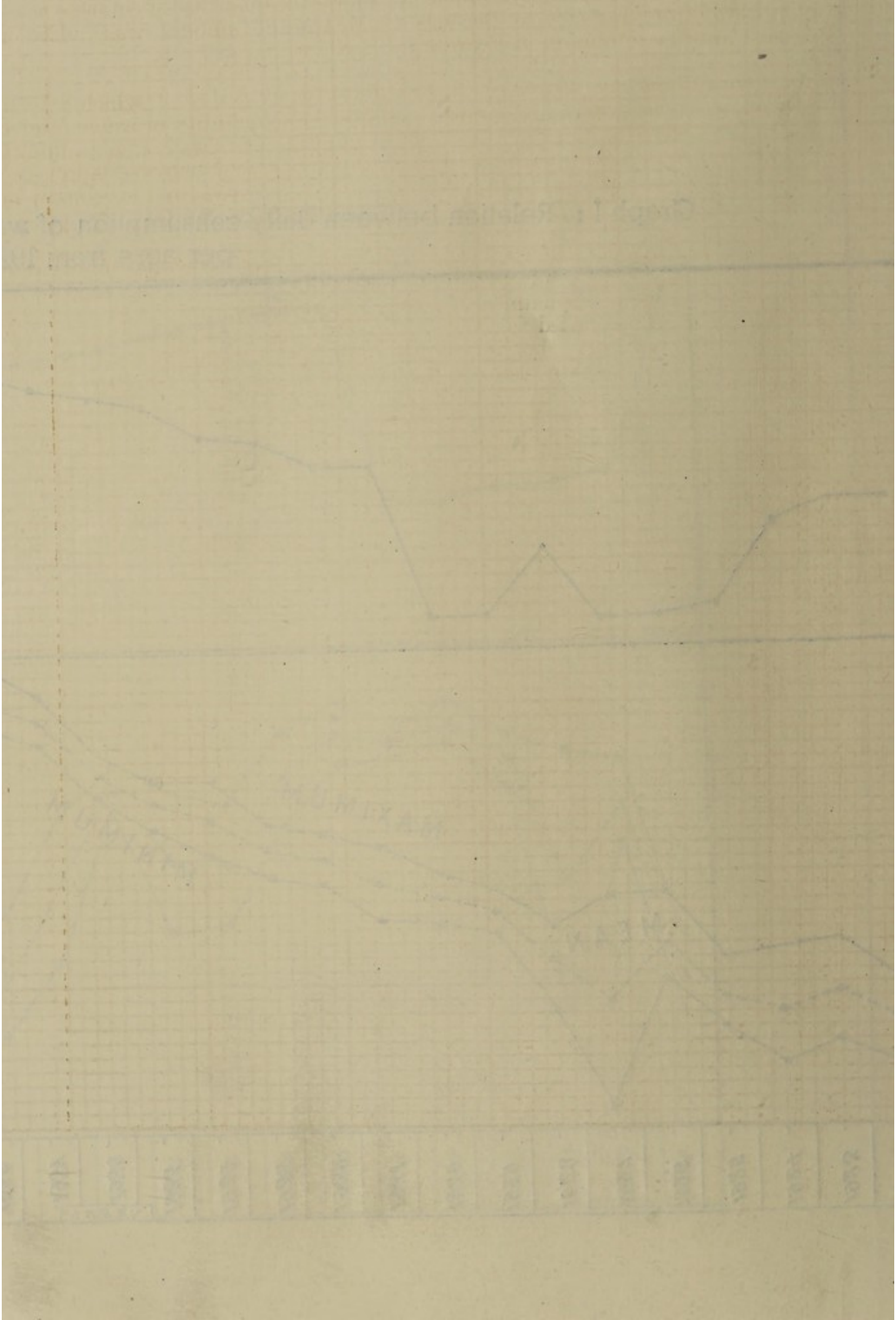
Coliform organisms were present in volumes varying from 0.1 ml to 20 ml and upwards.

Table X contains comparative date for total monthly rain-fall, average monthly lake level, average monthly oxidisable organic matter and albuminoid nitrogen for the last 10 years (1942-1951).

The first 5 years (1942-1946) representated the pre-drought period and the last 5 years (1947-1951) the drought period during which the city had suffered worst. All the figures for the above items are shown graphically in Graph No. II. From a study of the graphs, it will be seen that the lake level seems almost diametrically opposite to organic matter represented by Tidy's figures and albuminoid nitrogen. The last two graphs run almost parallel to each other.

Graph I : Relation between daily consumption of water and average density of population per acre from 1922 to 1951





Chlorinated raw water (Pre-filtration water): The raw water reaching Kilpauk was pre-chlorinated just a few minutes before reaching the sand filters as a measure of safety. Table XI shows the quantity of chlorine added month-war from January to December. Maximum amount was added in August and the minimum in February.

Sand filters and filtration: There are 17 sand filters of which 8 to 10 beds on an average were in commission daily. The quantity of water filtered varied from a maximum of 20.66 m.g.d. in January and May to a minimum of 11.66 m.g.d. in December. The annual average dose of chlorine applied to the filtered water varied from a minimum of 1.15 p.p.m. to a maximum of 2.26 p.p.m. during the year.

Table XII and Graph III show the percentage reduction in organic matter at different stages of the water purification system. On account of chlorination, a certain amount of reduction in organic matter is seen. In the case of raw water, it varied from a minimum of nil in November to a maximum of 8.9% in October, but in the case of filtered water, it varied from a minimum of 11.9% in February to a maximum of 24.1% in September.

Special precautionary measures were taken to prevent the formation of sulphuretted hydrogen in the slow sand filters by stopping them as soon as lead acetate papers hung in the filtered water chambers began to show a slight browning. Cleaned beds were always kept in readiness for starting as soon as an old filter was stopped. In this way, it was possible to supply water which was free from H S at the source, although the reservoir water contained an excessive amount of organic matter.

Analysis of Filter Skins from sand filters:

Table XIII contains the results of analysis of filter skins collected from a few filter beds during May, June and July, whenever they went out of action. A study of the table will show that the beds were rich both for flora and fauna. The blood worm (*Dyscampto cladius*); fishes (*Lepidocephalus thermalis*; *Notopterus notopterus* and *Spratelloides malabaricus*); nymphs of dragon fuly (*odonata*), Beetle (*Cybister confusus*), Ostracod (*Stnenocypris*), water bugs (*Anisops varius*), and *Corixa hieroglyphica*, nematod (*Actinolaimus*) Protozoa (*Difflugia*) Gastropod (*Limnaea succinea*) and Oligochacta (*Aelosama*) were among the important animalculars found in millions.

Among the plant organisms, blue-green algae (*Oscillatoria* and *Merismopedia*), green algae (*Scenedesmus Cosmarium*) and diatoms *Novicula Cymbella*, *Pinularia*) were dominant. The weed *Nais Flexilis* was often seen floating in large amounts in the filters.

It is really surprising to note that these organisms were seen thriving in the sand filters inspite of the fact that the raw water just before reaching the filters was chlorinated with a fairly heavy dose of chlorine varying between 1.0 and 2.0 p.p.m.

The under-ground filtered water tanks: The four under-ground filtered water reservoirs in which chlorinated filtered water is stored were cleaned twice during the year. In July, the reservoirs contained millions of the blood worms (*Dyscamptocladius*) and the Ostracada *Cypridopsis*—Fig. IV) along with soft slimy mud from the filters They indicated that they had passed through the sand filters into the under-ground filtered water tanks.

---

*My special thanks are due to Professor Dr. August Thienemann. Director of the Institute of Hydrobiology in Plonn West Germany. for the identification of the blood worms and to Mr. P. I. Chacko, M.A., F.Z.S. Assistant Director of Fisheries, Madras Fisheries Service. for help in the identification of the animalcules seen in filter beds.

Distribution systems: The results of analysis of samples drawn from the distribution system which is supplied by the Red Hills Reservoir water are shown in Table XIV, XV, XVI and XVII.

Table XIV and XV contain the results of chemical and bacteriological examinations of samples drawn from the high pressure and low pressure areas of the city and the tables XVI and XVII from the Booster areas for assessing the condition of the distribution system in respect of quality of the supply. It will be seen that the quality of water supplied to the out-lying areas of the city is generally poorer from the qualitative and quantitative aspects. In April. May. June. July and September, the low pressure areas showed the presence of H_2S and also contained fewer first class samples (absence of coliform bacteria in 60 ml).

Infiltration galleries: The water supplies to Sembiam and Saidapet are made from two infilteration galleries. The quantity of water supplied month-war from Saidapet during the last five years is shown in Table XVIII. On account of the drought, the water supply to this area was gradually reduced. Table XIX contains the results of analysis of the physical, chemical and bacteriological conditions of the water during the year. The water was colourless and clear, fairly hard and palatable throughout. Bacteriologically the water was poor in quality and so was chlorinated.

Tables XX and XXI contain all data pertaining to the gallery water at Sembiam. This water differs from the other gallery water in that the former contains a fairly large amount of iron which has to be treated with lime. The content of iron was found to vary from 0·07 to 0·18 parts per 1,00,000 during the year.

Table XXII contains the results of chemical examination of sambles collected from the distribution system of the two infiltration galleries and Table XXIII the results of bacteriological examination from the same sources.

Emergency Measures of Water Supply:

Surface wells:—Of all the surface wells, the well located at Richard's Park in Saidapet was connected to the distribution system since April 1950 and was supplying water to a portion of Saidapet. Table XXIV shows the quantity of water supplied by this well from April 1950 to the end of December 1951. Table XXV shows the results of examination of samples collected month-war from February to August 1951. It will be seen that the "total solids" had exceeded the permissible limit of a potable water supply, but the water was colourless and clear throughout. Table XXVI contains the results of analysis of samples of water drawn from surface wells which were used as sources of emergency well water supplies during the year.

Special Investigations:

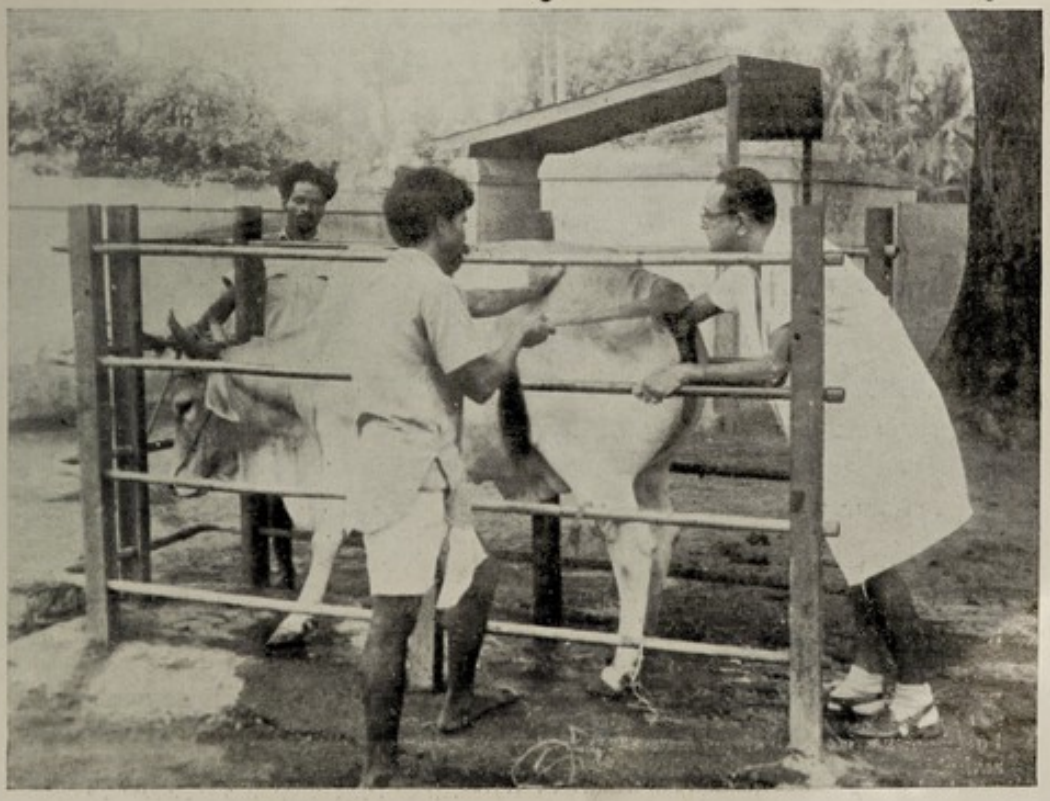
Two important investigations were made during the year:- (1) about Sembiam water supply (2) about Sterilisation of water mains.

(1) *Sembiam water supply*:—As suggested by the Sanitary Engineer, the following experiments were carried out for a week, the results of which are given below under the following headings:

1. The quality of the Sembiam gallery water.
2. The character of the lime treated water as supplied now and the the percent of available CaO in the lime powder used.
3. Results of "Calcium Carbonate stability" test carried out with the lime treated water as supplied now.
4. Dosage of lime required under laboratory conditions.
5. Conclusions and suggestions for improvement.

Fig 4. CYPRIDOPSIS Sp
an ostracoda found in millions on 18—7—51
on the floor of the underground filtered water
tanks No III & IV

Fig 5 A magnified view of the animalcule-
CYPRIDOPSIS (OSTRACODA)



Veterinary Dispensary—Mylapore

1. *The quality of Sembiam gallery water* :—A few important tests were carried out with the Sembiam gallery water for about a week and their results are shown below.

RESULTS EXPRESSED IN PARTS PER 100,000

Date	Free Co_2	Alkalinity to		P. H.	Total iron
		Phenol-phthalein	Methyl orange		
2—11—1951	2·60	Nil	11·4	6.9	0·080
3—11—1951	2·90	,,	11·1	6·8	0·060
5—11—1951	2·67	,,	11·6	6·8	0·040
7—11—1951	2·66	,,	11·3	6·8	0·085
9—11—1951	2·45	,,	12.2	7·0	0·090
		,,			

It will be seen from the above that the infiltration gallery water is nearly neutral in character with a P. H. of 6·8 to 7·0 and containing iron whose content varies from 0.040 to 0·090 parts per 100,000, Low P. H. values permit corrosion. As its iron content is also high, its removal is necessary to prevent deep red staining of clothes etc. The water therefore is being treated with lime for these causes.

2. *The character of the lime treated water as supplied*:—The results of the important tests carried out with lime treated water are shown below :

RESULTS EXPRESSED IN PARTS PER 100,000

Date	Free Co_2	Alkalinity to		P. H.	Total iron	Dosage of lime
		Phenol-phthalein	Methyl Orange			
2—11—1951	Nil	2·1	4·9	9·6	0·010	17·14 gr. per gallon
3—11—1951	,,	4·5	6·4	8·7	0·008	,, ,,
5—11—1951	0·4	Nil	8·0	8·7	0·015	,, ,,
7—11—1951	Ni	1·0	7·2	9·0	0·002	9·3 ,,
9—11—1951	,,	1·5	5·3	9·3	0·007	13·59 ,,

It will be evident from the above that after lime treatment (1) the free carbon dioxide content of the gallery water is reduced, (2) the penolphthalein alkalinity and P. H. have increased while the Methyl Orange alkalinity and iron content have decreased. The amount of iron is also very low, (3) the dosage of lime has besn widely varying from 9·53 grains to 17·14 grains per gallon.

3. *P.* H. *Control* : The Sanitary Engineer has suggested that theP. H. of the lime treated water should be kept under control. The high P. H. values for the treated water would seem to show that the water has been treated with excessive amount of lime. So, in order to find out whether the dosage

of lime has been excessive, a series of "calcium carbonate stability" tests were carried out. The results are shown below :

Date	Lime treated					$Ca Co_3$ stability test					Remarks
		Alkalinity					Alkalinity				
	Free Co_2	P.T.H.	M.O.	P.H.	Iron	Free Co_2	P.T.H.	M.O.	P.H.	Iron	
2-11-1951	Nil	2.1	4.9	9·6	0·010	Nil	0·7	3.0	9·3	0·004	Decrease
3-11-1951	„	4·5	6·4	8·7	0·008	„	3.9	5·2	9·6	0.002	Increase
5-11-1951	0.4	Nil	8.0	8·7	0·015	0·4	Nil	11·5	8·3	0·002	„
7-11-1951	Nil	1.0	7·2	9·0	0·002	Nil	0·6	6·3	8·6	Nil	Decrease
9-11-1951	„	1.5	5·3	9·3	0·007	„	0·9	3·6	8·9	„	„

P. T. H —Phenolphthalein
M· O.—Methyl Orange

From a study of the above table, it will be seen that in three out of the five cases, there is a definite decrease in P. H. or alkalinity, showing thereby that there is a tendency for the lime treated water to form a protective deposit in the pipe lines and that the water as supplied now is non-corrosive. Iron content also is very low. So, the dose of lime added seems to be satisfactory.

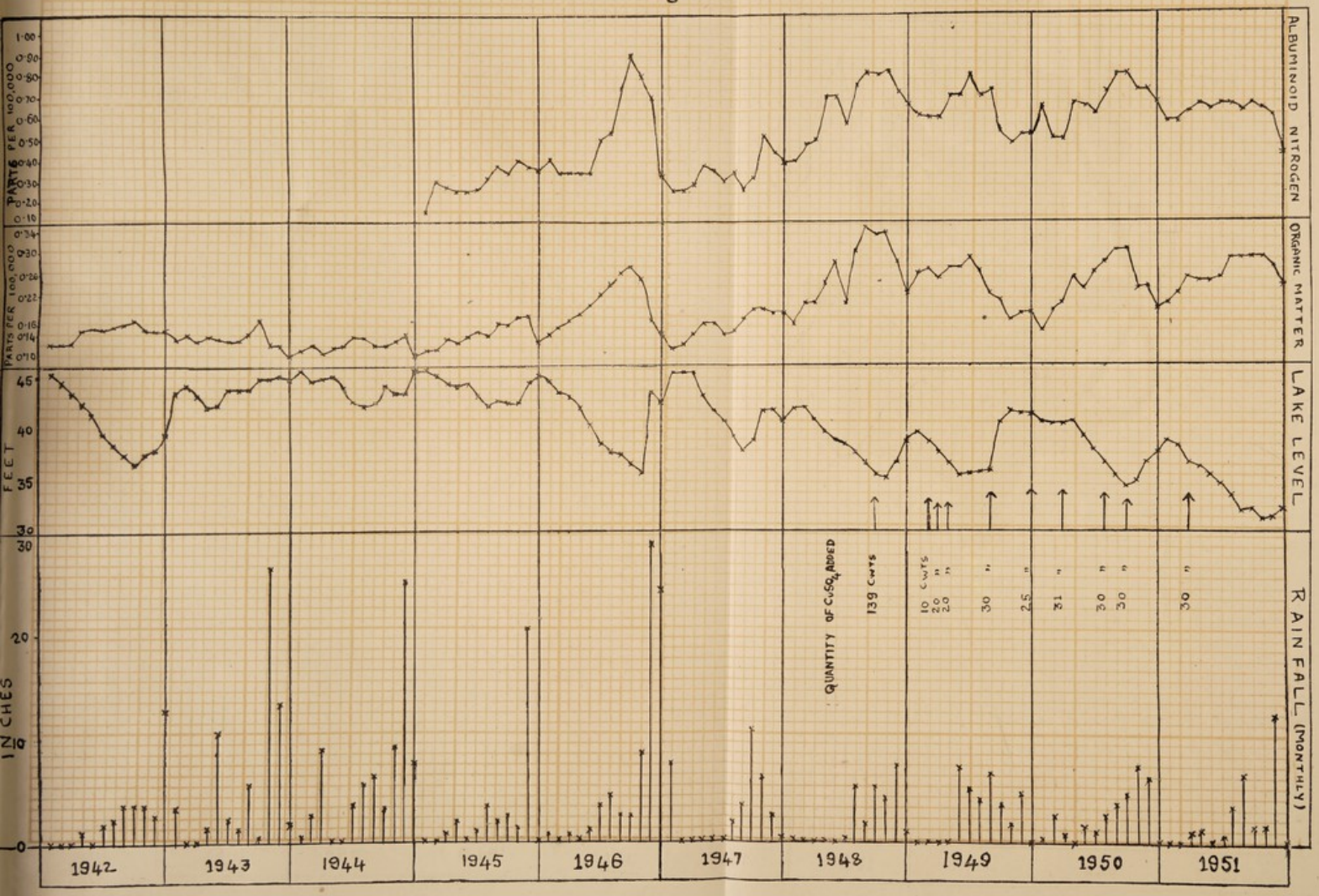
Again, considering the P. H. values of the treated water, they also do not seem to be excessive or above the permissible limits of a drinking water supply which has been treated with lime and soda, according to United States Public Health Service Standard (1942). According to these standards, it is stated that the concentration of P. H. should not exceed 10. 6. Therefore, the P. H, values of the Sembiam lime treated water do not seem to be excessive except in one case alone i. e. on 3-11-1951 when there was an increase on P. H. or alkalinity.

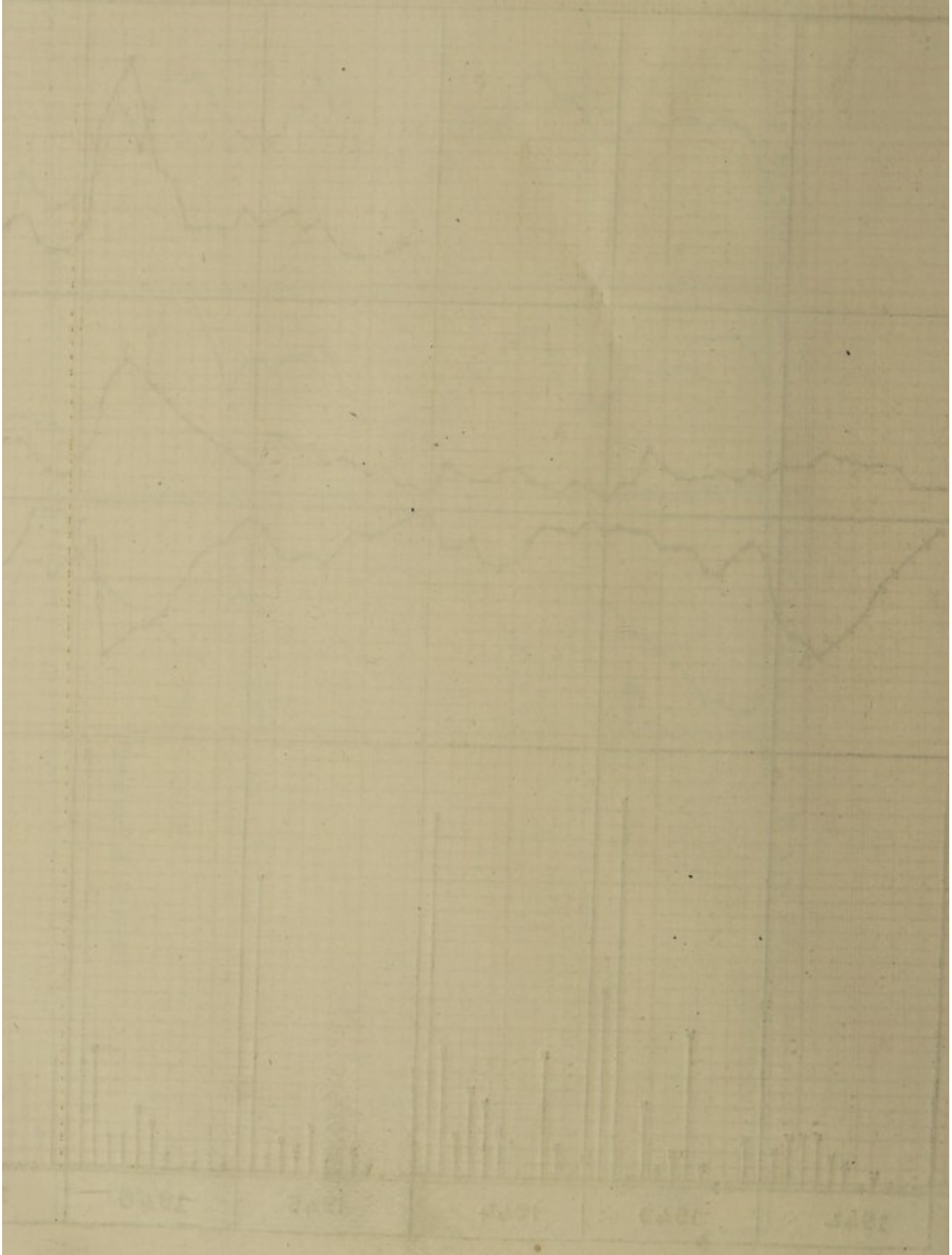
4. *Dosage of lime required*: Varying dosages of lime were added to the gallery water and the results of a few tests carried out with each dosage are given below :

Date	Dosage (grains per gallon)	Free Co_2	Alkalinity to		P. H.	Iron
			P. T. H.	M. O.		
2—11—1951	0·0	2·6	Nil	11·4	7·0	0·080
„	0·5	0·65	„	12·1	8·3	0·005
„	1·0	0·55	„	12·0	8.3	0·001
„	1·5	0·55	„	11·6	8·3	Nil
„	2·0	0·45	„	11·7	8·3	„
„	2·5	0·45	„	11·9	8·3	0·001
„	3·0	0·43	„	12·0	8·3	Nil
„	3·5	0·45	„	12·2	8 3	0·001
„	4·0	0·40	„	12·5	8·3	0·004
9—11—1951	0·0	2·45	„	14·89	7·0	0·090
„	5·0	0·55	„	15·74	8·3	Nil
„	6·0	0·45	„	15 74	8·3	„
„	7·0	0·40	„	15·62	8·3	„
„	8·0	0·38	„	17·08	8·3	„
„	9·0	0·32	„	16·23	8·3	„
„	10.0	Nil	0·96	11·96	8·9	„

P. T. H—Phenolphthalein
M. O.—Methyl Orange

Madras City - Graph II Relation between Rainfall, Lake Level, Oxidisable Organic matter (Tidy's) and Albuminoid Nitrogen for 1942 - 1951





The lime requirements of the Sembiam gallery water seems to be about 10 grains per gallon. It is essential that the dose of lime should be based upon actual day-to-day experiments and the addition of lime calculated upon the stength of available or active lime in the powder used. Frequent tests of the strength of the lime powder used are necessary for adding the required quantity of lime powder and they are being done.

As regards the method of addition of lime solution, it has been remarked that it is not being done in a satisfactory manner by the Director of King Institute and the Sanitary Engineer to Government.

Brief report on the injectioniing of water mains with chlorine during the year 1951:

The special committee appoinfed by the Government in September 1948 to suggest measures for overcoming the acute smell trouble during the recent drought stated that a systematic attempt at sterilisation ef the water mains by sectionalising them (Memo No. 78269/148-5 F dated 2-12-1948) should be made. The technique of sterilisation of the mains was suggested by the Director, King Institute, in his Memo C. No. 16810/c6/51 dated 14-5-1951.

In accordance with the suggestions of the Director, a scheme for the sterilisation of the old water mains was prepared and approved for 6 months, to begin with, from 15th July 1951 to January 1952 and thereafter, for a period of 1 year and 3 months ie., from January 1952 till 31st March 1953. One Assistant Analyst on Rs. 150 per mensem fixed plus allowances was appointed from 15th July 1951; two attenders. one on 15th August 1951 and the other on 11-3-1952 on Rs. 30 per mensem plus the usual allowances and one Peon from 15tn August 1951 on Rs. 20 per mensem plus the usual allowances were also appointed for this purpose. The work was started on 1st August 1951. A motor van was placed at the disposal of the Analyst for this purpose, which carried all the kit necessary for carrying out field tests as suggested by the Director. Samples were collected every half an hour at one or two chosen points in a particular part of the main receiving treatment, the distance of the points varying in each case from a few furlongs to a mile or two. The length of the pipe line from the point of injection of chlorine to the spot whose residual chlorine is detected is taken as the treated length of pipeline.

A Bell's Injector type of chloroname was used for the purpose. A summary of the results is given below :—

1	Period of sterilisation	15th July 1951 to 31st March 1952
2	Length of pipe line treated	7·2 miles.
3	Size of pipe treated	20"
4	Average number of hours per day treated ...	3 hours
5	Quantity of chlorine added	3635·3 lbs.
6	Estimated average dose of chlorine ...	9·1 p.p.m.
7	No. of samples taken for analysis:	
	(a) chemical	324
	(b) Bacteriological	278

The results of analysis of samples collected from the treated mains were generally satisfactory. Table XXVII shows the average results of analysis of samples collected before and after sterilitation of water mains from August 1951 to March 1952. It is necessary that this work should be continued until all the mains are properly sterilised.

Research on Red Hills Reservoir Water :

The report of the Water and Sewage Purification Committee for the half-year ended 31-12-1951 contains valuable information on the four points detailed below :

Break point method of chlorination for treating Red Hills lake water prior to slow sand filtration : The results obtained during the half year under report generally confirmed the findings made earlier viz.,

(a) that pre-treatment with chlorine increases the quantity of water filtered per uint area cleaned ;
(b) yields " a sterile filtrate " while that from mere ordinary slow sand filter contains 4 to 75 organisms per 100 ml ;
(c) prevents the production of H_2S in the filter ;
(d) greater reduction (22·5%) in the oxygon absorbed value ;
(e) the dissolved oxygon content of the raw water becomes depleted on passing through both the break point and the control sand filters ;
(f) the Committee concluded that (i) the method offered yet another means of removing the odour in the Madras City water supply and (ii) the experiment should be repeated on a full scale using two of the Corporation sand filters.

Of the above, the three results (b), (c) and (e) are of great interest and need an explanation. If a sterile filtrate is obtained as a result of slow sand filtraion of the Red Hills Lake water which is treated with " break point chlorination " prior to reaching the filter and if no H_2S is also produced, it is necessary to know then how the depletion of oxygen is brought about. Information on this interesting point is not furnished although it is stated on page 3 of their half-yearly report ended 31st December 1950, as follows :

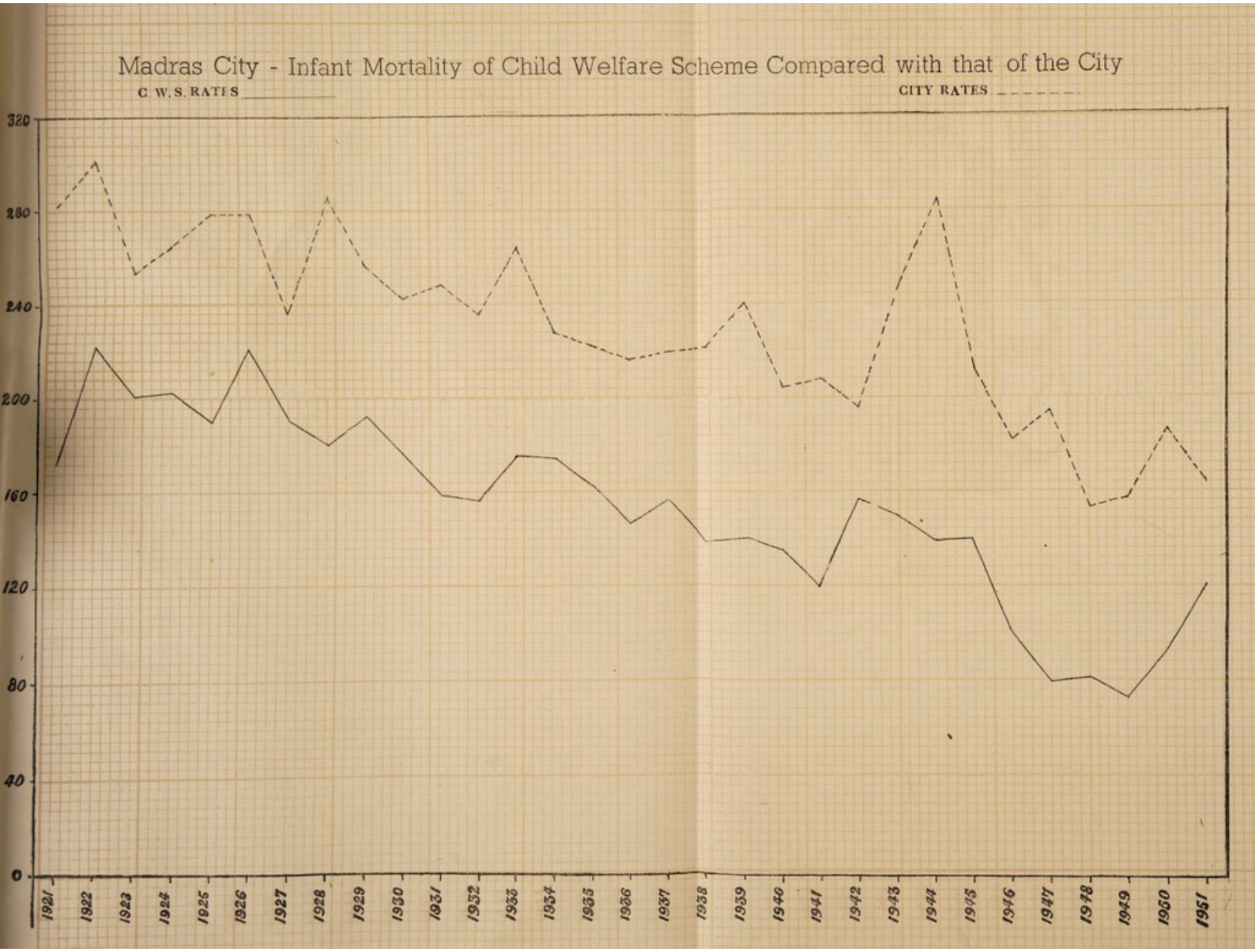
" The reason for the oxygen depletion is not apparent. The present results appear to indicate, however, that the biological activity of bacterical and other organisms may not be the predominant cause for this phenomenon. The problem is under further study."

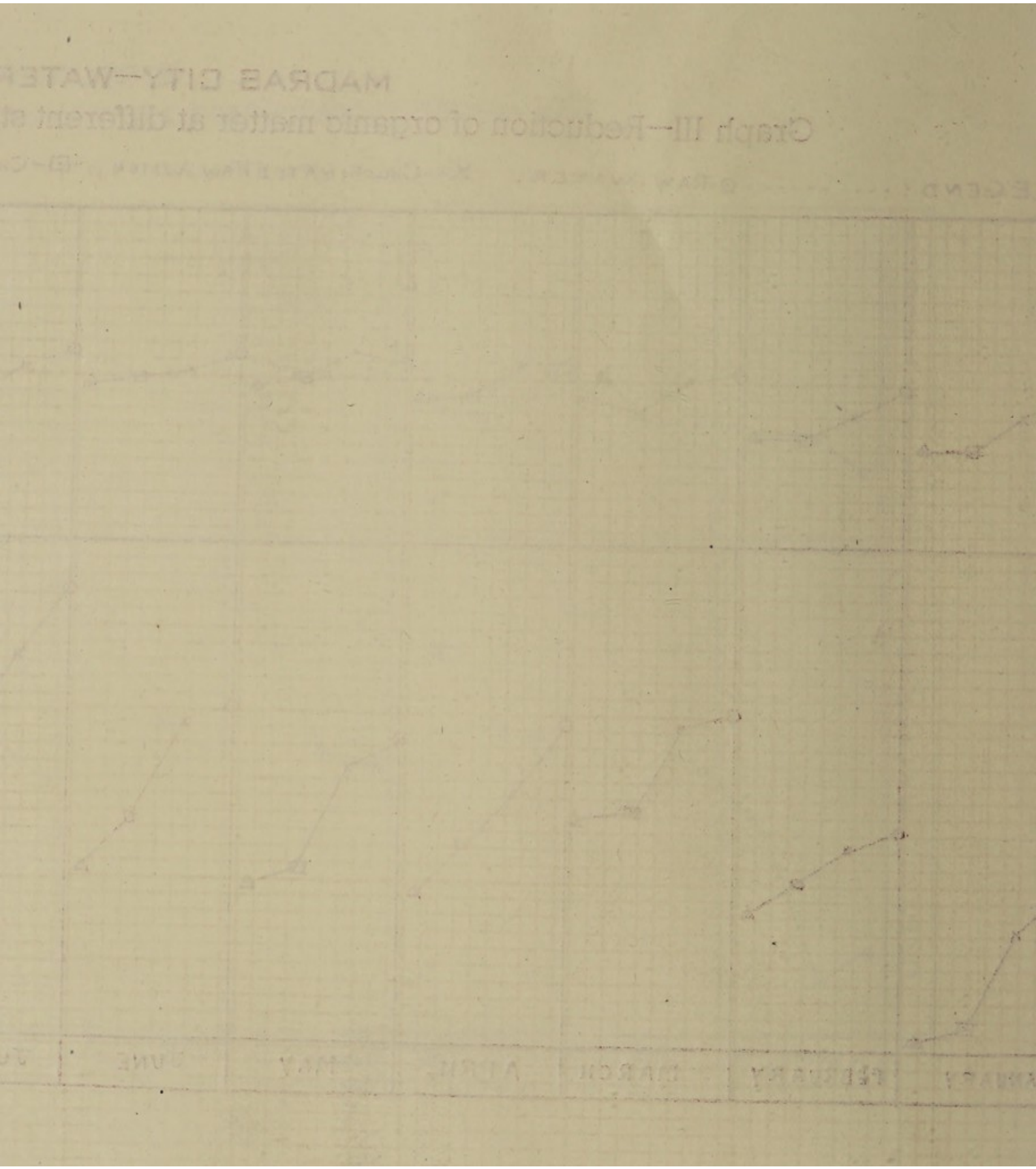
If it is not bacterical, can it be chemical ? Further research work on these lines will be watched with interest.

Secondly, bleaching powder is used as the chlorinating agent in their experiments and it is known to contain lime, which is equally a bactricidal agent like chlorine. Therefore, the results of the Committee's experiments may have to be attributed to two causes, viz., lime and chlorine and not to break point chlorination only. So the above " break point chlorination experiment " if repeated with pure gaseons chlorine and lime alone separately as a sterilising agent is likely to throw valuable information.

The Committee is of opinion that the iron salts contained in concentration above the normal permissible limits in the fitration well water of Kozhikode must be removed by lime and alum treatment followed by settlement and filtration. Result of this is of interest to us and is annexed.

Mechanical filtration followed by slow sand filtration : The experiment was designed with a view to obtaining data on the performance of a slow sand filter when it is fed with water from which the suspended organic and mineral impurities have been previously removed. It was expected that by this experiment useful informstion could be obtained about the behaviour of the slow sand filter on receiving micromesh strained Red Hills lake water.


Madras City - Infant Mortality of Child Welfare Scheme Compared with that of the City
C.W.S. RATES
CITY RATES
320
280
240
200
160
120
80
40
0
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951



Chlorination of Red Hills lake water prior to sand filtration : It is stated that the Red Hills lake water treated with 0.5 p. p. m. of Ammonia and 15 p.p.m. of chlorine became sterile as regards coliforms in 15 minutes of treatment.

The filtered water in the first run of the filter did not contain H_2S, contained a fairly high residual of combined chlorine which persisted in bottles for nearly 3 days.

The experiement is in progress, It is suggested that this experiment if repeated with pure gaseons chlorine alone instead of bleach is likely to throw more useful information.

Staff

Mr. V. Kripakaran, B.Sc., continued to be the Acting Water Analyst until 29th March 1951 when he was succeeded by the permanent incumbent Sri. S. V. Ganapahi, B A., M.Sc. A R.I.C., who had gone on deputation on foreign service to the Madras Government, Fisheries Department, as their Fisheries Hydrologist from 7th June 1945 to 29th March 1951. The other permanent assistants who continued to help the Water Analyst during the year under report wera Sri V. Kri pakaran, B.Sc., and Sri G. Devadoss B.Sc. Mr. George Samuel, B.Sc., was appointed as an additional assistant for the sterilisation of water mains; and Mr. Rajaganapathi B.Sc., as a fourth assistant for the chlorination of wells used as emergeney sources of water supply.

S. V. GANAPATI, B.A., M.Sc., A.R.I.C.
Water Analyst

Report of the Public Analyst

The number of samples analysed in the Public Analyst's Laboratory during the year was 5,347. Among these samples, 4,931 were samples analysed under the Madras Prevention of Adulteration Act, 1918, as against 5,061 analysed in 1950. For the second year in succession, more than 5,000 samples were analysed in the Laboratory.

Of the 4,931 samples analysed under the provisions of the Madras Prevention of Adulteration Act, 1918, 2,358 samples were genuine and the remaining 2,573 samples were found to be adulterated. The percentage of adulterated samples for the year was 52·2 against 47·2 in 1950.

The samples consisted of milk, butter, ghee, gingelly oil, groundnut oil, cocoanut oil, coffee powder, tea, ghee substitutes, turmeric and other articles. A statement of the samples analysed in 1951 and in the five previous years is given in the Appendix (Food Analysis-Statement No. 1). A graph showing the number of samples analysed and the percentage of adulteration each year from 1931 is also appended to this report.

The percentage of adulterated samples during 1951 was 52.2, an increase over the figure for 1950. Though there has, no doubt, been a general increase of adulteration during the year the high figure for the percentage of adulteration recorded need not cause any undue alarm in the minds of the public as it is due to the fact that out of 4,931 samples, 2,837 or 58 percent of the total samples were samples of milk, most of which were taken from the itinerant milk vendors, who seldom sell genuine milk.

The very high percentage of adulteration noticed in these samples is reflected in the high percentage of adulteraton during the year. While this regrettable state of affairs continued in the case of the ordinary milk vendors, the Madras Co-operative Milk Supply Union, who are the largest suppliers of milk to the City of Madras continued to supply milk of satisfactory quality to the citizens of Madras. The quality of other foods sold in established shops continued to be fairly satisfactory as compared with samples of milk, though even in these cases, adulteration had not been stamped out effectively.

76·0 per cent of the milk samples were adulterated in 1951 against 72·0 in 1950. The bulk of these samples were taken from the individual professional milkmen of the city and the itinerant milkmen resident in the city and in the surrounding areas. As has been pointed out by me in my earlier reports, so long as the price of milk rules high and the supply is short in relation to demand, the temptation to adulterate would continue. If this temptation is to be effectively curbed and the consumers, especially the smaller ones to whom such milkmen largely cater, are to be effectively protected, the punishment meted out should be sufficiently deterrent. Fines are practically at the level they were several years ago, though the price of milk is at present three times what it was previously. It is not, therefore, surprising that the milk-vendors have ceased to be afraid of the fines in the hope that the illegitimate profits they could make by adulteration would more than outweigh the periodical fines they would be called upon to pay.

The percentage of adulteration of butter in 1951 was higher than in 1950, the respective figures being 30·4 and 24·8. The adulteration of ghee showed a substantial increase during 1951 as compared with 1950, the percentages of adulteration being 24·0 in 1951 and 11·3 in 1950. The adulteration of gingelly oil continued to be comparatively low, the figures

for adulteration for 1951 and 1950 being 12·2 and 12·4 respectively. The percentage of adulteration of groundnut oil in 1951 was 5·3 against 4·7 in 1950. There was a slight decrease of adulteration in the case of cocoanut oil, the percentges of adulteration being 9·8 in 1951 and 11·5 in 1950. It is a matter of great satisfaction to report that during 1951 there was no adulteration of any edible oil with mineral oil. Mineral oil is not a food and is detrimental to health and adulteration of edible oils with mineral oil would have proved to be a serious menace to public health had not this adulteration been stamped out by the effective measures taken by the Corporation. The adulteration of coffee powder increased substantially during the year under report, the percentages of adulteration being 10·2 in 1951 and 2·0 in 1950. This increase might be ascribed to the combined effect of the increase in the price of coffee powder and the enormous increase in the coffee drinking habit and the consequent increased demand on the available supplies. Tea continued to be 100 per cent genuine during the past 18 years, but during the under report, adulteration was noticed in this article also, the percentage of adulteration of tea being 15·2.

None of the 30 samples of turmeric contained lead. In previous years this article used to contain appreciable quantities of lead derived from the lead chromate used for coating turmeric root. Lead is a cumulative poison and therefore the elimination of lead from turneric should be considered a matter of gratification from the point of view of the health of the general public.

The details regarding the various articles of food analysed during the year under report are given below.

Milk: 2,837 samples of milk were analysed. Of these, 1,074 samples were cow's milk, 1,206 were buffalo's milk, 4 samples were goat's milk, 470 were described as misture of cow's and buffalo's milk and 83 were offered for sale under the description of milk without the qualification of cow's or buffalo's.

Of the 1,074 samples of cow's milk, 237 were genuine and 837 were adulterated. Among the adulterated samples, 793 contained added water ranging from 2 to 80 per cent. There was deficiency in fat in 11 samples to the extent of from 30 to 100 per cent and 33 samples were deficient in fat in addition to containing added water. The average values of fat and solids-not-fat for the 237 genuine samples of cow's milk were 5·0 per cent and 9·0 per-cent respectively.

Of the 1 206 samples of buffalo's milk, 302 were genuine and 904 were adulterated. Among the adulterated samples, 850 contained added water ranging from 2 per cent to 79 per cent, 7 samples were deficient in fat to the extent of from 20 to 84 per cent and 47 samples were deficient in fat besides containing added water. The average values of fat and solids-not-fat for the 302 genuine samples of buffalo's milk were 6·8 and 9·4 per cent respectively.

Among the four samples of goat's milk, one sample was genuine and three contained added water ranging from 14 to 32 per cent.

Among the 470 samples of mixture of cow's and buffalo's milk, 101 samples were genuine and 369 were adulterated. Among the adulterated samples, 359 contained added water ranging from 2 to 65 per cent. 3 samples were deficient in fat to the extent of 33 to 67 per cent and 7 samples were in fat besides containing added water.

Of the 83 samples described as milk without any qualification, 39 samples were genuine and 44 were adulterated. 37 of the adulterated samples contained added water ranging from 4 to 78 per cent, 5 samples were

deficient in fat to the extent of 13 to 100 per cent and two samples were deficient in fat besides containing added water.

Among the 2,837 milk samples of all categories, 2,130 samples contained added water. The average content of ad ed water in the 2130 adulterated samples of milk was 29 per cent.

Among the milk samples of all categories, 8 samples contained cane sugar ranging from 1·4 to 7·1 per cent and one sample contained 4·4 per cent cane sugar and 1·4 per cent common salt. The main purpose of the addition of cane sugar to milk is to mask the presence of added water.

Butter: 467 samples were analysed, of which 325 samples were genuine and 142 were adulterated. In 127 of the adulterated samples, the water content ranged from 22·1 to 76·2 per cent, the prescribed maximum limit for water being 20 per cent. 13 of the 127 adulterated samples were also adulterated with fat other than milk-fat besides containing execss water. The remaining 15 adulterated samples of butter had a normal water content, but were however adulterated with foreign fat. The extent of adulteration among the 28 samples of butter which contained foreign fat ranged from 9·4 to 57 per cent.

The average water content of the 325 genuine samples of butter was 17·7 per cent and the corresponding figure for the 127 samples which contained excess water was 44·8 per cent. Among the 28 samples of butter which contained foreign fat, the average percentage of foreign fat was 30.

Ghee: 718 samples were analysed. Of these, 172 samples were adulterated with fat other than milk-fat, the common foreign fat used for the adulteration of these samples being hydrogenated groundnut oil. The extent of adulteration ranged from 10 per cent to entire substitution. The average admixture of foreign fat in the adulterated samples was 62 per cent.

Gingelly oil: 320 samples were analysed, of which 39 were adulterated with groundnut oil. The extent of adulteration varied from 10 to 90 per cent.

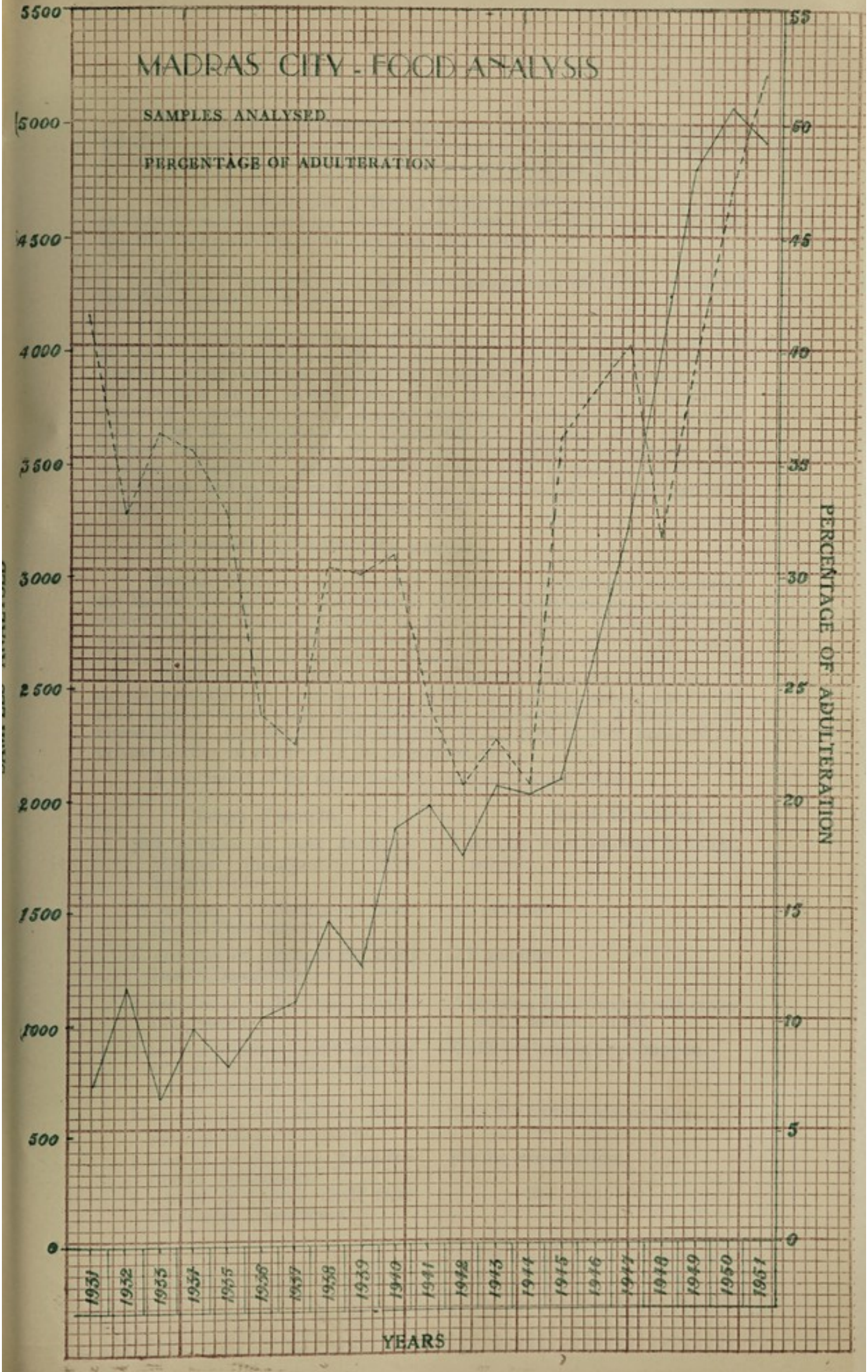
Groundnut oil: 57 samples were analysed, of which 3 samples contained gingelly oil (70 ; 90 and 100 per cent).

Cocoanut oil: 234 samples were analysed and 23 of them were adulterated with groundnut oil. The extent of adulteration varied from 5 to 65 per cent.

Coffee Powder: 176 samples were analysed of which 18 were adulterated. Of ths adulterated samples, 5 samples were adulterated with Bengal-gram, 3 samples with Bengal-gram husk, 4 samples with pea, one sample with coffee pericarp, one sample with spent (exhausted) coffee, one with chicory, one with chicory and an unidentified substance and the remaining two samples were adulterated with unidentified substances.

Tea:—33 samples were analysed, of which 5 were adulterated. Of the 5 adulterated samples, 4 were adulterated with black-gram husk and one with an unidentified substance.

Ghee substitutes: 13 samples were analysed, of which 5 consisted of mixtures of ghee and Vanaspathi. The sale of a mixture of ghee and any other oil or fat is prohibited under Rule 28 of tbe Madras Prevention of Adulteration Rules, 1932.


MADRAS CITY - FOOD ANALYSIS
SAMPLES ANALYSED
PERCENTAGE OF ADULTERATION
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
55
50
45
40
35
30
25
20
15
10
5
0
PERCENTAGE OF ADULTERATION
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
YEARS

Other articles:—There were 76 samples under this head. These consisted of 29 samples of Toovar Dhall, 30 samples of turmeric, 16 samples of sweetmeats taken from restaurants and one sample of pea flour.

Out of the 29 samples of Toovar Dhall, 4 were reported as adulterated as they contained a coal-tar colour, the addition of which is prohibited under the Madras Prevention of Adulteration Rules, 1932.

All the 30 samples of turmeric were genuine and all of them contained less than 5 parts of lead per million.

16 samples of sweetmeat (4 samples of Janghri, 3 of Badusha, 7 of Mysore Pauk and 2 of wheat Halva) were analysed with a view to finding out whether genuine ghee was used for the preparation of the sweetmeat or not. This question arose because some of the hotels were declaring either by means of a board or orally that the sweetmeats were prepared in genuine ghee. The fat from the dried sweetmeats was extracted with ether in a Soxhlet apparatus and the dry ether-free filtered fat was analysed. The analysis showed that genuine ghee had been used in the case of 12 of the sweetmeats and in the case of the other 4 samples, ghee adulterated with foreign fat (42 to 87 per cent) had been used.

The samples of Pea flour was genuine.

Besides the formal samples dealt with above which were taken under the Madras Prevention of Adulteration Act, 416 miscellaneous samples were examined in the laboratory during the year under report. Of these, 339 were samples of milk taken informally from the Madras Co-operative Milk Supply Union in order to check the purity of the milk before it was distributed to the City. These were in addition to the formal sample taken regularly from the depots and delivery boys of the Union, which are included among the formal milk samples dealt within the earlier part of this report. Among the 416 miscellaneous samples are also included 28 samples of food analysed for private parties on payment of the prescribed fees.

A statement of the miscellaneous samples is given below .—

Nature of sample.	Result of analysis.
339 samples of milk from the Madras Co-operative Milk Supply Union.	5 samples were deficient in solids-not-fat.
12 samples of gingelly oil from Health Department.	All genuine.
6 samples of cocoanut oil from Health Department.	All genuine.
8 samples of milk from Health Department.	5 genuine, 2 adulterated with water and 1 deficient in fat.
1 sample of tapioca and 2 samples of Sweet potato flour from the Health Department.	Unfit for human consumption.
1 sample of milk powder from the Education Department.	Unfit for human consumption.
1 sample of Horlicks from the Health Department.	Fit for consumption.
1 sample of Toovar dhall from the Health Department.	Do.

2 samples of Bleaching powder from Health Department.	26.8 and 24.4 per cent available chlorine.
15 samples of Transformer Oil from the Electrical Department.	Reports on the inorganic and organic acidities were made.

The remaining 28 samples were analysed for private parties on payment of fees and these comprised 15 samples of ghee, 1 sample of butter, 6 samples of cocoanut oil, 3 samples of toovar dhall, 1 sample of coffee powder, 1 sample of milk powder and 1 sample of Halwa. The sample of Halwa was analysed for the Sub-Magistrate, Ambasamudram, who required a second opinion on the sample of Halwa in a case, where the vendor had pleaded not guilty. The ghee used for the preparation of the Halwa was adultrated with 54 per cent of foreign fat. The amount of fees collected during the year under report was Rs. 180 against Rs. 410 in 1950.

A tabular statement of the action taken on the adulterated samples of 1951 and those of 1950 pending disposal on 1st January 1951 is given in the Appendix (Food Analysis—Statement No. II).

The number of samples reported as adulterated during the year under report was 2,572. Action taken in respect of these samples is given below:

Warning of vendors in cases where adulteration was slight.	32
Prosecution of vendors	2,540
Total ...	2,572

Of the 2,540 prosecutions instituted, convictions were obtained in 1233 cases. There were 10 acquittals and the remaining 1,297 cases were pending disposal on 31st December 1951. Among the 1,453 cases of the previous year pending disposal 585 convictions were obtained.

The total number of convictions for the sale of adulterated articles of food in 1951 was 1,817 as against 1,867 in 1950. The amount of fines imposed in 1951 was Rs. 6,647 against Rs. 61,313 in 1950. The average fine per conviction in 1951 was Rs. 34 against Rs. 33 in 1950. Among the convictions of 1951, there were 30 cases relating ot samples of butter taken from restaurants and 33 cases relating to samples of ghee taken from restaurants and meals hotels.

During the year under report, there were 19 convictions under section 14 (3) of the Madras Prevention of Adulteration Act for preventing the Food Inspector from taking samples under section 14 (1) of the Act and the fines imposed amounted to Rs. 475.

The undermentioned persons continued as my permanent assistants:

1. Sri S. Sundaram, M.A., 1st Assistant.
2. Sri R. Ramalingam, M.Sc., 2nd Assistant.
3. Sri V. V. Ramana Rao, M.Sc., 3rd Assistant.

During the year, I was on leave for a period of two months from 25th October 1951 during which period my first Assistant, Sri S. Sundaram, acted in my place as Public Analyst.

Before concluding, I have once again to point out that inspite of my emphasizing the need for sufficiently deterrent fines in Food Adulteration cases, the fines in 1951 have continued to be as low as in 1950. The average fine per conviction has progressively declined year by year from Rs. 59 in 1944 to Rs. 34 in 1951. When it is remembered that the prices of all the food-stuffs have risen enormously during the same period, (1944-'51), there would seem to be no justification for any fine lower than Rs. 100 per conviction and even this because the Madras Prevention of Adulteration Act, which did not evidently contemplate the soaring of the prices of food-stuffs to the present levels, has prescribed a maximum of only Rs 100 per conviction for the first offence. Unless the Magistrates cease to consider offences under the Food Adulteration Act as petty offences and unless they take a serious view of such offences and impose sufficiently deterrent fines, the Corporation cannot achieve complete success in their efforts to eradicate adulteration of food-stuffs in the City of Madras.

V. VENKATACHALAM, M.A., A.R.I.C.,
Public Analyst

Report on the Child Welfare Scheme for the year 1951

I have great pleasure in presenting my first Annual Report of the Child Welfare Scheme for the year 1951 as permanent Lady Superintendent, Child Welfare Scheme. It may be mentioned at the outset that the Scheme was able to enlarge its scope and activities during the year under report besides the continuance of its useful and normal work. The outstanding features during the year were(1)the opening of a maternity ward at Kothawal Bazaar centre on 23-2-51 already mentioned in the report for 1950, (2) the opening of two creches, one at the Royapuram Child Welfare Centre on 4-6-51 and the other at Chetpet Centre on 29-12-51 and (3) the starting of Serological examination of blood of all the ante-natal cases in the Choolai Maternity Home and Saidapet Maternity and Child Welfare Centre in September 1951 and November 1951 respectively. The total number of blood samples examined, the number of positive, negative and doubtful cases, the result of corresponding Khan test and the number of positive cases treated during the short period in 1951 are furnished below :—

No. of blood samples examined 1	No. of positive cases 2	No. of negative cases 3	No. of doubtful cases 4	Result of correspond-ing khan test 5	Number treated 6
602	30	557	15	17	22

The Advisory Board constituted in August 1949 under the advice of the Governing Body and Scientific Advisory Board of the Indian Research Fund Association, New Delhi, for investigation of maternal deaths and formulating suggestions for improving maternity services made the following recommendations :

1. Grouping of the centres into zones to be attached to various hospitals in the City.

2 Resident Medical Officer to be made available at all maternity centres.

3 Increasing number of beds in various Maternity Homes.

4 Inspection of various Maternity Homes to suggest improvements.

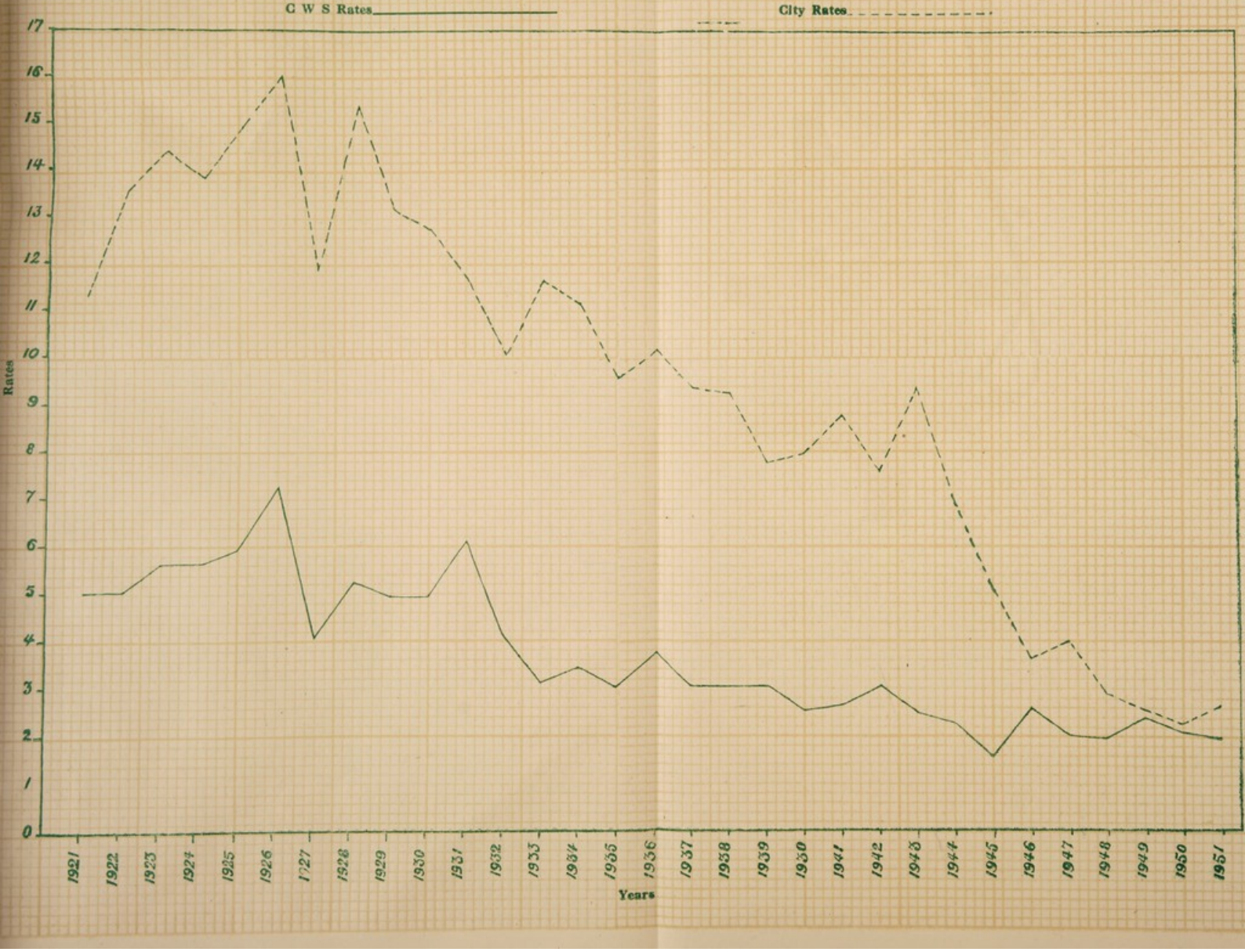
5 Blood Transfusion Service to serve the Maternity Homes.

6 Refresher course for medical officers, health visitors and midwives once in 3 or 5 years.

7 Facilities to be afforded to the hospital authorities, to know the history of the case.

In pursuance of the recommendations mentioned above,all the maternity and child welfare centres were grouped into zones to be attached to the various hospitals in the City. A second lady doctor was appointed in the Choolai Maternity Home on 6-6-50 with a view to having the services of a lady doctor always in the Home. The question of appointing additional lady doctors in other Maternity and Child Welfare Centres is under consideration. The number of beds in the maternity wards is being increased every year. Ali the available particulars are being furnished to the hospital authorities so as to enable them to know the history of the labour cases admitted in the hospitals. The other recommendations of the Advisory Board (viz) inspection of various Maternity Homes to suggest improvements, Blood Transfusion service to serve Maternity Homes and the refresher course for medical officers etc. will be implemented in due course.

Madras City–Maternal Mortality of Child Welfare Scheme Compared with that of the City 1921 – 51



Maternity and Child Welfare Centres: There were 23 Child Welfare Centres, 4 sub-centres, one Maternity Home, 16 Maternity wards and 3 Creches at the end of the year under report. The number of beds in the maternity wards was 199 against 174 in the previous year showing an increase by 25 beds. Non-availability of suitable buildings for locating maternity wards continued to exist and hence new centres could not be opened during the year. However two creches were opened during the year, one at the Royapuram Centre and other at Chetpet Centre as already stated.

The creches are intended for the benefit of working mothers so that they can work care free leaving their children to the care of the doctors in charge of the creches. Children under the age of six are admitted in the creches. They are left in the creche by the mothers before they go for work in the mornings and are taken back home in the evenings. During their stay in the creche from 8 a.m. to 5 p.m., the children are given the necessary toilet, change of clothing, nourishing food, adequate rest, games and nursery education. The nursery trained teacher teaches them action songs, story telling, moral instructions, hand craft and prayer. Any ailment of the children is attended to by the doctor and treated immediately. The average number of children looked after daily in Broadway, Royapuram and Chetpet creches is 53, 30 and 23 respectively. The expenditure incurred on the maintenance of the creches for the year 1951—52 was Rs. 19,354.

Staff: Capt. (Miss) C. N. Rukmini, M.B., B.S. was incharge of the Scheme throughout the year as officiating Lady Superintendent till 17-1-51 when she became the permanent Lady Superintendent. There were 28 lady doctors including one relieving lady doctor, 32 qualified health visitors, 3 general trained nurses, 230 midwives and 27 compounders including one relieving compounder under the Scheme.

Pre-natal clinics: Pre-natal clinics were conducted thrice a week regularly in each centre. Expectant mothers were advised to attend these clinics by the health visitors and midwives during home visits. 40,639 new expectant mothers attended the clinics and were given medical advice and treatment by the lady doctors against 3 ,430 in 1950. The health visitors registered 41,174 expectant mothers in the houses of the patients against 37,569 registered in the previous year. The patients were advised by the lady doctors and followed up by the health visitors till their confinement. A large number of mothers were benefited by the instructions, advice and treatment given at these centres.

Maternity Service: The total number of births in the City for the year was 58,961 against 52,619 in the previous year. The number of labour cases that came under the care and observation of the Scheme was 29,931 against 26,957 in the previous year of which 26,318 were non-Muslims and 3,613 Muslims 12,052 births were conducted in the Corporation maternity wards during the year against 10,374 in the previous year. The midwives paid 2,51,530 visits, the health visitors 1,21.747 visits and lady doctors 30,734 visits in the houses of the patients against 2,41,424 visits, 1,49,312 visits and 30,318 visits respectively paid by them in the previous year. Among births there were 249 twins.

A sum of Rs. 19,422-0-0 was collected during the year as fees for maternity services rendered to patients whose income ranged from 81 to Rs. 200 per mensem against Rs. 18,636—8—0 for 1950. This is a clear indication of the growing popularity of the Scheme expecially among the middle class people in the City.

Maternal mortality: Out of 29,931 cases of labour that came under the care of the Scheme, 57 cases of maternal mortality were recorded as noted

below against 54 cases in the previous year. The mortality rate works out to 1·90 per mille against 2·00 in 1950.

	Maternal Deaths 1951	1950
Child Welfare Scheme ...	5	7
Hospitals ...	48	46
Private doctors ...	4	...
Vaidyans ...	...	1
	57	54

Infant Mortality: Out of 26,957 babies born in the year 1950. 677 were still births. The remaining 26, 280 babies were kept under observation during the first year of life in 1951 against 27,256 babies kept under observation during 1950. The mortality among live births was 2,871 against 2,352 in the previous year. 2,969 babies left the City or were otherwise not traceable against 2,632 in the previous year. The infant mortality rate was 123·16 per mille against 95.52 per mille in 1950. No specific reasons can be assigned for the increase in the infant mortality rate. But it may be stated that since the Child Welfare Scheme is dealing mostly with very poor class of people, the death rate evidently has increased due to the poor economic condition of the people, famine and other allied causes which is prevalent among the poor.

Out patient clinics: The lady doctors conducted out-patient clinics in all the centres as usual. Infants, pre-school children, expectant and nursing mothers were examined, advised and treated for minor ailments. 60,638 infants, 40,257 toddlers, 72,178 nursing mothers and 40,639 expectant mothers represent the new cases that were treated and advised. The total number of new cases that attended the clinic was 2,13,712 and the number of old cases was 4,51,779 making total of 6,65,491 cases.

Ambulance: Two ambulance cars were maintained for removing emergent cases of labour to the various hospitals in the City. 2,329 such cases were removed to the hospitals during the year under report.

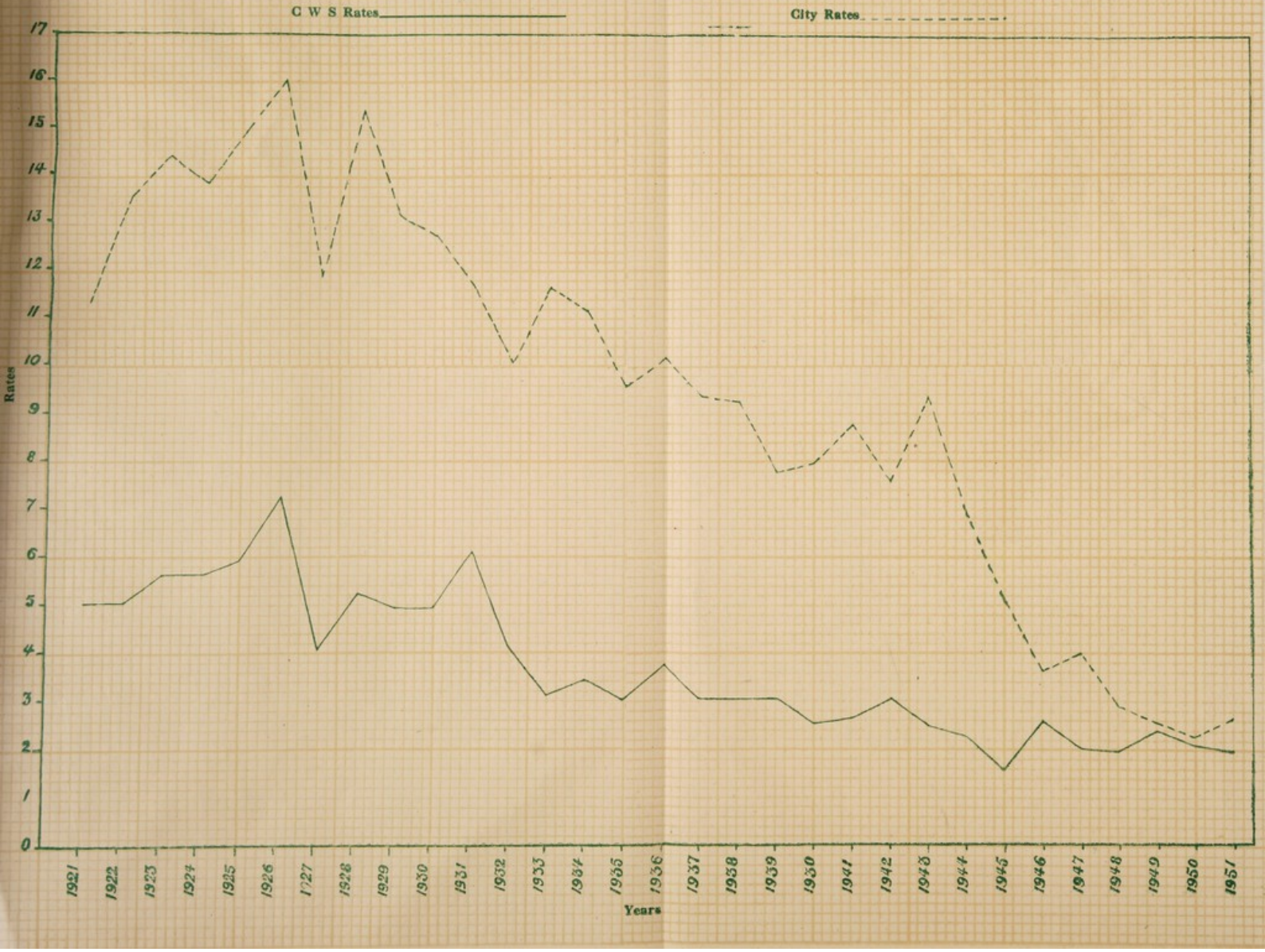
Milk supply: Cow's milk was continued to be supplied, free of cost, to priority consumers during the year at 4 measures per day per centre, two measures in the morning and two measures in the evening. 2,699 infants and 5 toddlers received the benifit of the milk supply during the year.

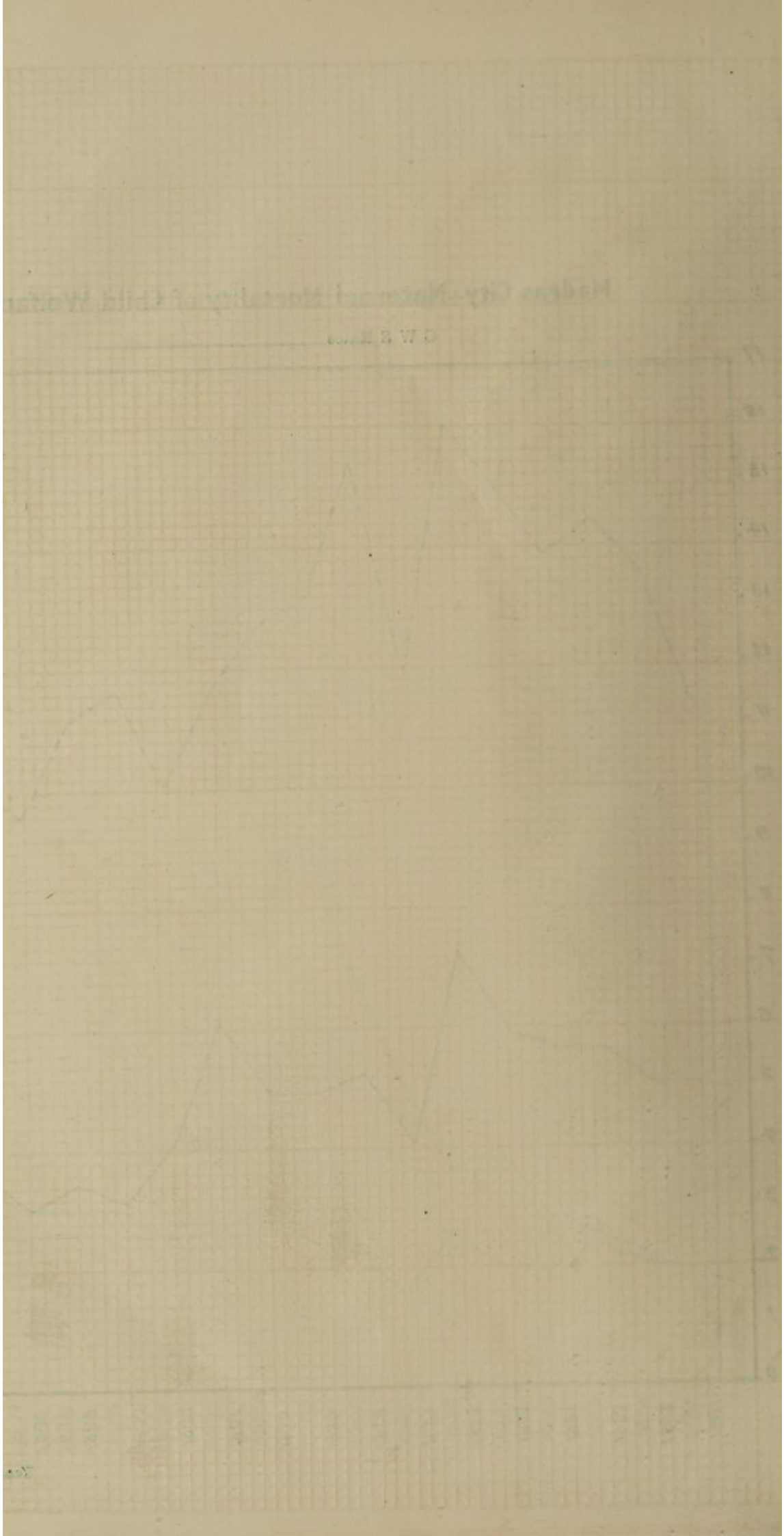
The supply of skimmed milk powder allotted by the U.N.I.C.E.F. was continued in all the 26 Child Welfare Centres till August 1951, when this stock was exhausted. The Madras Branch of the Indian Red Cross Society came forward to help the Scheme with its supply of milk powder in September 1951 which continued throughout the year under report.

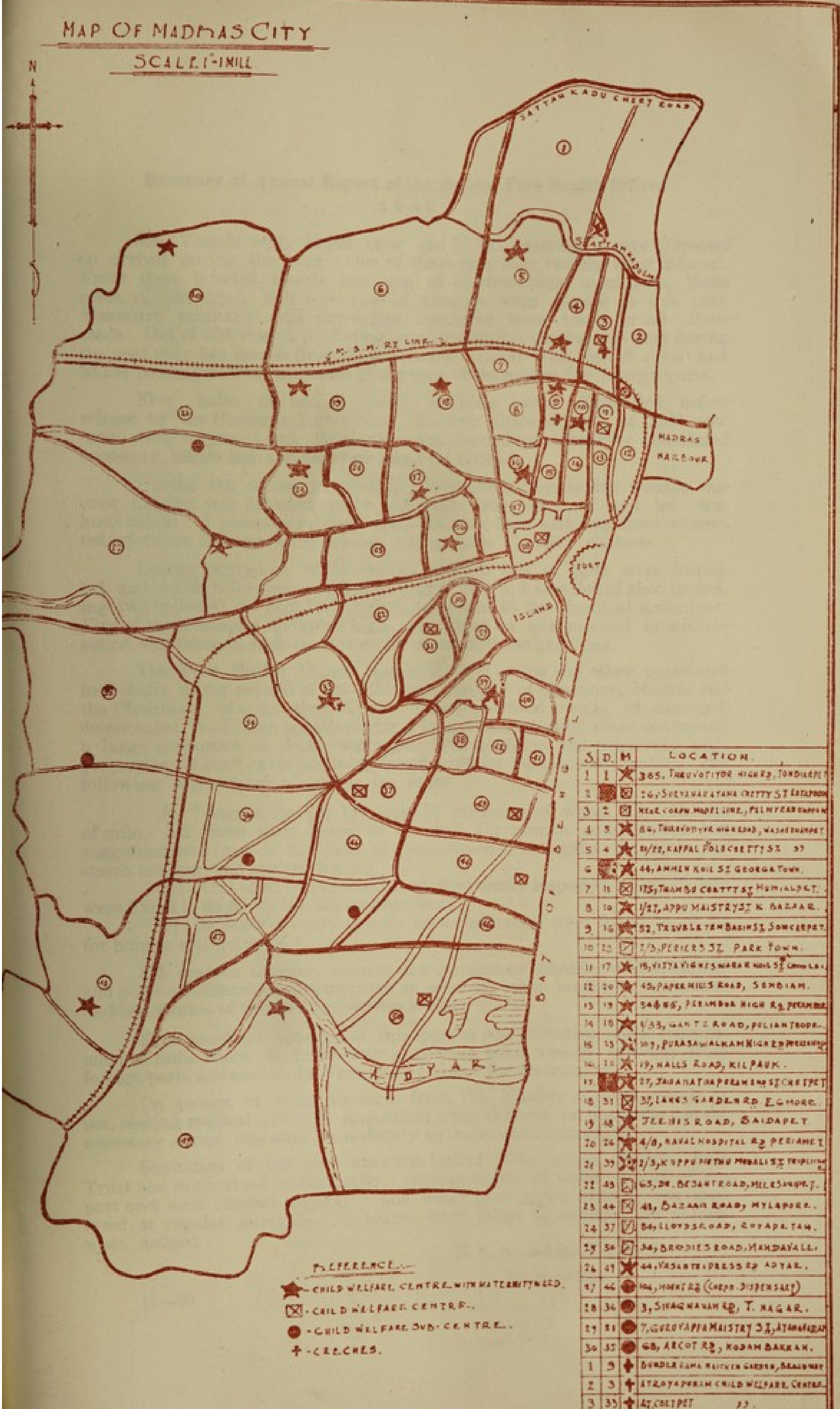
C. N. RUKMINI

Lady Superintendent, Child Welfare Scheme

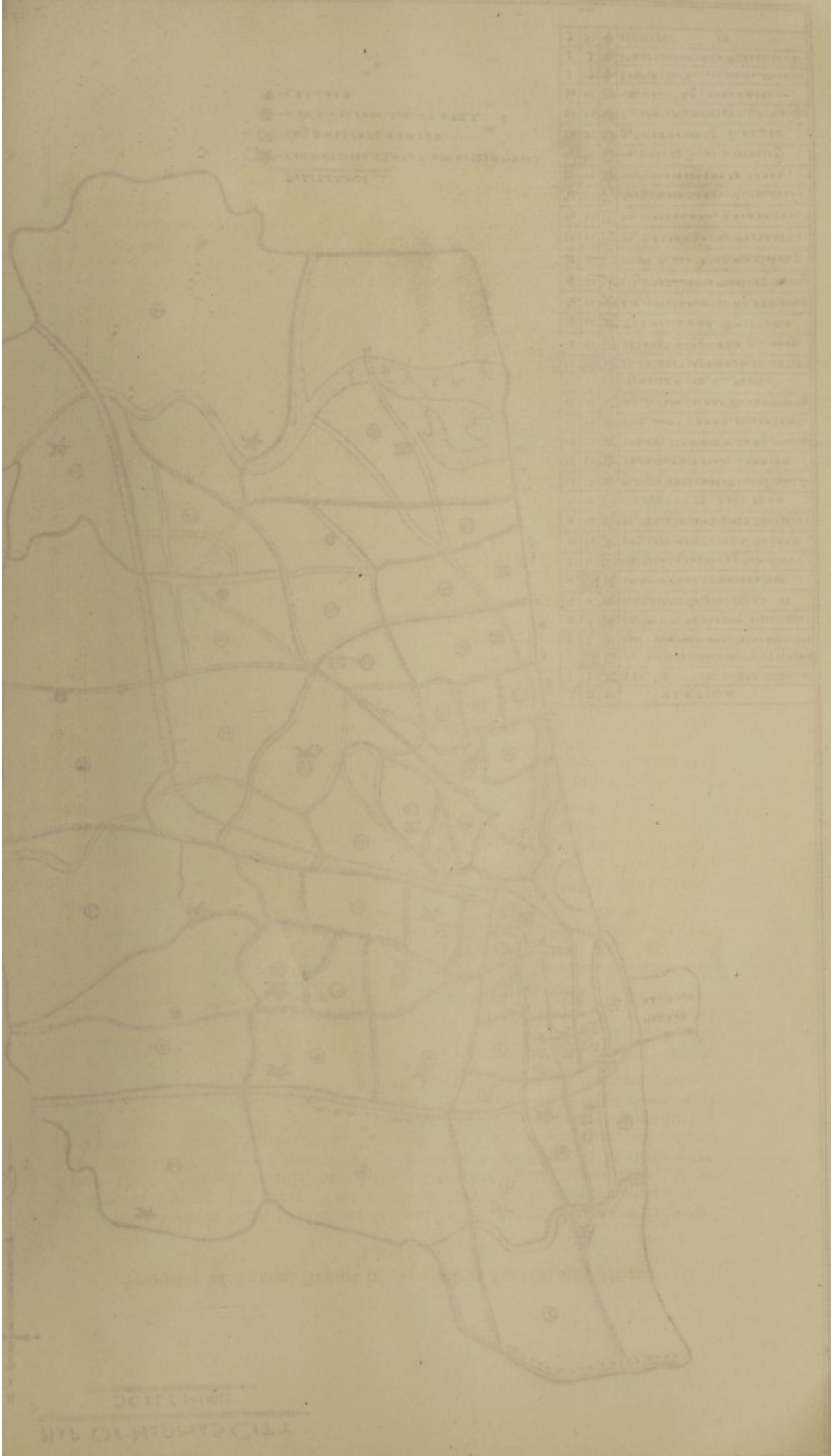
Madras City–Maternal Mortality of Child Welfare Scheme Compared with that of the City 1921 – 51







S.	D.	M.	LOCATION.
1	1	★	365, THIRUVOTIYUR HIGH RD, TONDIARPET
2		⊠	26, SURYANARAYANA CHETTY ST, KOLAPURAM
3	2	⊠	NEAR CORPN. MODEL LINE, PERAMBUR KAPPAM
4	5	★	86, THIRUVOTIYUR HIGH ROAD, WASHERMANPET
5	4	★	21/22, KAPPAL POLU CHETTY ST. ”
6		★	44, AMMEN KOIL ST. GEORGE TOWN.
7	11	⊠	175, THAMBU CHETTY ST. MUTHIALPET.
8	10	★	1/27, APPU MAISTRY ST. K. BAZAAR.
9	16	★	52, TRIVALEYAM BASIN ST. SOWCARPET.
10	13	⊠	2/3, PERIERS ST. PARK TOWN.
11	17	★	15, VITTA VIGNESWARAR KOIL ST. CHOOLAI.
12	20	★	45, PAPER MILLS ROAD, SEMBIAM.
13	19	★	54 & 55, PERAMBUR HIGH RD. PERAMBUR.
14	18	★	1/33, GANTZ ROAD, PULIANTHOPE.
15	25	★	303, PURASAWALKAM HIGH RD. PURASAWALKAM.
16	22	★	19, HALLS ROAD, KILPAUK.
17		★	27, JAGANATHA PURAM 2ND ST. CHETPET.
18	31	⊠	37, LANES GARDEN RD. EGMORE.
19	48	★	JEENIS ROAD, SAIDAPET.
20	26	★	4/8, NAVAL HOSPITAL RD. PERIAMET.
21	39	★	2/3, KUPPU MUTHU MUDALI ST. TRIPLICANE.
22	43	⊠	65, DR. BESANT ROAD, MIRSAHIBPET.
23	44	⊠	41, BAZAAR ROAD, MYLAPORE.
24	37	⊠	86, LLOYDS ROAD, ROYAPETTAH.
25	50	⊠	34, BRODIES ROAD, MANDAVELLI.
26	49	★	44, VASANTHA PRESS RD. ADYAR.
27	46	●	104, MUNT RD. (CORPN. DISPENSARY)
28	36	●	3, SIVAGNANAM RD. T. NAGAR.
29	21	●	7, GURUVAPPA MAISTRY ST. AYANAVARAM.
30	35	●	68, ARCOT RD. KODAMBAKKAM.
1	9	✚	BUNDER RAMA NAICKEN GARDEN, BROADWAY
2	3	✚	ATROYAPURAM CHILD WELFARE CENTRE.
3	33	✚	47, CHETPET ”



Summary of Annual Report of the Madras Port Health Officer
1951

606 Vessels with 38,192 crew and 28,795 passengers were inspected on arrival during the year. Out of these only four vessels were infected. From these infected vessels one case of cerebro-spinal meningitis, three cases of chickenpox and one case of measles were landed at this port. Necessary sainitary and preventive measures were taken in all these cases. Out of 606 vessels (including country crafts) leaving this port during the year only 346 vessels (including country crafts) with 24,718 crew and 35,534 passengers were inspected at the time of departure for foreign ports.

Five bales of second hand clothing were disinfected before release by the Customs Authorities. Bedding clothing etc., of 1233 new crew were inspected and disinfection was carried out whenever considered necessary before the articles were taken on board.

During the course of medical inspection of outgoing vessels one crew member was detected to be suffering from Mumps and he was hospitalized. 5 prospective passengers who had been suffering from suspected infectious diseases were rejected along with 11 other contacts.

Lascar provisions of 55 vessels and 263 tins of ghee were inspected and sealed before being taken on board. In all, 3 samples of ghee including two collected on board the vessels were sent to the Chemical Examiner. Five of these samples indicated high acid valne on analysis and immediate action was taken in each case for replacement of those ghee tins.

The Port Health Officer inspected food grains and other unclaimed food stuffs at the request of the Assistant Director of clearance, Madras and the Chairman, Madras Port Trust. These consisted mostly of damaged, deteriorated stuff often unclaimed for a long time and quite often containing a large proportion of deck sweepings. This explains the relatively high proportion of stuff examined being found unfit for human consumption. The following were examined during the year.

(i) 7 bags of rice (ii) 153 bags, 7½ measures of wheat (iii) 16 bags of milo. All these were found to be unfit for human consumption but suggestion was made in the case of item No. (iii) to utilise the same for starch making and poultry feeding.

(iv) Out of 43 lots of unclaimed food stuffs inspected, only 10 lots were found to be fit for human consumption.

(v) 25 cases of curry powder on examination were found to be fit for human consumption.

335 seamen trainees, seamen for continuous certificate of discharge and other candidates for employment as seamen, were medically examined and certificates of fitness or otherwise issued.

Five monkeys brought at this port in contravention of the Government of India Rules in force were collected from vessels arriving from foreign ports and sent to the Veterinary College for destruction.

On receipt of radio messages from the Masters of seven vessels at sea, seeking medical advice in connection with sickness on board the vessels, necessary advice was sent immediately to the masters concerned.

Sanitation of the port area was looked after by the Madras Port Trust and maintained satisfactorily. Storage tanks of water supply of the port area were cleaned regularly and water from these sources was analysed at regular intervals. Measures were taken to rectify the defects when noticed.

N. S. S. NARAYANAN

Port Health Officer

INSTITUTIONS UNDER THE DEPARTMENT

Offices of Registration of Births and Deaths

Serial No.	Divisions Served	Location
1	1, 2 & 3	87, Suryanarayana Chetty St., Rayapuram
2	4 & 5	546, Thiruvottiyur High Road, Washermenpet
3	6	55, Madhawaram High Road
4	7, 8, 9 & 10	244, Mint Street
5	11, 12 & 13	47, Lingi Chetty Street
6	14, 15	161, Govindappa Naicken Street
7	16	183, Walltax Rd
8	17	Rotler Street, Vepery
9	18 & 19	55, Pulianthope High Road
10	20	23, Paper Mills Road, Sembiam
11	21	127, Konnur High Road, Ayanavaram
12	22-A	65, Poonamallee High Road, near Spur Tank
13	22-B & 35-B	100, do. Aminjikarai
14	23,24 & 25	6, Gangadareswarar Koil Street, Pursawalkam
15	26	69, Maddox Street, Vepery
16	27 & 28	23, Kolandai Street, Park Town
17	29 & 30	3/61, Arunachala Naicken St., Chintadripet
18	31 & 32	34, Poosala Gengu Reddy Street, Egmore
19	33 & 34	15, Noor Veerasami Iyer St., Nungambakkam
20	35-A	68, Arcot Road, Kodambakkam
21	36 & 47-A	3, Sivagnanam Road, T' Nagar
22	37,38, 39 & 40	369, Pycrofts Road, Pudupakkam
23	41 & 42	25, Pycrofts Road, Triplicane
24	43 & 44	101, Kutcheri Road, Mylapore
25	45 & 50-A	63, do.
26	46	104, Mount Road, Teynampet
27	47-B 48	2, Jeenis Road, Saidapet
28	49	32/5, Velacheri Road, Guindy
29	50-B	12, Bridge Road Adyar

Offices of Sanitary Inspectors

Divn. No.	Location
1	21/22, Kappal Polu Chetty st.
2	Kalmandapam Rd.
3	Robinson Park
4	546, Thiruvottivur High Road, Washermenpet
5	do do
6	Hope Lodge, Gantz Road
7	Model Cattle Yard, Basin Bridge Road
8	244, Mint St.
9	do.
10	Junction of Monegar Choultry Rd. & Ebramji Sahib St.
11	1/32, do. do.
12	6/17, Adam St. Harbour
13	47, Linghi Chetty St.
14	3/48, Thatha Muthiyappan St.
15	183, Wall Tax Road
16	do. do.
17-A	39, Veda Vinayagar Road
17-B	do
18	55, Pulianthope High Road
19	1-B, Bashyam Reddy 1st St.
20	25, Paper Mills Road, Sembiam
21	39, Konnur High Road, Ayanavaram
22-A	65, Poonamalee High Road, Kilpauk
22-B	100, do Aminjikarai
23	6, Gangadareswarar Koil Road
24	39, Vedavinayagar Road
25	65, Poonamallee High Road
26	66, Maddox St. Vepery
27	26, Nannian St., Park Town
28	23, Kolandai St.

Divn. No.	Location
29	Adikesavalu St., Chintadripet
30	72, Kalavai Chetty St., Chintadripet
31	83, Harris Road
32	34, Gengu Reddy St., Egmore
33	16A, Nungambakkam High Rd.
34	21, Village Rd.
35-A	68, Aroct Rd., Kodambakkam
35-B	100, Poonamalle High Road Aminjikarai
36	3, Sivagnanam Rd., T' Nagar
37	368/369 Pycrofts Road
38	do
39	102, Thayar Sahib Street
40	21, Pycrofts Road
41	do.
42	22, Chengalroya Mudaly Street, Triplicane
43	25, Barbers Bridge Road
44	101, Katcheri Road, Mylapore
45	do. do.
46	104, Mount Road, Teynampet
47-A	3, Sivagnanam Road
47-B	Jeenis Road, Saidapet
48-A	32, Razack Market Saidat
48-B	Jeenis Road, Saidapet
49	16, Velacheri Road, Guindy
50-A	Mandavali St, Mylapore
50-B	Bridge Road, Adyar

Dispensaries

Serial No.	Divn. No.	Name		Location
1	1	Rayapuram	Dispy	87, Suryanarayana Chetty St.
2	5	Washermenpet	,,	85, Tiruvottiyur High Road
3	6	Vyasarpady	,,	Hope Lodge, Gantz Road
4	6	Perambur	,,	55, Madavaram High Road
5	8	Mint	,,	244, Mint Street
6	11	Harbour	,,	6-7, Adam Street
7	14	Mafuzkhan Garden	,,	55, Thatha Muthiappan St.
8	16	Trevelyan Basin	,,	17, Trevelyan Basin Water works Street
9	17	Baliah Naidu	,,	Rotler Street
10	20	Sembiam	,,	Paper Mills Road
11	21	Ayanavaram	,,	39, Konnur High Road
12	23	Kilpauk	,,	6, Gangadareswarar Koil St.
13	24	Kosapet	,,	8, Chellappa Mudali Street
14	29	Chintadripet	,,	2-61, Arunachella Naick St.
15	32	Egmore	,,	34, Gengu Reddy Street
16	34	Nungambakkam		11, Veerasamy Iyer Street
17	35	Kodambakkam	,,	68, Arcot Road
18	37	Pudupakkam	,,	367, Pycrofts Road
19	41	Triplicane	,,	21 do
20	43	Krishnampet	Dispy	25, Barbers Bridge Road
21	45	Mylapore	,,	101, Katcheri Road
22	46	Teynampet	,,	104, Mount Road
23	47	T'Nagar	,,	3, Sivagnanam Road
24	50	Adyar	,,	Lattice Bridge Road
25	33	Ayurvedic	,,	Model School Street Thousand Lights
26	13	Mannady Unani	,,	47 Linghi Chetty Street
27	18	Puliantope	,,	55, Puliantope High Road
28	31	Pudupet	,,	1, Venkatachala Achari St.
29	39	Thiruvateeswaranpet Unani		130 Thayar Sahib Street
30	3	Royarpuram	Siddha	102 Adam Sahib Street
31	17	Choolai	,, ,,	16, Alathoor Subramania Achari Street
32	19	Otteri	,, ,,	1-B, Bashyam Reddy 1st St.

Clinics

Venereal clinic—82/83 Strahans Road Perambur

Leprosy clinics — Ice House Road (Besant Road) Triplicane
Hope Lodge, Vyasarpady

T. B. Clinics— Pulianthope High Road
Government General Hospital
Government Stanley Hospital
Government Royapettah Hospital
Kasturba Gandhi Hospital

Laboratories

Public Health Clinical Laboratory
Ripon Buildings
Public Analyst's Laboratory
Ripon Buildings
Water Analyst's Laboratory
Kilpauk Water Works

Malaria Laboratory
17, Trevelyan Basin Water Works Street

Hospitals

Infectious Diseases Hospital
Tiruvottiyur High Road, Tondiarpet
Sri Tiruvotteeswarar Tuberculosis Hospital
391, Konnur High Road, Otteri

Ashok Vihar Health & Recreation Centre, People's Park
Zoological Gardens, People's Park
Lethal chamber, Basin Road

Poor Relief

Work House for able bodied beggars, Poor House, Orphanage — Suryanarayana Chetty Street Royapuram
Special Home for the diseased and infirm — Krishnampet

Mid-day meals centres

Basin Road-Kondithope-North Range
Iyah Mudali Street-Chintadripet Central Range
Conran Smith Road Gopalapuram-South Range

Veterinary Dispensaries

Basin Road, Kondithope
Barbers Bridge Road, Krishnampet
Prasanna Vinayagar Temple Road Mylapore

Cattle Depots

A—Old Slaughter House Road, Royapuram
B—Basin Road, Kondithope
C—Avadanampapier Road, Choolai
D—Harris Road, Mount Road
E—Barber's Bridge Road, Krishnampet
F—Prasanna Vinayagar Temple Road Mylapore
G—High Road Perambur,
H—Thirumalaipillai Road, T. Nagar North
I—Vinayakampet, Saidapet

Corporation Cattle Yards

Basin Road, Kondithope
Singanna Chetty St., Chintadripet
Vinaithirtha Vinayaga Mudali Street, Kosapet
Venkatarangam Pillai St, Triplicane

Slaughter Houses

Sheep and Cattle
Gantz Road—Perambur Barracks.
Alandur Road, Saidapet

Pigs
Junction of Basin Rd. and Pulianthope High Road

Dumping grounds

Otteri in Brick Kiln Road Otteri
Korukkupet Opposite Korukupet R. S.
Krishnampet near E. Cattle depot
Ellapada Mada Koil, St. Marys Road

Compost yards

Korukkupet dumping ground
Otteri do

CHILD WELFARE CENTRES.

No.	Centres	Location	Phone No.	No. of Beds	Date of opening
1	Tondiarpet ...	385, Thiruvotiyur High Rd....	4615	15	13— 8—47
2	Royapuram ...	26, Suryanarayana Chetty St.	2146	...	3—11—24
3	Palmyrah Kuppam.	Near Corpn. Model Line ...	2780	...	10— 9—49
4	Washermenpet ...	86, Thiruvotiyur High Rd....	3258	12	26— 5—19
			Maternity Ward		5—8—48
5	Sanjiviroyanpet.	21/22, Kappal Polu Chetty St.	2319	13	23— 3—48
6	George Town ...	44, Ammen Koil St. ...	3697	15	17— 5—22
7	Muthialpet ...	175, Thambu Chetty St. ...	3121	...	24— 8—24
8	Kothwal Bazaar	1/27, Appu Maistry St. ...	4615	8	24— 9—47
			Maternity Ward		23—2—51
9	Treveleyen Basin	52, Treveleyen Basin St. ...	3128	12	19— 7—45
10	Park Town ...	2/3, Periera Street ...	4522	...	30— 5—40
11	Choolai. ...	15, Vijya Vigneswarar Koil St.	4617	34	29— 8—47
12	Sembiam ...	45, Paper Mills Road ...	2606	8	9— 9—46
13	North Perambur.	54 & 55, Perambur High Rd.	4523	9	31— 5—40
			Maternity Ward		22—3—45
14	Pulianthope ...	1/33, Gantz Rd	3880	14	15— 9—50
			Maternity Ward		21—3—51
15	Purasawalkam ...	109, Purasawalkam High Rd.	3035	7	Oct. 1919
			Maternity Ward		23—10—44
16	Kilpauk ...	19, Halls Road	55446	6	28— 6—44
17	Chetpet ...	27, Jaganathapuram 2nd St.	8166	6	24— 9—23
18	Egmore ...	37, Langs Garden Rd. ...	86519	...	7— 7—23
19	Saidapet ...	Jeenis Road	88265	16	28—11—49
20	Periamet ...	4/8, Naval Hospital Road ...	4341	7	7— 3—46
21	Triplicane ...	2/3, Kuppu Muthu Mudali St.	86505	11	15— 9—17
			Maternity Ward		10—1—46
22	Mirsahibpet ...	65, Dr. Besant Road ...	86947	...	25—10—41
23	Mylapore ...	48, Bazaar Road ...	86570	...	4— 8—24
24	Royapetah ...	84, Lloyds Road ...	86644	...	9—10—29
25	Mandavali ...	34, Brodies Road ...	86614	...	14— 2—46
26	Adyar ...	44, Vasantha Press Rd. ...	85427	6	31—10—47
		No. of Beds ...		199	

SUB-CENTRES.

27	Teynampet ...	104, Mount Road ...	88158	...	10— 3—48
28	T. Nagar ...	3, Sivagnanam Rd. ...	...	...	10— 3—48
29	Ayanavaram ...	7, Guruvappa Maistry St. ...	2788	...	28—10—48
30	Kodambakam ...	68, Arcot Rd.	88469	...	5— 1—49

CRECHES.

1	Broadway ...	Bunder Rama Naicken Garden.	4614	...	...
2	Royapuram ...	Child Welfare Centre ...	2146	...	...
3	Chetpet ...	Child Welfare Centre ...	8166	...	...

S No	Dn No	Name of burial ground	Location
1	1	Kasimode Burial and Burning Ground	Suryanarayana Chetty Street. Royapuram
2	6	Melpattadai Ponnappa Mudali Street Burial and Burning Ground	Melpattadai Ponnappa Mudali Street, Perambur.
3	6	Manali Road Burial and Burning Ground.	Manali Road, Vyasarpaudy.
4	7	Washermenpet Burial and Burning Ground	Kathiwakkam High Road Washermenpet.
5	17	Choolai Cremation Ground	Basin Road, Pulianthope.
6	20-A	Thangal Burial and Burning Gr.	Thangal, Sembiam.
7	20-A	Peravallur Burial and Burning Gr.	Peravallur, Sembiam.
8	20-B	Agaram Burial and Burning Ground.	Loco Works Road, Sembiam.
9	21	Vailangadu Burial & Burning Ground.	Iyanavaram
10	22-B	Halls Road Burial and Burning Ground	Halls Road, Kilpauk.
11	23	Otteri Burial and Burning Ground	Brickkiln Road, Otteri.
12	34	Sterling Road Burial and Burning Ground	Sterling Road, Chetpet.
13	35-A	Puliyur Burial and Burning Ground	Puliyur Cheri, Kodambakkam.
14	35-A	Saligramam Burial and Burning Ground	Near Saligramam Cheri Kodambakkam.
15	35-A	Kodambakkam Burial and Burning Greund Near A.V.M. Studios.	Kodambakkam.
16	35A	Nallankuppam Burial and Burning Ground	West Mambalam.
17	35-B	Aminjikarai Burial and Burning Ground	Lime Kiln Street, Aminjikarai
18	35-B	Arumbakkam Burial and Burning Ground	Aminjikarai
19	35-B	Naduvankarai Burial and Burning Ground	do
20	35-B	Mullam Burial and Burning Ground	do
21	35-B	Periagudal Burial and Burning Ground	do
22	43	Krishnampet Burial and Burning Ground	Gajapathy Lala Street Dr. Besant Road.
23	44	Mylapore Burial and Burning Ground	South of Edward Elliots Road.
24	47-A	Thyagaraya Nagar Burial and Burning Ground	Kannammapet.
25	48-B	Saidapet Burial and Burning Ground	Jones Road, Saidapet.
26	49	Kottur Burial and Burning Ground	Kottur, Guindy.
27	49	Zamin Adyar Burial and Burning Ground	Adyar.
28	49	Kallikundram Burial and Burning Ground	do
29	49	Velacheri Burial and Burning Ground	do
30	50-B	Urur Burial and Burning Ground	Urur Village, Adyar,
31	1	Muslim Burial Ground.	Surianarayana Chetty Street.
32	,,	,, Bhora Burial Ground	do
33	,,	,, Old Burial Ground	do
34	,,	,, Khoja Burial Ground	Thandavaraya Gramany St.
35	22-A	Kilpauk B. G.	Shenoy Nagar.
36	1	Christian Cemetry	Surianaraya Chetty Street.
37	22-A	Kilpauk Cemetry	Shenoy Nagar.
38	50	Ellapatha Mada Coil Cemetry	St. Mary's Rd. Mylapore.
39	1	Chinese Burial Ground	Surianarayana Chetty St.
40	,,	Jewish Burial Ground	do
41	22-A	Buddist Burial Ground	Shenoy Nagar.

VITAL STATISTICS — STATEMENT NO. 1

Meteorological data of Madras (Meenambakkam) for 1951 — Latitude 13° 4' North — Longitude 80°15' East

Months	Barometric pressure corrected for temperature and reduced to standard gravity and mean sea level in Milli bars Hours		Temperature (°F)									Humidity (%)		Wind		Rainfall in inches		
			Mean Maximum	Mean Minimum	Mean Daily Range column 4—5	Mean Daily temperature ½ of columns 4+5	Dew point Hours		Mean Maximum solar Radiation	Difference between mean temperature and Dewpoint temperature at hours		Percentage of Humidity		Meandirection of wind in degrees		Total fall for the month in inches	Heaviest rainfall in 24 hrs in inches	No. of rainy days 0·10" and over
	08.30	17.30	°F	°F	4—5	4+5	08·30	17·30		08-30 col 7-8	17-30 col 7-9	Hrs. 08.30	Hrs. 17.30	Hrs. 08.30	Hrs. 17.30			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
January ...	1015·1	1012·0	83·0	68·4	14·8	75·6	67	66	125·0	8·6	9·6	79	63	N 6 W	N 55 E	0·12	0·12	1
February ...	1013·5	1010·1	85·6	67·2	18·4	76·4	66	65	128·9	10·4	11·4	76	59	N59W	N 88 E	0·00	0·00	0
March ...	1012·6	1008·7	91·6	73·2	18·4	82·4	72	71	133·3	10·4	11·4	75	64	S 58W	S 65 E	0·04	0·03	0
April ...	1010·4	1006·5	92·8	78·3	14·5	85·5	75	75	136·6	10·5	10·5	74	70	S 23W	S 40 E	3·60	2·56	4
May ...	1008·4	1004·4	98·3	81·2	17·1	89·7	77	78	141·1	12·7	11·7	70	70	S 30W	S 38 E	0·40	0·34	1
June ...	1004·6	1001·1	98·9	82·1	16·8	90·5	70	74	135·9	20·5	16·5	58	60	N 8W	S 13 E	1·42	0·57	3
July ...	1006·1	1002·9	95·0	79·0	16·0	87·0	71	73	139·5	16·0	14·0	67	60	S 9W	S 25 E	3·40	1·07	7
August ...	1007·8	1003·8	95·9	78·8	17·1	87·3	71	73	157·9	16·3	14·3	67	59	S 81W	S 21 E	5·22	1·43	12
September ...	1008·6	1004·9	92·3	78·1	14·2	85·2	74	75	158·3	11·2	10·2	75	68	S 84 W	S 42W	3·14	0·87	7
October ...	1009·9	1006·5	93·3	77·9	15·4	85·6	74	74	156·9	11·6	11·6	74	68	S 80W	S 59 E	2·74	1·42	4
November ...	1012·4	1009·4	86·5	74·3	12·2	80·4	74	72	147·6	6·4	8·4	83	74	N 8 W	N 42 E	10·44	2·65	11
December ...	1014·9	1012·0	84·1	68·4	15·7	76·3	67	66	151·6	9·3	10·3	75	64	N13W	N 42 E	0·13	0·13	1
Total ...	12124·3	12082·3	1097·3	906·7	190·6	1001·9	858	862	712·6	143·9	139·9	873	779	...	...	30·65	11·19	51
Means ...	1010·4	1068·6	91·4	75·6	15·9	83·5	71·5	71·8	142·7	12·0	11·7	72·8	65·0	...	...	2·55	1·0	4

VITAL STATISTICS — STATEMENT No. II

Births Registered in each Division during 1951.

Division No.	Name of Division	Population According to the census of 1951			Number of Births Registered			Ratio of Births per 1000 of popultion			Number of males born to every 100 females born	Excess of Births over deaths per 1000 of population	Excess of Deaths over births per 1000 of population	Number of still Births Registered
		Males	Females	Total	Males	Females	Total	Males	Females	Total				
1	New Washermanpet	15,543	15,826	31,369	830	707	1,537	53·4	44·7	49·0	117·4	14·1	...	44
2	Royapuram	10,117	10,734	20,851	472	423	895	46·7	39·4	43·0	111·6	13·6	...	32
3	Singara Garden	24,594	18,602	43,196	1,244	1,218	2,462	50·6	65·5	57·0	102·1	21·9	...	122
4	Sanjeeviroyanpet	26,660	24,718	51,378	1,167	1,152	2,319	43·8	47·7	45·2	101·3	9·8	...	65
5	Korukupet	16,456	20,150	36,606	1,031	1,081	2,112	62·7	53·7	57·7	95·4	7·1	...	59
6	Vyasaarpady	12,641	12,147	24,788	534	500	1,034	42·2	41·2	41·7	106·8	16·2	...	33
7	Basin Bridge	11,472	11,272	22,744	469	433	902	41·0	38·4	40·0	108·3	2·1	...	24
8	Peddu Naickenpet	16,011	15,001	31,012	535	526	1,061	33·4	35·1	34·2	101·7	9·0	...	28
9	Seven Wells	14,994	11,990	26,984	654	596	1,250	43·6	49·8	46·3	109·8	6·2	...	26
10	Ammen Coil	12,636	10,954	23,590	417	389	806	33·0	35·5	34·2	107·2	6·7	...	23
11	Muthialpet	12,894	13,297	26,191	485	456	941	37·6	34·3	35·9	106·4	11·3	...	21
12	Harbour	8,950	7,021	15,971	319	322	641	35·6	45·9	40·2	99·1	3·2	...	10
13	Kachaleeswarar Koil	7,832	4,961	12,793	230	231	461	29·4	46·5	37·9	99·6	4·9	...	9
14	Kothawal Bazaar	8,771	6,346	15,117	271	235	506	30·9	37·0	33·9	115·0	8·7	...	17
15	Sowcarpet	8,782	6,489	15,271	258	229	487	29·4	35·3	32·4	112·6	10·3	...	15
16	Trevelyan Basin	15,124	14,072	29,196	579	558	1,137	38·3	39·6	38·9	103·8	7·5	...	24
17	Choolai	27,226	25,751	52,977	1,119	1,153	2,272	41·1	44·7	42·9	97·1	15·7	...	54
18	Puliantope	23,000	21,194	44,194	1,038	984	2,022	45·1	46·4	45·8	105·5	9·3	...	42
19	Perambur Barracks	14,843	14,662	29,505	623	538	1,161	42·0	36·7	39·4	115·8	15·3	...	19
20	Sembium	14,608	15,677	30,285	774	693	1,467	53·0	44·2	48·5	111·7	22·6	...	34
21	Aynavaram	14,464	14,354	28,818	576	576	1,152	40·0	40.0	40·0	100·0	8·0	...	15

22	Kilpauk ...	12,629	10,287	22,916	522	425	5492	43·4	43·7	43·5	121·4	21·9	...	
23	Purasawalkam ...	16,738	14,008	30,746	24	25	49						...	
24	Kosapet ...	20,227	19,407	39,624	525	533	1,058	31·4	38·0	34·7	98·5	7·4	...	24
25	Vepery ...	8,298	9,136	17,434	897	825	1,422	44·4	42·5	43·5	108·8	16·1	...	31
26	Periamet ...	16,728	14,835	31,563	341	324	665	41·1	35·5	38·3	105·5	17·0	...	10
27	Edapalayam ...	10,124	8,358	18,482	631	615	1,250	38·0	41·5	39·6	103·3	13·0	...	31
28	Park Town ...	9,160	7,075	16,235	271	303	574	26·8	36·3	31·1	90·0	7·2	...	20
29	Napier Park ...	10,682	8,876	19,558	227	234	461	24·8	33·1	28·4	92·7	...	52·2	14
30	Chintadripet ...	13,688	12 809	26,497	422	384	805	39·5	43·3	41·3	109·9	12·8	...	28
31	Komaleesvaranpet ...	14,814	13,126	27,940	504	501	1,005	37·6	39·1	38·3	100·6	12·5	...	25
32	Egmore ...	8,385	8,319	16,704	628	582	1,210	42·4	44·3	43·3	108·0	16·5	...	24
33	Thousand Lights ...	15,997	15,345	31,342	765	725	1,490	91·2	87.2	89·2	105·5	58·7	...	118
34	Nungambakkam ...	14,739	12,668	27,407	707	640	1,347	44·2	41·7	42·9	110·5	16·1	...	30
35	Kodamdakkam ...	19,226	17,908	37,134	516	502	1,018	35·0	40·8	37·5	102·8	13·2	...	31
36	Theagarya Nagar (North)	10,886	10,487	21,373	696	690	1,386	36·2	38·5	37·4	100·9	10·0	...	36
37	Royappetta ...	11,961	11,443	23,344	372	352	724	34·2	33·6	33·9	105·7	10·5	...	19
38	Pudupakkam ...	14,448	14,224	28,612	446	419	865	37·5	36·6	37·0	106·5	10·1	...	27
39	Thiruvateesvaranpet ...	15,878	14,485	30,363	586	580	1,166	40·6	40·8	40·7	101·3	10·2	...	15
40	Chepauk ...	12,818	11,449	24,267	648	632	1,280	40·8	43·6	42·2	102·5	10·1	...	21
41	Triplicane ...	14,537	12,240	26,777	661	703	1,364	51·6	71·4	56·5	94·0	31·2	...	42
42	Zam Bazaar ...	13,295	11,749	25,044	493	502	995	34·0	41·0	37·5	98·2	11·3	...	28
43	Mirsaibpet ...	23,307	20,873	44,180	508	517	1,025	38·2	44·0	41·1	98·3	13·8	...	21
44	Mylapore (North) ...	17,383	21,351	38,734	1,031	966	1,997	44·2	46·3	45·2	106·7	2·7	...	41
45	Mylapore (South) ...	13,137	12,608	25,745	754	725	1,479	43·4	34·0	38·7	104·0	9·7	...	34
46	Teynampet ...	17,741	15,736	33,477	446	436	881	33·9	34·5	34·2	102·5	15·2	...	25
47	Theagaraya Nagar (South)	18,630	16,762	35,392	607	606	1,213	34·5	39·0	36·2	100·1	7·7	...	36
48	Saidapet ...	18,093	163,73	34,466	709	657	1,366	38·1	39·0	38·5	108 0	10·9	...	32
49	Guindy ...	9,604	7,812	17,416	679	662	1,341	37·5	40·4	39·0	192·6	16·0	...	29
50	Adyar ...	14,550	13,548	28,0 8	268	261	529	28·0	33·4	30·7	103·0	13·8	...	16
	Fort St George ...	1,752	528	2,280	567	556	1,123	39·0	41·0	40·0	102·5	18 0	...	15
	Total ..	7,37,013	6,79,043	14,16,056	30,080	28,881	58,961	40·81	42·53	41·64	104·2	11·9	...	1,634

Births registered in the Divisions during each month in 1951

Serial Number.	Name of Division	January	February	March	April	May	June	July	August	September	October	November	December	Total Number of Births registered
1	New Washermenpet ...	63	119	97	115	128	141	117	157	109	114	200	177	1,537
2	Royapuram ...	47	60	65	51	70	103	84	69	37	90	116	103	895
3	Singara Garden ...	117	147	146	141	191	252	220	286	137	303	275	247	2,462
4	Sanjeevirayanpet ...	131	142	129	127	223	200	217	185	205	217	336	207	2,319
5	Korukupet ...	96	132	142	170	191	181	185	168	193	205	259	190	2,112
6	Vyasarpady ...	65	54	54	83	95	71	91	88	116	97	117	103	1,034
7	Basin Bridge ...	43	44	66	67	75	88	56	98	95	68	116	86	902
8	Peddu Naickenpet ...	50	55	78	89	62	88	104	105	111	100	119	100	1,061
9	Seven Wells ...	59	69	98	89	97	128	103	149	120	124	119	95	1,250
10	Ammen Coil ...	44	48	52	59	53	85	73	88	89	78	82	55	806
11	Muthialpet ...	49	59	56	85	80	77	85	71	82	75	129	93	941
12	Harbour ...	18	36	39	43	57	46	49	63	55	71	80	84	641
13	Kachaleeswarar Koil ...	31	29	29	34	44	36	43	41	36	30	60	48	461
14	Kothawal Bazaar ...	21	24	36	41	36	46	40	54	46	51	54	57	506
15	Sowcarpet ...	29	32	32	27	36	37	31	53	66	41	54	49	487
16	Trevelyan Basin ...	68	65	93	81	87	78	76	133	101	117	104	134	1,137
17	Choolai ...	128	116	150	185	170	243	193	236	235	220	194	202	2,272
18	Puliantope ...	96	102	81	175	201	157	168	214	216	205	208	199	2,022
19	Perambur Barracks ...	71	49	59	90	86	76	121	134	129	124	114	108	1,161
20	Sembium ...	89	69	97	108	113	135	135	167	132	130	147	145	1,467
21	Aynavaram ...	66	49	67	71	88	102	108	128	115	102	115	141	1,152

22	Kilpauk ...	40	52	50	102	69	82	110	110	106	77	98	100	996
23	Purasawalkam ...	60	65	83	71	78	105	78	133	78	96	97	114	1,058
24	Kosapet ...	67	110	112	107	147	179	125	165	201	175	183	151	1,722
25	Vepery ...	31	49	45	47	41	91	47	63	57	70	55	69	665
26	Periamet ...	80	57	71	78	101	134	101	110	126	125	130	137	1,250
27	Edapalayam ...	32	31	51	35	54	57	42	59	51	44	63	55	574
28	Park Town ...	34	25	20	35	37	36	38	42	51	49	47	47	461
29	Napier Park ...	46	45	62	67	58	76	66	76	76	64	75	95	806
30	Chintadripet ...	59	53	63	74	85	96	73	109	99	95	110	89	1,005
31	Komaleesvaranpet ...	70	69	72	86	94	95	101	120	118	114	142	129	1,210
32	Egmore ...	86	90	90	91	110	129	133	146	161	152	182	120	1,490
33	Thousand Lights ...	40	90	81	94	104	120	109	142	104	185	145	133	1,347
34	Nungambakkam ...	43	74	74	60	81	90	91	105	86	106	114	94	1,018
35	Kodambakkam ...	61	61	60	86	86	127	144	161	153	124	158	165	1,386
36	Theagaraya Nagar (North) ...	41	42	35	46	75	70	64	76	69	69	74	63	724
37	Royapetta ...	45	49	47	68	63	77	71	80	87	82	82	114	865
38	Pudupakkam ...	48	70	86	78	95	103	107	88	123	112	91	165	1,166
39	Thiruvateesvaranpet ...	64	76	79	95	112	124	115	107	122	134	125	127	1,280
40	Chepauk ...	71	72	62	105	91	109	143	103	148	188	128	144	1,364
41	Triplicane ...	74	46	53	74	91	72	69	106	86	84	112	128	995
42	Zam Bazaar ...	49	55	72	66	84	97	85	109	86	97	98	127	1,025
43	Mirsaibpet ...	92	128	117	154	147	197	156	212	206	173	203	212	1,997
44	Mylapore (North) ...	89	77	126	97	116	132	130	152	141	151	124	144	1,479
45	Mylapore (South) ...	57	66	53	50	64	77	81	104	73	77	106	73	881
46	Teynampet ...	60	54	80	80	91	99	126	130	119	123	118	133	1,213
47	Theagaraya Nagar (South) ...	86	70	80	64	112	127	143	144	125	145	133	137	1,366
48	Saidapet ...	79	77	90	96	133	114	107	138	103	146	131	127	1,341
49	Guindy ...	31	32	32	28	32	46	52	50	57	52	58	59	529
50	Adyar ...	74	53	59	67	83	90	120	117	134	90	118	118	1,123
	Total ...	3,090	3,338	3,671	4,132	4,717	5,321	5,126	5,944	5,571	5,761	6,298	5,992	58,961

Deaths and Infantile deaths Registered in each Division during 1951.

Division No	Name of Division	Area in square Miles	Area in Acres	Density per acre	Population according to the census of 1951			Number of Deaths Registered			Number of Death of males to every 100 Female deaths	Number of Infantile deaths registered			
					Males	Females	Total	Males	Females	Total		Males	Females	Total	Infantile death rate
1	New Washermenpet ...	2·6158	1674·1120	18·7	15,543	15,826	31,369	575	519	1,094	110·8	134	101	235	152·9
2	Royapuram ...	0·4444	284·4160	73·3	10,117	10,734	20,851	330	281	611	117·4	69	56	125	139·7
3	Singara Garden ...	0.4430	283·5200	152·4	24,594	18,602	43,196	727	789	1,516	92·1	199	187	386	156·7
4	Sanjeeviroyanpet ...	0.5249	335·9360	152·9	26,660	24,718	51,378	907	912	1,819	99·4	224	204	428	184·6
5	Korukupet ...	1·1113	711·2320	51·5	16,456	20,150	36,606	909	942	1,851	96·5	209	228	437	207·0
6	Vyasarpady ...	1.9180	1227·5200	20·2	12,641	12,147	24,788	313	320	633	98·0	75	71	146	141·2
7	Basin Bridge ...	0·3155	201·9200	101·3	11,472	11,272	22,744	431	423	854	101·9	101	106	207	229·5
8	Peddu Naickenpet ...	0·1393	89 1520	347·8	16,011	15,001	31,012	403	387	790	104·1	87	87	174	164·9
9	Seven Wells ...	0·1491	95·4240	282·8	14,990	11,990	26,984	636	446	1,082	142·6	89	70	159	127·2
10	Ammen Coil ...	0·1051	67·2640	350·7	12,636	10,954	23,590	325	323	648	100 6	75	83	158	196·0
11	Muthialpet ...	0·1437	91·6680	284 8	12,894	13,297	26,190	325	317	642	102 5	79	82	161	171.1
12	Harbour ...	0.5346	342·1440	46·7	8,950	7,021	15,971	330	260	590	127·0	89	72	161	251·2
13	Kachaleeswarar Koil ...	0·5244	335·6160	38·1	7,832	4,961	12,793	194	205	399	94·6	44	52	96	208·2
14	Kothawal Bazaar ...	0·1250	80 0000	188·9	8,771	6,346	15,117	195	179	374	109·0	39	46	85	168·0
15	Sowcarpet ...	0·1039	66 4090	230·0	8,782	6,489	15,271	166	163	329	101·8	43	33	76	150·1
16	Trevelyan Basin ...	0·1533	98·1120	297·6	15,124	14,072	29,196	451	466	917	96·8	102	93	195	171.5
17	Choolai ...	0·3600	230·4000	230·0	27,226	25,751	52,977	725	718	1,443	101·0	180	155	335	147·5
18	Puliantope ...	0·8840	565·7600	78·1	23,000	21,194	44,194	804	807	1,611	99·6	187	173	360	178·0
19	Perambur Barracks ...	0·9050	579 2000	51·0	14,843	14,662	29,505	352	359	711	98·0	69	67	136	117·1
20	Sembium ...	0·0127	1288·1280	23·5	14,608	15,677	30,285	385	393	781	98 8	101	88	189	128·9
21	Aynavaram ...	2·610	1670·4000	17·7	14,464	14,354	28,818	523	400	923	130·7	98	87	185	160·6

22	Kilpauk ...	2·8542	826·6080	12·6	12,629	10,287	22,916	245	249	494	98·4	80	73	153	153.6
23	Pursawalkam ...	0·4353	278·5920	110·4	16,738	14,008	30,746	421	410	831	102·7	88	102	190	180·6
24	Kosapet ...	0·2800	179·2000	221·2	20,927	19,407	39,634	521	561	1,082	93·0	142	148	290	168 4
25	Vepery ...	0·4310	275·8400	63·2	8,298	9,136	17,434	176	193	369	91·2	40	40	80	120·3
26	Periamet ...	0·5667	362 6880	87·0	16,728	14,835	31,563	431	406	837	106·2	110	91	201	160·8
27	Edapulyam ...	0·1090	69·7600	265·0	10,124	8,358	18,482	231	210	441	110·0	48	43	91	158·5
28	Park Town ...	0·3401	217·6640	74·6	9,160	7,075	16,235	900	408	1308	220 6	67	51	118	256·0
29	Napear Park ...	0·3001	192·0640	101·8	10,682	8,876	19,558	269	288	556	93·1	78	68	146	181·1
30	Chindadaipet ...	0·1384	88·5760	299·1	13,688	12,809	26,497	350	323	673	108·4	95	79	174	173·1
31	Komaleeswranpet ...	0·3181	203·5840	137·2	14,814	13,126	27,940	375	373	748	100·5	89	97	186	153·7
32	Egmore ...	0·7729	494·6560	33·8	8,385	8,319	19,704	242	268	510	90.3	94	83	177	119·0
33	Thousand Lights ...	1·3495	863·6800	36·3	15,997	15,345	31,342	426	415	841	102·7	110	82	192	142·5
34	Nungambakkam ...	1·3821	884·5440	31·0	14,739	12,668	27,407	318	338	656	94·1	74	72	146	143·4
35	Kodambakkam ...	4·2000	26880000	13·8	19,226	17,908	37,134	526	488	1,014	107·8	138	118	256	184·8
36	Theagaraya Nagar (North)	1·0360	663·0400	32·2	10,886	10,487	21,373	255	244	491	104·5	60	62	127	175·4
37	Royapettah ...	0·5400	345·6000	67·5	11,901	11,443	23,344	322	308	630	104.5	82	85	167	193·1
38	Pudupakkam ...	0·2238	143·2320	200·2	14,448	14,224	28,672	477	398	875	120·0	120	103	223	191·2
39	Thiruvarcesvaranpet ...	1·0499	671·9360	45·2	15,878	14,485	30,363	508	464	972	109·5	133	111	244	190·6
40	Chepauk ...	0·2997	191·8080	126·5	12,818	11,449	24,267	301	305	606	98·7	92	82	174	127·6
41	Triplicane ...	0·1760	112·6400	237·7	14,537	12,240	26,777	358	333	691	107·5	108	79	187	188·0
42	Zam Bazaar ...	0·1391	89·0240	281·3	13,295	11,749	25,044	342	341	683	100·3	72	81	153	150·0
43	Mirsaibpet ...	0·7000	448·0000	98·6	23,307	20,873	44,180	970	908	1,878	106·8	237	176	413	207·0
44	Mylapore (North) ...	0·7485	479·0400	81·0	17,383	21,351	38,734	559	543	1,102	103·0	129	122	251	170·0
45	Mylapore (South) ...	0·4299	275·1360	93·6	13,137	12,608	25,745	252	238	490	106·8	60	66	126	143·0
46	Teynampet ...	1·3310	851·8400	39·3	17,741	15,736	33,477	472	482	954	98·0	125	111	236	194·6
47	Theagaraya Nagar (South)	1·2320	788·4800	45·0	18,630	16,762	35,392	486	494	980	98·4	133	125	258	188·8
48	Saidapet ...	2·2020	1409·2800	24·5	18,093	16,373	34,466	385	408	793	94·4	101	97	198	147·6
49	Guindy ...	5·3240	3407·3600	5·1	9,604	7,812	17,416	148	141	289	105·0	41	37	78	147·4
50	Adyar ...	4·6080	2949 1200	9·6	14,550	13,548	28,098	314	305	619	103·0	77	75	152	134·4
	Total	49·74	31836·9920	45·0	7,37,013	6,79,043	14,16,056	21,588	20,451	42,039	105·56	5,121	4,700	9,821	166·57

* Includes deaths in the city Hospitals among non-residents.

VITAL STATISTICS

STATEMENT No. V

"Deaths" registered in each Division during each month in 1951

Division No.	Name of Division	January	February	March	April	May	June	July	August	September	October	November	December	Total deaths registered during the year.
1	New Washermenpet ...	95	99	79	76	68	90	72	85	94	107	100	129	1,094
2	Royapuram ...	49	27	50	49	55	58	63	49	52	49	35	75	611
3	Singaragarden ...	83	86	150	103	109	136	106	145	127	158	150	163	1,516 *
4	Sanjivirayanpet ...	97	90	107	115	162	186	169	153	182	161	164	223	1,819
5	Korukupet ...	105	132	100	103	166	156	144	187	193	207	156	202	1,851
6	Vysarpady ...	37	51	44	37	51	51	43	42	51	62	65	99	633
7	Basin Bridge ...	47	51	47	37	55	86	59	94	84	85	91	118	854
8	Peddu Naickenpet ...	56	45	40	59	79	68	49	64	77	84	88	81	790
9	Seven Wells ...	66	77	73	89	74	114	73	99	75	106	107	129	1,082 *
10	Ammen Coil ...	52	37	47	48	53	45	61	61	58	55	56	75	648
11	Muthialpet ...	38	37	49	44	49	55	48	57	56	80	62	67	642
12	Harbour ...	36	43	46	37	42	47	43	65	63	42	36	90	590
13	Kachaleeswarar Coil ...	21	19	25	25	39	34	44	39	48	33	41	31	399
14	Kothawal Bazaar ...	31	19	28	14	29	38	22	32	44	34	42	41	374
15	Sowcarpet ...	20	23	22	26	22	26	28	19	35	35	36	37	329
16	Trevelyan Basin ...	52	62	75	74	78	90	83	70	78	83	73	93	917
17	Choolai ...	96	94	85	116	145	95	111	130	133	131	143	164	1,443
18	Puliantope ...	96	130	110	116	166	138	138	141	150	128	140	158	1,611
19	Perambur Barracks ...	57	44	53	65	63	53	58	75	67	63	46	67	711
20	Sembium ...	67	64	59	54	79	74	57	56	69	56	63	83	781
21	Aynavaram ...	59	54	57	57	88	78	80	78	81	100	89	102	923

22	Kilpauk	...	38	45	45	25	35	31	52	41	40	51	40	51	494 *
23	Purasawalkam	...	77	65	82	42	65	71	60	56	70	92	70	81	,831
24	Kosapet	...	70	69	83	64	93	76	87	88	85	113	107	147	1082
25	Vepery	...	25	26	34	33	28	27	23	40	36	30	34	33	369
26	Periamet	...	52	58	76	67	55	68	69	79	85	74	74	80	837
27	Edapalayam	...	00	27	48	36	39	47	24	37	33	39	40	41	441
28	Park Town	...	92	96	103	8	129	115	105	120	100	101	127	137	1,308 *
29	Napier Park	...	43	38	36	46	67	44	41	46	54	48	43	53	556
30	Chintadripet	...	39	44	52	72	55	57	43	52	73	54	57	75	673
31	Komaleesvaranpet	...	47	50	54	50	73	71	66	65	61	69	58	84	748
32	Egmore	...	39	39	28	33	36	55	44	36	51	44	46	59	510 *
33	Thousand Lights	...	63	59	68	52	81	70	58	71	58	89	85	87	841
34	Nungambakkam	...	57	53	46	41	54	40	49	54	59	59	73	80	656
35	Kodambakkam	...	64	59	76	73	98	72	73	96	100	84	106	113	1,014
36	Theagarya Nagar (North)	...	28	38	27	40	38	46	51	56	32	51	46	46	499
37	Royapettah	...	43	50	51	50	55	54	45	47	44	62	63	66	630
38	Pudupakkam	...	50	74	83	67	68	64	77	68	74	83	83	84	875 *
39	Thuiruvateesvaranpet	...	82	61	91	82	85	92	55	75	104	80	71	94	972
40	Chepauk	...	47	45	40	37	56	42	47	58	50	42	66	76	606 *
41	Triplicane	...	59	40	63	59	51	65	49	61	59	52	77	56	691
42	Zam Bazaar	...	43	43	57	45	48	62	62	61	68	66	73	55	683
43	Mirsaibpet	...	105	107	132	131	176	185	172	167	179	162	200	162	1,878 *
44	Mylapore (North)	...	55	64	82	85	106	111	97	112	90	112	9-	90	1,102
45	Mylapore (South)	...	22	43	38	27	42	43	39	54	36	36	46	64	490
46	Teynampet	...	61	56	59	51	83	76	95	83	102	106	92	90	954
47	Theagaraya Nagar (Sonth)	...	76	81	68	75	98	85	68	94	96	83	70	86	989
48	Saidapet	...	45	60	59	57	93	69	61	75	63	70	59	82	793
49	Guindy	...	20	29	29	25	10	20	20	24	21	28	29	34	289
50	Adyar	...	50	47	40	38	53	45	57	55	59	61	44	76	610
	Total	...	2,779	2,850	3,096	2,930	3,642	3,621	3,331	3,728	3,793	3,900	3,860	4,509	42,039

* Includes deaths in the city Hospitals among non-residents.

Deaths Registered According to age by Divisions in 1951

STATEMENT No. VI

Division No.	Name of Division	Under one year		One year and under Five years		Five years and under ten years		Ten years and under fifteen years		Fifteen years and under twenty years		Twenty years and under thirty years		Thirty years and under forty years		Forty years and under fifty years		Fifty years and under Sixty years		Sixty years and upwards		Total		Total Males and Females
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
1	New Washermanpet ...	134	101	134	123	26	33	10	15	15	11	31	48	35	40	42	32	37	25	111	91	575	519	1,094
2	Royapuram ...	69	56	75	75	20	19	2	7	5	3	21	16	24	22	20	15	23	14	71	54	330	281	611
3	Singara Garden ...	199	187	205	225	49	38	13	12	13	18	29	62	31	59	38	34	31	40	119	114	727	789	1,516
4	Sanjeeviroyanpet ...	224	294	266	303	52	60	17	21	10	16	50	56	50	51	56	35	48	47	134	119	907	912	1,819
5	Korukupet ...	209	228	264	296	66	61	17	16	15	15	50	84	60	54	59	36	47	44	122	108	909	942	1,851
6	Vyasaarpady ...	75	71	91	80	15	18	4	13	3	11	21	19	15	13	18	16	16	16	55	63	313	320	633
7	Basin Bridge ...	101	106	126	134	25	17	6	9	2	13	24	23	25	26	35	15	37	17	50	63	431	423	854
8	Peddu Naickenpet ...	87	87	116	91	21	17	7	10	6	12	23	34	16	18	27	16	29	21	71	81	403	387	790
9	Seven Wells ...	89	70	106	92	27	28	9	13	15	13	71	51	78	43	69	23	74	45	98	68	636	446	1,082
10	Ammen Coil ...	75	83	75	69	12	13	8	9	10	9	22	23	24	18	26	14	23	20	50	65	325	323	648
11	Muthialpet ...	79	82	92	86	4	9	4	7	5	11	17	22	17	13	19	11	30	17	58	59	325	317	642
12	Harbour ...	89	72	80	92	17	12	5	1	5	7	22	17	21	9	19	11	22	13	50	26	330	260	590
13	Kachaleeswarar Koil ...	44	52	46	59	13	11	2	2	3	7	16	14	20	11	8	8	17	10	25	31	194	205	399
14	Kothawal Bazaar ...	39	46	35	30	9	6	6	4	3	5	15	14	19	15	17	17	16	6	36	36	195	179	374
15	Sowcarpet ...	43	33	29	19	3	9	2	4	3	4	6	16	11	13	13	14	20	8	36	43	166	163	329
16	Trevelyan Basin ...	102	93	101	103	25	31	8	15	4	19	25	38	26	30	28	27	40	23	92	87	451	466	917
17	Choolai ...	180	155	191	228	35	21	7	10	10	19	38	57	45	40	46	33	58	42	115	113	725	718	1,443
18	Puliantope ...	187	173	270	278	45	53	13	20	7	16	40	55	50	37	47	35	56	31	89	109	804	807	1,611
19	Perambur Barracks ...	69	67	95	100	24	23	10	8	4	9	17	37	20	32	26	12	37	10	50	61	352	359	711
	Semlium ...	101	88	83	102	16	17	7	12	4	12	17	32	23	18	29	19	35	26	73	67	388	393	781

21	Aynavaram ...	98	87	73	98	21	21	10	9	8	11	46	38	64	35	62	17	66	24	75	60	523	400	925
22	Kilpauk ...	80	73	34	52	11	13	8	3	4	2	16	26	20	14	12	15	19	17	41	34	245	249	494
23	Purasawalkam ...	88	102	107	109	29	27	5	5	4	6	23	30	32	24	32	17	35	25	67	65	421	410	831
24	Kosapet ...	142	148	147	162	19	29	6	13	11	16	20	38	29	26	26	15	46	33	75	81	521	561	1082
25	Vepery ...	40	40	40	34	6	10	—	5	2	6	17	16	9	18	17	12	14	12	31	40	176	193	369
26	Periamet ...	110	91	105	103	14	9	9	8	1	14	21	33	34	25	33	22	36	26	68	75	431	406	837
27	Edapalayam ...	48	43	50	50	9	9	8	4	4	6	11	25	15	15	21	11	19	11	46	36	231	210	441
28	Park Town ...	67	51	83	76	25	15	37	20	26	24	155	55	161	53	126	41	116	30	104	43	900	408	1308
29	Napier Park ...	78	68	55	66	4	9	6	4	4	15	18	26	13	18	17	12	18	19	55	51	268	288	1556
30	Chintadripet ...	95	79	84	77	14	16	6	6	4	5	15	25	25	20	27	21	32	24	48	50	350	323	673
31	Komaleesvaranpet ...	89	97	100	97	18	11	5	6	6	9	24	43	20	22	35	18	28	18	50	52	375	373	748
32	Egmore ...	94	83	83	33	8	12	6	—	3	4	12	41	8	36	15	17	21	65	42	27	242	268	510
33	Thousand Lights ...	110	82	120	114	17	19	8	5	4	6	20	39	20	30	26	15	21	31	80	74	426	415	841
34	Nungambakkam ...	74	72	84	81	28	17	6	1	4	7	8	32	14	23	11	14	21	16	68	75	318	338	656
35	Kodamdakkam ...	138	118	134	133	29	24	5	8	10	9	22	40	26	24	33	23	41	25	85	82	523	491	1014
36	Theagarya Nagar (North)	65	62	68	77	19	10	2	2	4	4	12	11	12	9	16	11	16	8	41	47	255	244	499
37	Royappetta ...	82	85	76	71	15	14	9	5	2	10	17	20	13	15	21	16	28	24	52	49	322	308	630
38	Pudupakkam ...	120	103	99	88	31	17	6	4	10	11	32	33	37	17	33	19	36	31	73	76	477	398	875
39	Thiruvateesvaranpet ...	133	111	107	101	20	27	8	3	10	13	23	41	46	22	54	34	37	28	74	82	508	464	972
40	Chepauk ...	92	82	45	65	11	8	3	6	3	17	23	29	16	23	27	17	28	12	53	50	301	305	606
41	Triplicane ...	108	79	88	79	18	26	4	4	3	5	19	25	12	22	24	14	23	16	59	59	358	333	691
42	Zam Bazaar ...	72	81	92	93	18	14	3	8	3	11	18	31	23	15	24	17	27	21	62	57	342	341	683
43	Mirsaibpet ...	237	176	260	292	58	60	16	1	17	29	43	73	52	45	74	48	69	38	144	133	970	908	1878
44	Mylapore (North) ...	129	122	155	164	52	44	9	14	6	14	30	35	22	31	34	15	41	26	81	82	559	543	1102
45	Mylapore (South) ...	60	66	57	67	13	4	4	11	6	3	11	15	15	11	13	6	19	8	54	50	252	238	490
46	Teynampet ...	125	111	128	149	35	35	5	8	6	9	21	41	30	28	28	18	28	19	66	69	472	482	954
47	Theagaraya Nagar (South)	133	125	142	136	25	42	8	3	5	10	28	34	19	22	33	17	24	14	69	78	486	494	980
48	Saidapet ...	101	97	90	104	21	18	5	16	8	12	22	31	20	22	24	20	30	20	64	80	315	408	793
49	Guindy ...	41	37	24	30	10	11	2	4	2	7	7	5	4	7	9	9	15	8	27	32	148	141	289
50	Adyar ...	77	75	78	78	14	20	6	10	4	9	14	11	23	11	21	17	27	11	50	63	314	305	619
	Total ...	5121	4700	5238	5464	1116	1087	368	406	326	527	1303	1660	1451	1244	1580	968	1676	1085	3409	3370	21588	20451	42,039

Deaths from Principal causes registered in the Divisions during 1951

Division No.	Name of Division	Plague	Cholera	Small pox	Measles	Enteric	Malaria	Other Fevers	Dysentery	Diarrhoea	Tubercle Including Tubercle or Lungs	Other Respiratory Diseases	Injuries	Maternal Deaths	All other causes	Total Deaths Registered during the year
1	New Washermenpet	...	30	41	...	3	4	67	57	121	8	334	9	1	391	1,094
2	Royapuram	...	9	19	1	4	1	55	39	44	3	173	6	4	265	611
3	Singara Garden	...	8	8		7	6	135	121	161	7	441	18	11	536	1,516
4	Sanjeeviroyanpet	...	14	59	...	17	...	301	179	111	14	476	17	6	653	1,819
5	Korukupet	...	12	33	...	4	...	272	203	122	18	488	18	8	695	1,851
			16	7	...											
6	Vyasarpady	..	...	...	...	1	...	19	43	22	10	47	7	3	481	633
7	Basin Bridge	...	5	8	...	3	2	164	88	65	22	195	8	6	292	854
8	Peddu Naickenpet	...	3	10	...	6	12	126	41	49	27	185	8	2	321	790
9	Seven Wells	...	1	6	...	22	7	140	52	51	64	205	10	3	521	1,082
10	Ammen Coil	...	3	5	...	9	5	100	32	37	19	155	2	2	279	648
11	Muthialpet	...	3	5	...	7	...	76	44	17	10	185	7	...	288	642
12	Harbour	...	5	13	...	2	...	69	58	13	3	186	10	...	231	590
13	Kachaleeswarar Koil	...	2	5	...	4	...	46	27	12	12	110	6	1	174	399
14	Kothawal Bazaar	...	1	2	...	1	5	41	19	18	7	96	3	...	181	374
15	Sowcarpet	...	3	3	...	1	2	21	8	6	9	73	3	...	200	329
16	Trevelyan Basin	...	2	13	...	7	6	77	72	33	15	256	7	...	429	9
17	Choolai	...	4	8	...	5	...	39	106	158	38	361	16	5	703	1,443
18	Puliantope	...	2	29	...	3	...	22	128	82	19	152	3	3	1,168	1,611
19	Perambur Barracks	...	2	11	...	...	...	6	55	31	9	85	4	3	505	711
20	Sembium	...	2	1	..	7	..	28	41	41	4	202	9	5	441	781
21	Aynavaram	...	...	9	...	3	1	39	66	49	48	194	13	...	501	923
22	Kilpauk	...	...	3	...	5	...	26	42	16	10	143	9	...	240	494

23 Purasawalkam	...	2	4	...	3	...	94	81	50	13	226	4	...	354	831
24 Kosapet	...	2	24	...	4	1	138	100	83	15	308	6	2	399	1,082
25 Vepery	...	1	2	...	1	1	32	12	20	12	90	3	...	195	369
26 Periamet	...	4	5	...	6	...	53	48	15	28	294	15	2	367	837
27 Edapalayam	...	4	1	...	1	1	30	23	22	21	138	2	1	197	441
28 Park Town	...	4	2	...	35	9	38	32	46	82	177	75	2	806	1,308
29 Napier Park	...	3	14	...	3	...	46	21	15	10	120	2	1	321	556
30 Chintadripet	...	2	6	...	6	...	43	22	21	6	130	8	2	427	673
31 Komaleeswaranpet	...	2	10	...	3	1	27	67	29	32	225	5	6	341	748
32 Egmore	...	1	2	...	4	1	10	27	19	8	88	6	25	319	510
33 Thousand Lights	...	2	8	...	6	1	58	67	47	19	181	7	3	442	841
34 Nungambakkam	...	4	9	...	2	1	38	45	26	12	146	9	5	359	656
35 Kodambakkam	...	5	5	...	5	...	61	103	65	6	252	18	3	491	1,014
36 Theagaraya Nagar (North)	...	5	4	...	7	...	30	72	34	11	98	7	3	228	499
37 Royapetta	...	2	7	...	2	2	43	68	10	13	188	2	..	293	630
38 Pudupakkam	...	1	2	...	5	1	56	77	31	18	273	7	1	403	875
39 Thiruvateesvaranpet	...	3	2	...	4	3	77	64	38	24	316	7	...	434	972
40 Chepauk	...	3	3	1	4	...	38	32	21	29	131	2	3	339	606
41 Triplicane	...	6	11	...	6	...	69	37	42	19	136	2	5	358	691
42 Zam Bazaar	...	1	3	...	3	1	83	43	26	28	153	...	5	337	683
43 Mirsaibpet	...	3	8	...	6	2	93	271	88	22	490	1	8	886	1,878
44 Mylapore (North)	...	1	15	...	3	1	59	188	12	9	274	4	3	533	1,102
45 Mylapore South)	...	...	5	...	3	2	41	38	13	10	76	1	1	300	490
46 Teynampet	...	4	15	...	1	3	68	118	33	29	237	15	3	428	954
47 Theagaraya Nagar (South)	...	11	15	...	1	...	80	124	83	16	183	13	2	452	980
48 Saidapet	...	9	10	...	8	8	119	58	32	19	145	10	1	374	793
49 Guindy	...	2	...	...	...	1	54	21	38	3	14	6	1	149	289
50 Adyar	...	2	...	...	3	...	57	81	16	8	106	13	...	333	619
Total	...	216	490	2	256	91	3·504	3,461	2.234	898	9,933	443	151	20,360	42,039
Ratio of Deaths per 1000 of estimated population	...	0·15	0·34	0·001	0·18	0·06	2·44	2·41	1·56	0·63	6·93	0·31	0·10	14·20	29·31

Births, Deaths, Infantile Deaths and rates for principl classes in 1951 compared with 1950

Class	Population according to the census of 1951	1951						1950					
		Total number of Births registered	Birth Rate	Total number of Deaths registered	Death rate	Total Number of Infantile Deaths	Infantile death Rate	Total number of Births registered	Birth rate	Total number of Deaths registered	Death Rate	Total number of Infantile deaths	Infantile Death Rate
European ...	1,534	34	22·16	9	5·87	...	...	34	...	12	...	...	...
Anglo Indian ...	13,247	348	26·27	208	15·70	25	71·84	381	...	224	...	37	97·11
Indian Christian	95,387	2,281	23·91	1,766	18·51	318	139·41	2,113	...	1,747	...	329	155·70
Muslim ...	1,40,319	4,930	35·13	4,029	28·71	997	202·23	4,466	...	4,193	...	1,019	228·17
Hindu ...	11,55,722	51,348	44·43	36,023	31·17	8,481	165·17	45,624	...	32,548	...	8,493	186·18
Others ...	9,847	20	2·03	4	0·41	...	...	1	...	2	...	...	...
Total ...	14,16,056	58,961	41·64	42,039	29·69	9,821	166·57	52,619	51·94	38,726	38·23	9,878	187·73

Births, Deaths and Infantile Deaths and rates by months in 1951 and 1950

Month	1951						1950					
	Total number of Births	Birth Rate	Total number of Deaths	Death Rate	Total number of Infantile Deaths	Infantile Death Rate	Total number of Births	Birth Rate	Total number of Deaths	Death Rate	Total number of Infantile Deaths	Infantile Death Rate
January ...	3,090	26·12	2,779	23·55	606	196·11	3,034	36·0	2,691	31·9	710	234·0
February ...	3,338	28·29	2,850	24·15	703	210·60	3,426	40·6	2,927	34·7	714	208·4
March ...	3,671	31·19	3,096	26·24	691	188·23	3,986	47·2	3,273	38·8	886	222·3
April ...	4,132	35·02	2,930	24·83	684	165·54	4,138	49·0	2,826	33·5	738	178·3
May ...	4,717	39·98	3,642	30·86	845	179·14	4,429	52·5	3,352	39·7	910	205·5
June ...	5,321	45·09	3,621	30·70	783	147·20	4,049	48·0	3,087	36·5	822	203·0
July ...	5,126	43·45	3,331	28·23	788	153·73	4,310	51·6	3,267	38·7	863	200·2
August ...	5,944	50·37	3,728	31·60	937	157·64	4,598	54·5	3,176	37·6	763	166·0
September ...	5,571	47·21	3,793	32·20	887	159·22	4,939	58·5	3,073	36·4	765	155·0
October ...	5,761	48·82	3,900	33·05	887	154·00	5,062	59·9	3,990	47·2	1,020	201·5
November ...	6,298	53·37	3,860	32·71	924	146·71	5,131	60·7	3,381	40·0	784	152·8
December ...	5,992	50·77	4,509	38·21	1,086	181·25	5,517	65·3	3,683	43·6	903	163·7
Total ...	58,961	41·64	42,039	29·69	9,821	166·57	52,619	51·94	38,726	38·23	9,878	87·37

VITAL STATISTICS STATEMENT NO. X

Infantile Deaths among principal communities during 1951

Community	Under seven days		Seven days and under one month		One month and under six months		Six months and under one year		Total		Total of Males and Females
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
European ...	—	—	—	—	—	—	—	—	—	—	—
Anglo Indian ...	3	2	1	2	3	3	6	5	13	12	25
Indian Christian ..	35	19	23	17	63	51	64	46	185	133	318
Muslim ...	96	50	78	49	214	200	159	151	547	450	997
Hindu ...	985	809	609	570	1,439	1,431	1,343	1,295	4,376	4,105	8,481
Others ...	—	—	—	—	—	—	—	—	—	—	—
Total ...	1,119	880	711	638	1,719	1,685	1,572	1,497	5,121	4,700	9,821

Statement of Infantile Deaths from Principal causes by Months in 1951

Month	Small pox	Measles	Malaria	Other Fevers	Dysentery and Diarrhoea	Premature Birth, debility etc	Nervous System	Respiratory Diseases	All other causes	Total infantile deaths in 1951			Total Infantile Deaths in 1950
										Males	Females	Total	
January	12	...	...	16	68	190	52	190	78	329	277	606	710
February	8	...	...	26	84	207	34	224	120	386	317	703	714
March	27	...	...	21	69	174	29	250	121	363	328	691	886
April	24	...	...	26	89	225	42	234	44	369	315	684	738
May	12	...	...	34	121	223	46	288	121	441	404	845	910
June	8	...	...	37	82	269	29	250	108	408	375	783	822
July	6	...	...	30	84	252	40	247	129	399	389	788	863
August	5	...	...	26	123	277	37	313	156	472	465	937	763
September	2	...	...	30	86	318	45	259	147	463	424	887	765
October	...	...	...	22	93	307	53	272	140	463	424	887	1,020
November	...	...	...	38	80	362	54	277	113	459	465	924	784
December	2	...	...	41	113	374	66	344	146	569	517	1,086	903
Total ...	106	...	...	347	1,092	3,178	527	3,148	1,423	5,121	4,700	9,821	9,878

VITAL STATISTICS — STATEMENT No. XII

Ratio of Infantile Deaths registered from Principal causes in 1951

Age Period	Small Pox		Measles		Malaria		Fevers		Dysentery and Diarrhoea		Premature Birth, debility etc		Nervous System		Respiratory Diseases		All other causes		Total Infantile Deaths	
	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio
Under Seven days	...	...	...	...	...	...	6	0·30	14	0·70	1,582	79·14	55	2·75	132	6·60	210	10·51	1,999	20·35
Seven days and under one month	5	0·37	...	...	...	...	10	0·74	44	3·26	984	72·94	98	7·26	130	9·65	78	5·78	1,349	13·74
One month and under Six months	43	1·26	...	...	...	...	167	4·91	475	13·95	480	14·11	270	7·93	1,328	39·01	641	18·83	3,404	34.66
Six months and under one year	58	1·89	...	...	...	...	164	5·34	559	18·21	132	4·30	104	3·39	1,558	50·77	494	16·10	3,069	31·25
Total	106	1·08	...	...	...	...	347	3·53	1,092	11·12	3,178	32·36	527	5 37	3,148	32·05	1,423	14·49	9,821	100·00

STATEMENT No. XIII

Deaths from principal causes during 1951 as compared with the previous 5 years

Year	Plague		Cholera		Smallpox		Measles		Malaria		Typhoid		Other Fevers		Dysentery and Diarrhoea		Tubercle including Tubercle of lungs		Other Respiratory deseases		Injuries		Maternal deaths		Other causes		Total deaths	
	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio	Deaths	Ratio
1946	...	...	1	0·001	184	0·19	...	...	45	0·05	107	0·11	2746	2·88	3010	3·16	405	0·42	5878	6·16	291	0·31	149	3·56	14565	15·27	27381	28·71
1947	1	0·001	2	0·002	20	0·02	...	...	55	0·06	163	0·17	2862	2·96	3847	3·97	502	0·52	6803	7·03	396	0·41	159	3·90	15169	15·67	29979	30·96
1948	...	...	210	0·21	12	0·01	...	...	40	0·04	143	0·15	2657	2·70	3112	3·17	621	0·63	7237	7·36	343	0·35	142	2·83	16485	16·77	31002	31·54
1949	...	...	48	0·05	181	0·20	...	...	37	0·04	192	0·20	2192	2·19	3220	3·23	700	0·70	8072	8·09	291	0·29	130	2·48	17576	17·62	32639	22·71
1950	...	...	214	0·21	945	0·93	...	...	102	0·10	230	0·23	2644	2·61	4335	4·28	813	0·80	8918	8·80	325	0·32	113	2·15	20087	19·83	38726	38·23
Mean of the Previous five years.	...	...	95	0·09	268	0·27	...	...	56	0·06	167	0·17	2620	2·67	3505	3·56	608	0·61	7382	7·49	329	0·34	139	2·98	16776	17·03	31945	32·43
1951	...	...	216	0·15	490	0·34	2	0·001	91	0·06	256	0·18	3504	2·44	5695	3·97	898	0·63	9933	6·93	443	0·31	151	2·56	20362	14·20	42039	29·31

VITAL STATISTICS

STATEMENT No. XVI

Births, Deaths, Infantile Deaths and deaths registered from principal causes with rates in 1951 as compared with the previous 10 years

Year	Births		Deaths		Infantile Deaths		Plague		Cholera		Small Pox		Measles		Malaria		Typhoid		Other Fevers		Dysentery and Diarrhoea		Tubercle including Tubercle of Lungs		Other Respiratory Diseases		Injuries		Maternal Deaths		All other causes	
	No. of Births excluding still Births.	Birth Rate	No. of Deaths excluding still Births	Death Rate	No. of Infantile Deaths	Infantile Death Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
1941	32,770	41·91	27,710	35·44	6,847	208·94	...	...	...	...	5	0·006	1	0·001	30	0·04	206	0·26	2,302	2·94	3,838	4·91	572	0·73	6,523	8·34	239	0·31	285	8·69	13,709	17·53
1942	20,644	25·97	18,019	22·67	4,062	196·76	...	...	97	0·12	18	0·02	...	...	282	0·35	160	0·20	1,341	1·69	2,251	2·83	301	0·38	4,093	5·15	209	0·26	154	7·46	9,113	11·47
1943	29,498	36·51	30,366	37·59	7,295	247·30	1	0.001	537	0·66	16	0·02	4	0·005	67	0·08	116	0·14	2,345	2·90	3,521	4·36	398	0·49	7,857	9·73	276	0·34	275	9·32	14,953	18·51
1944	26,056	31·74	29,705	36·19	7,407	284·27	...	...	53	0·07	144	0·18	1	0·001	82	0·10	86	0·11	2,687	3·27	3,498	4·26	290	0·35	7,166	8·73	202	0·25	178	6·83	15,318	18·66
1945	30,549	36·63	27,277	32·71	6,532	213·82	...	...	30	0·04	233	0·28	2	0·002	46	0·06	126	0·15	2,963	3·55	3,003	3·60	410	0·49	6,009	7·21	313	0·39	155	5·07	13,987	16·77
1946	41,874	43·91	27,381	28·71	7,663	183·00	...	...	1	0·001	184	0·19	...	...	45	0·05	107	0·11	2,746	2·88	3,010	3·16	405	0·42	5,878	6·16	291	0·31	149	3·56	14,565	15·27
1947	40,753	42·08	29,979	30·96	7,987	195·99	1	0.001	2	0·002	20	0·02	...	...	55	0·06	163	0·17	2,862	2·96	3,847	3·97	502	0·52	6,803	7·03	396	0·41	159	3·90	15,169	15·67
1948	50,222	51·09	31,002	31·54	7,833	155·97	...	...	210	0·21	12	0·01	...	...	40	0·04	143	0·15	2,657	2·70	3,112	3·17	621	0·63	7,237	7·36	343	0·35	142	2·83	16,485	16·77
1949	52,362	52·48	32,639	32·71	8,304	158·59	...	...	48	0·05	181	0·20	...	...	37	0·04	192	0·20	2,192	2·19	3,220	3·23	700	0·70	8,072	8·09	291	0·29	130	2·48	17,576	17·62
1950	52,619	51·94	38,726	38·23	9,878	187·73	...	...	214	0·21	945	0·93	...	...	102	0·10	230	0·23	2,644	2·61	4,335	4·28	813	0·80	8,918	8·80	325	0·32	113	2·15	20,087	19·83
1951	58,961	41·11	42,039	29·31	9,821	166·57	...	...	216	0·15	490	0·34	2	0·001	91	0·06	256	0·18	3,504	2·44	5,695	3·97	898	0·63	9,933	6·93	443	0·31	151	2·56	20,360	14·20

VACCINATION

STATEMENT NO. 1

Vaccinations performed during each month in 1951

h—6

Month	Primary Vaccination						Revaccination					
	Number of persons vaccinate			Results			Number of persons vaccinated			Results		
	Males	Females	Total	Successful	Failure	Absent	Males	Females	Total	Successful	Failure	Absent
January ...	2,313	2,315	4,628	4,628	...	...	19,389	19,888	39,277	1,382	30,028	7,867
February ...	2,919	2,926	5,845	5,838	...	7	24,008	24,893	48,901	1,761	37,130	10,010
March ...	2,704	2,557	5,261	5,255	...	6	30,192	30,821	61,013	2,040	44,616	14,357
April ...	2,549	2,663	5,212	5,207	1	4	42,826	50,527	93,353	2,328	62,704	28,321
May ...	2,098	2,178	4,276	4,270	4	2	23,877	28,201	52 078	1,242	36,906	13,930
June ...	1,951	1,935	3,886	3,882	...	4	9,444	10,061	19,505	689	13,832	4,984
July ...	2,058	1,992	4,050	4,049	...	1	10,137	10,978	21,115	807	14,799	5,509
August ...	1,931	1,800	3,731	3,726	3	2	8,951	8,769	17,720	595	12,669	4,456
September ...	1,788	1,777	3,565	3,564	...	1	7,142	7,341	14,483	541	10,072	3,870
October ...	1,794	1,743	3,537	3,537	...	...	5,882	5,798	11,680	496	8,078	3,106
November ...	1,973	1,914	3,887	3,887	...	...	6,581	6,697	13,278	555	9,417	3,306
December ...	2,093	2,056	4,149	4,149	...	...	6,827	7,062	13,889	585	10,178	3,126
Total ...	26,171	25,856	52,027	51,992	8	27	1,95,256	2,11,036	4,06,292	13,021	2,90,429	1,02,842

Particulars of Vaccinations Performed in each division during 1951

Division No.	Name of Division	Population according to the census of 1951	Totat number of Persons Vaccinated			Primary Vaccination								Unknown	Revaccination					Percentage of succesful cases in which the results were known	
						Total			Successful						Total			Result			
			Males	Females	Total	Males	Females	Total	Under one year	One year under 5 years	5 years under 10 years	10 years & above	Total		Males	Females	Total	Successful	Unknown	Primary	Revaccination
1	New Washermenpet ...	31369	5009	6163	11172	485	537	1022	592	405	25	...	1022	...	4524	5626	10150	85	5060	100·0	1·7
2	Royapuram ...	20851	4196	5217	9413	483	524	1007	629	342	36	...	1007	...	3713	4693	8406	84	2856	100·0	1·5
3	Singara Garden ...	43196	7735	8810	16545	785	831	1616	1073	504	39	...	1616	...	6950	7979	14929	137	6602	100·0	1·7
4	Sanjeevirayanpet ...	51378	5886	6613	12499	902	998	1900	1325	557	17	1	1900	...	4984	5615	10599	1030	2216	100·0	12·3
5	Korukupet ...	36606	4787	5255	10042	964	941	1905	1460	436	9	...	1905	...	3823	4314	8137	844	1715	100·0	13·1
6	Vyasarpady ...	24788	1657	2215	3872	417	323	740	610	123	7	...	740	...	1240	1892	3132	37	751	100·0	1·6
7	Basin Bridge ...	22744	2970	3741	6711	410	443	853	681	163	9	...	853	...	2560	3298	5858	121	2183	100·0	3·3
8	Peddu Naickenpet ...	31012	3316	3739	7055	500	453	953	788	160	5	...	953	...	2816	3286	6102	116	2376	100·0	3·1
9	Seven Wells ...	26984	3027	3467	6494	535	524	1059	852	202	5	...	1059	...	2492	2943	5435	121	1943	100·0	3·5
10	Ammen Coil ...	23590	3042	3148	6190	431	400	831	638	180	13	...	831	...	2611	2748	5359	94	1752	100·0	2·6
11	Muthialpet ...	26191	3355	2857	6212	515	510	1025	808	216	1	...	1025	...	2840	2347	5187	198	872	100·0	4·6
12	Harbour ...	15971	4470	3359	7829	321	339	660	450	208	1	1	660	...	4149	3020	7169	343	1470	100·0	6·0
13	Kachaleeswarar Koil ...	12793	5014	3404	8418	255	238	493	337	150	5	1	493	...	4759	3166	7925	270	2344	100·0	5·0
14	Kothawal Bazaar ...	15117	2603	3987	6590	247	253	500	347	153	...	...	500	...	2356	3734	6090	135	681	100·0	2·5
15	Sowcarpet ...	15271	1723	2029	3752	187	197	384	249	135	...	...	384	...	1536	1832	3368	72	621	100·0	2·6
16	Trevelyan Basin ...	29196	5237	7960	13197	460	525	985	752	233	...	...	985	...	4777	7435	12212	320	861	100·0	2·8
17	Choolai ...	52977	5436	6074	11510	1023	955	1978	1724	241	12	...	1977	1	4413	5119	9532	202	1843	100·0	2·7
18	Puliantope ...	44194	7190	11248	18438	852	806	1658	1186	468	4	...	1658	...	6338	10442	16780	379	4161	100·0	3·0
19	Perrmbur Barracks ...	29505	5231	6547	11785	547	551	1398	883	214	1	...	1098	...	4691	5996	10687	220	9680	100·0	2·7
20	Sembium ...	30285	5238	5377	10615	667	634	1301	1047	220	34	...	1301	...	4571	4743	9314	226	836	100·0	2·7

21	Aynavaram ...	28818	5192	6307	11499	522	568	1390	836	244	10	...	1090	...	4670	5739	10409	243	4361	100.0	4·0
22	Kilpauk ...	22916	4011	3710	7721	446	402	848	602	211	12	...	825	19	3565	3308	6873	165	1304	99·5	3·0
23	Purasawakam ...	30746	3749	4730	8479	478	462	940	711	225	4	...	940	...	3271	4268	7539	175	3259	100·0	4·0
24	Kosapet ...	39634	6215	6567	12782	570	597	1167	922	235	10	...	1167	...	5645	5970	11615	244	5859	100·0	4·3
25	Vepery ...	17424	3223	4268	7591	304	304	608	491	117	...	...	608	...	2919	3964	6883	204	2455	100·5	4·6
26	Periamet ...	31563	2256	2709	4965	571	565	1136	972	151	13	...	1136	...	1685	2144	3829	320	1123	100·0	11·8
27	Edapalayam ...	18482	2371	2722	5093	310	356	666	524	137	5	...	666	...	2061	2377	4427	195	1359	100·0	6·3
28	Park Town ...	16235	3196	3007	6203	301	323	624	433	172	8	11	624	...	2895	2684	5579	415	1055	100·0	9·2
29	Napier Park ...	19558	6843	4599	11442	439	379	818	644	172	5	1	818	...	6404	4330	10624	160	1934	100·0	2·0
30	Chintadripet ...	26497	3942	3402	7344	452	458	910	722	185	2	1	910	...	3490	2944	6434	139	1743	100·0	3·0
31	Komaleeswaranpet ...	27940	4325	4167	9492	482	487	969	720	238	11	...	969	...	3843	3680	7523	75	1705	100·0	1·3
32	Egmore ...	16704	2599	2185	4784	259	259	518	389	116	12	...	517	1	2340	1926	4266	79	1168	99·8	2·6
33	Thousand Lights ...	31342	4277	6226	10503	565	554	1119	924	192	2	1	1119	...	3712	2672	6384	62	4376	100·0	1·2
34	Nungambakkam ...	27407	3645	3737	7382	517	527	1044	741	292	10	...	1044	...	3128	3210	7338	77	1604	100·0	1·7
35	Kodambakkam ...	37134	4551	4325	18876	702	659	1361	933	379	39	4	1355	6	3849	3366	7515	309	1028	99·4	4·7
36	Theagaraya Nagar (North)	21073	3374	3274	6639	434	414	848	615	202	29	2	848	...	2940	2861	5801	451	409	100·0	8·4
37	Royapetta ...	23344	2924	2525	5449	378	373	751	555	196	...	...	751	...	2546	2152	4628	88	1363	100·0	2·7
38	Pudupakkam ...	28672	2488	2400	4880	513	429	942	711	229	2	...	942	...	1975	1971	3946	87	1028	100·0	2·9
39	Thiruvateesvaranpet ...	30363	2140	2756	4896	455	508	963	718	245	...	...	963	...	1685	2248	3933	81	989	100·0	2·8
40	Chepauk ...	24267	2109	1860	3969	370	359	729	579	141	8	1	729	...	1739	1501	3240	52	354	100·0	1·8
41	Triplicane ...	26777	5158	4672	9830	527	493	1020	701	302	16	...	1019	...	4631	4179	8810	316	1556	99·9	4·3
42	Zam Bazaar ...	25044	2969	2732	5701	462	411	879	666	197	16	...	879	...	2501	2321	4822	169	932	100·0	4·3
43	Mirsaibpet ...	44180	5350	6882	12232	786	811	1604	1246	350	8	...	1604	...	4564	6064	10628	240	1126	100·0	2·5
44	Mylapore (North) ...	38734	5575	6357	11932	581	622	1203	942	248	12	...	1203	...	4994	5735	10729	350	1844	100·0	4·0
45	Mylapore South) ...	25745	3943	4110	8053	400	415	815	587	208	18	...	813	...	3543	3695	7238	192	1877	99·7	3·6
46	Teynampet ...	33477	10213	7543	17756	703	569	1272	917	341	14	...	1272	...	9510	6974	16484	848	3565	100·0	6·6
47	Theagaraya Nagar (South)...	35392	11866	11549	23115	871	852	1723	1189	486	38	...	1723	...	10995	10397	21392	1378	2279	100·0	7·2
48	Saidapet ...	34466	7346	9444	16790	953	923	1876	1103	719	52	2	1876	...	6393	8521	14914	502	4508	100·0	6·4
49	Guindy ...	17416	3850	2954	6804	283	277	557	429	124	4	...	547	...	3570	2977	6247	161	1353	100·0	4·0
50	Adyar ...	28098	4598	4262	8860	548	511	1059	761	281	15	1	1158	...	4050	3751	7801	183	1560	99·9	2·3
	Total ...	416056	221427	236892	458319	26171	25856	52027	38784	12643	598	27	51992	27	195256	211036	406292	13021	102842	99·9	4·3

MEDICAL RELIEF STATEMENT No. I

Cases treated in Corporation dispensaries in 1951

Serial number	Division	Year of opening	Dispensary	Attendance		New cases		Operations	Remarks
				1950	1951	1950	1951		
1	1	1924	Royapuram ...	65,889	67,431	35,232	37,836	262	Allopathic
2	5	1913	Washermanpet ...	1,06,201	60,972	56,817	60,972	421	,,
3	6	1929	Vyasarpadi ...	70,161	74,074	34,721	37,194	2,429	,,
4	6	1928	Perambur ...	87,887	79,975	50,704	52,435	363	,,
5	8	1923	Mint ...	1,30,344	1,75,093	58,595	71,700	997	,,
6	11	1929	Harbour ...	66,027	81,434	31,855	35,625	252	,,
7	14	1923	Mofuzkhan ...	1,19,208	1,00,752	47,893	46,181	279	,,
8	16	1919	Trevelyn Basin ...	86,232	62,265	42,794	31,867	259	,,
9	17	1899	Baliah Naidu ...	78,963	73,899	43,677	41,510	630	,,
10	20	1946	Sembium	1,05,655	95,116	53,643	53,536	181	,,
11	21	1948	Ayanavaram ...	1,06,630	1,02,565	39,242	64,503	647	,,
12	23	1919	Kilpauk ...	66,341	62,239	33,916	34,978	143	,,
13	24	1929	Kosapet ...	86,761	45,440	38,037	40,640	424	,,
14	29	1909	Chintadripet ...	98,671	86,613	45,495	44,298	73	,,
15	32	1923	Egmore ...	58,982	59,489	30,838	31,709	91	,,
16	34	1923	Nungambakam ...	1,04,057	93,291	53,004	50,906	69	,,
17	35	1948	Kodambakam ...	30,869	73,579	20,969	15,583	363	,,
18	37	1924	Pudupakam ...	78,372	85,905	35,344	23,190	47	,,
19	41	1918	Triplicane ...	90,125	93,992	45,146	48,098	169	,,
20	43	1938	Krishnampet ...	82,131	89,981	38,854	42,594	106	,,
21	45	1924	Mylapore ...	76,911	75,305	35,955	36,814	199	,,
22	46	1927	Teynampet ...	66,137	90,093	35,718	45,699	444	,,
23	47	1922	Thyagarayanagar	1,46,902	1,46,942	34,011	65,013	211	,,
24	50	1048	Adyar ...	23,634	52,389	16,748	23,990	312	,,
25	33	1930	Thousand lights ...	62,372	93,825	32,410	48,785	2,810	W & Ch Ayurvedic
26	13	1938	Mannady ...	46,524	80,283	22,189	25,110	120	Unani
27	18	1930	Pulianthope ...	75,111	77,265	36,692	39,798	113	,,
28	31	1939	Pudupet ...	63,451	67,891	29,498	31,221	286	,,
29	39	1932	Tiruvatteeswaran-pet	1,05,690	83,897	47,168	37,446	220	,,
30	3	1945	Royapuram ...	66,135	57,557	38,301	34,606	48	Siddha
31	17	1931	Choolai ...	1,56,209	1,48,532	67,872	64,726	111	,,
32	19	1931	Otteri ...	82,051	80,491	44,875	45 581	27	,,

Cases of skin diseases and leprosy cases treated in the Corporation clinics during 1951

Name of Institution	Details of Anti-Leprosy Work											Yearly total attendance (new and old) skin and leprosy cases	Average monthly attendance
	New Leprosy cases	Types		Results of Treatment					Number of injections performed for Leprosy cases	Skin diseases			
		Infective	Non infective	Number cured	Number improved	Number symptom free	Number arrested	Number otherwise		Number of new skin cases	Number of injections performed		
Skin and leprosy clinic-Dr. Besant Road	611	68	543	...	179	24	28	380	9,912	5,604	1,802	24,153	2,013
Leprosy clinic Vysarpady ...	1,144	265	879	...	189	15	130	810	15,738	1,859	422	25,853	2,154
Corporation General Dispensaries ...	6	...	6	...	...	...	...	...	...	88,097	...	1,53,493	12,791
Total ...	1,761	333	1,428	...	368	39	158	1,190	25,650	95,560	2,224	2,03,499	16,958

Results of survey of cases of leprosy from 1-1-1951 to 31-12-51

Division No	Area surveyed	Population										Cases of leprosy detected										Gross incidence per 1,000 population examined	Child incidence per 1,000 population examined	Sex incidence male	Sex incidence female	Sex rate male cases per 100 cases of leprosy	Child rate per 100 cases of leprosy	Open case rate per 100 cases of leprosy	Suspicious cases for observation
		Enumerated					Examined					Infective					Non-infective													
		Males	Females	Male Children	Female Children	Total	Males	Females	Male Children	Female Children	Total	Male	Female	Male Children	Female Children	Total	Male	Female	Male children	Female children	Total									
												Dr. Beasant Road Skin and Leprosy clinic																	
41	Block A ...	2264	1959	998	1023	6244	1332	1629	844	915	4720	2	1	1	...	4	8	10	6	4	28	6·78	6·25	7·82	5·50	53·13	34·38	12·50	13
42	„ A ...	7268	6517	3439	3368	20592	4433	5628	3014	3089	16164	16	7	3	1	27	44	51	41	34	170	12·19	12·94	13·97	10·67	52·79	40·10	13·71	22
	Total ...	9532	8476	4437	4391	26836	5765	7257	3858	4004	20884	18	8	4	1	31	52	61	47	38	198	10·97	11·45	12·57	9·59	52·84	39·30	13·54	35
												Vyasarpady Leprosy clinic																	
21	Block A ..	3193	3218	1604	1708	9723	2075	2593	1497	1648	8213	15	15	3	1	34	52	90	71	86	299	40·54	54·66	39·48	41·37	42·33	48·34	10·21	35
21	„ B ...	2573	2566	1391	1448	7978	1385	2432	1322	1429	6568	9	5	2	1	17	34	39	35	47	155	26·19	30·89	29·55	23·81	47·15	49·42	9·87	11
21	„ C ...	733	721	323	331	2108	333	652	285	313	1583	3	...	...	...	3	4	6	6	9	25	17·87	26·77	21·01	16·59	46·42	53·57	10·71	...
21	„ D ...	1932	1891	1207	1218	6248	848	1713	1098	1189	4848	2	4	2	1	9	13	23	31	36	103	23·11	30·61	25·18	22·05	42·86	62·49	8·03	6
	Total ...	8431	8396	4525	4705	26057	4641	7790	4202	4579	21212	29	24	7	3	63	103	158	143	178	582	30·41	37·70	31·86	29·35	43·71	51·31	9·76	52
20	Block A ...	2489	2517	1329	1367	7702	1081	2409	1245	1335	6070	3	3	1	...	7	30	53	56	43	182			(Being continued)					

N. B.—Details of survey for each street is available at the clinics ; also refer to statement in the 1951 Report for the results of survey of Division 21

MEDICAL RELIEF

STATEMENT IV

Details of cases treated in the Infectious Diseases Hospital in 1951

	Small-pox	Chicken-Pox	Measles	Mumps	Cholera	Gastro Enteritis Chronic Enteritis & dysentery	Typhoid.	Diphtheria	Whooping cough	Other diseases	Contacts	Total	Remarks
Patients in the Hospital on 1—1—1951	88	37	...	6	33	4	1	1	...	...	31	201	
Patients admitted City	2,329	1,802	386	26	1,215	1,070	1	5	2	372	1,431	8,639	
Patients admitted Mofussil	217	111	14	3	227	123	...	...	...	24	...	719	
Total number of patients treated in 1951	2,634	1,950	400	35	1,475	1,197	2	6	2	396	1,462	9,559	
No. of patients discharged	2,143	1,941	393	35	1,212	899	2	6	...	320	1,447	8,398	
No. Died	472	1	2	...	216	298	...	...	1	64	...	1,054	
Mortality Rate per cent	18	0·05	0·5	...	14·6	25	...	...	50	16	...	11	
Patients in the Hospital on 31—12—1951	19	8	5	...	47	...	...	...	1	12	15	107	

No.	Defects	Boys								Girls								Remarks
		Entrants			Regulars			Total of entrants & regulars		Entrants			Regulars			Total of entrants & regulars		
		No. Defective	Percentage 1950—51	Percentage 1949—50	No. Defective	Percentage 1950—51	Percentage 1949—50	No. Defective	Percentage	No. Defective	Percentage 1950—51	Percentage 1949—50	No. Defective	Percentage 1950—51	Percentage 1949—50	No. Defective	Percentage	
1	Malnutrition ...	1341	19 64	18 57	1019	14·41	13·21	2360	16·98	734	12.00	14 22	1208	17·39	18·23	1942	14·87	
2	Dirty head, body and nails ..	483	7·07	9·39	499	7·06	5 42	982	7·06	78	1·28	1·32	78	1 12	1·11	156	1·19	
3	Teeth and mouth ...	937	13 72	17·68	662	9·36	11·70	1599	11 50	211	3·45	4·37	258	3.71	4·40	469	3·59	
4	Nose and throat ...	477	6 98	8·88	345	4·88	5·59	822	5·91	336	5·49	6·42	699	10·06	8·26	1035	7 92	
5	Eye diseases ...	291	4 26	5 60	167	2·36	2·89	458	3·29	145	2·37	1·79	157	2·26	2·54	302	2·31	
6	Vision ...	10	0·15	0·14	5	0 07	0·09	15	0.11	2	0·03	0·09	7	0·10	0 17	9	0·07	
7	Ear diseases ...	36	0·53	1·23	10	0·14	0·61	46	0·33	52	0·85	0·90	55	0·79	0·97	107	0·82	
8	Hearing ...	3	0·03	...	2	0·03	...	5	0 04	...	...	...	...	...	0·02	...	...	
9	Speech ...	2	0 04	...	4	0·06	...	6	0·04	...	...	..	2	0·03	...	2	0·02	
10	Circulatory system ...	76	1·11	1·44	28	0·40	0·60	104	0·75	62	1·13	1·54	103	1·48	1.37	172	1·32	
11	Tuberculosis ...	...	...	...	3	0·04	...	3	0 02	...	...	...	...	...	...	...	...	
12	Respiratory system ...	40	0·59	0·93	34	0·48	0·27	74	0 53	34	0·56	0 43	44	0·63	0·61	78	0·60	
13	Abdominal organs ...	25	0·37	1·54	44	0·62	0·90	69	0·50	5	0·08	0·02	6	0·09	0·06	13	0·10	
14	Bones and joints ...	472	6·91	13·38	362	5·12	6·92	834	6·00	66	1·08	1·20	54	0·78	0·81	120	0·92	
15	Nervous & psychic systems ...	3	0·04	0·10	2	0·03	0·04	5	0·04	4	0·07	0·16	3	0·04	0·09	7	0·05	
16	Infectious & Contagious diseases ...	507	7 42	18·08	357	4·96	6·88	858	6·17	346	5·66	5 03	564	8·12	851	910	6·97	
17	Other diseases and defects ...	159	2·33	3·63	134	1·89	1·65	293	2·11	89	1·46	1 58	105	1 51	1·54	194	1·49	
18	Vaccination ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
19	Deformities ...	16	0·23	0·38	13	0·18	0·09	29	0·28	7	0·11	0·23	14	0·20	0·09	21	016	

MEDICAL INSPECTION STATEMENT No. I

Group	No. on Roll		Average daily attendance		No. examined		No. defective		Percentage	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Entrants	17,776	15,080	13,707	12,039	6,829	6,116	2,850	1 ,778	41·73	29·07
Regulars					7,072	6,947	2,765	2,669	39·10	38·42
Total	17,776	15,080	13,707	12,039	13,901	13,063	5,615	4,447	40·32	34·04

MEDICAL INSPECTION Treatment Table STATEMENT No. II

Group	No. treated at Schools	No. Sent to Corporation Dispensaries	No. referred to Government Hospitals	No. referred to Govt. Ophthalmic Hospital	No. referred to Tberculosis Institute	No. of parents mt	No. of revisits paid to Schools	No. of re-examinations of children
Boys	3,275	851	766	31	3	1,150	196	4,317
Girls	3,615	469	284	26	...	740	109	8,696
Total ..	6,890	1,320	1,050	57	3	1,890	305	13,013

MEDICAL INSPECTION Height and weight Tables STATEMENT No. III

Age	Average height in inches		Average weight in pounds		Quinquennial average height in inches		Quinquennial average weigh in pounds	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
3	...	34·50	...	23·25	...	...	...	...
4	...	33·52	...	24·25	...	...	...	...
5	38·46	38·51	29·71	29·05	39·48	39·09	31·48	30·68
6	40.32	40·48	33·10	31·93	41.05	40·84	34·15	32·52
7	42·39	42·02	35·15	35·51	42·89	42·53	37·30	34.57
8	44·93	43·97	38·14	37·48	44·82	44·29	39·87	36·76
9	47·62	46·03	42·11	40·30	46·76	46·08	43·80	40·37
10	50·58	47·96	45·04	43·71	48·35	48·34	46·33	43·48
11	50·75	50·76	49·64	48·02	49·76	50·56	50·34	48·47
12	50·75	52·60	51·05	52·73	51·52	52·57	52·83	52·94
13	52·61	54·40	54·89	59·95	52·98	54·98	55·57	58·80
14	56·95	57·19	62·35	69·19	54·39	56·79	59·32	68·92
15	56·62	59·32	71·64	77·25	55·77	58·48	64·13	73·90
16	58·53	60·33	72·51	95·73	...	...	...	...
17	61·27	59·50	88·35	84·50	...	...	...	...
18	...	60·66	...	92·00	...	...	...	..

SANITATION STATEMENT 1

Details of Sewers laid during 1951

S. No	Name of area		Length of Sewers laid (in feet)
1	Tondiarpet	...	10,087
2	Perambur	...	1,810
3	Purasawalkam	...	17,434
4	Kilpauk	...	8,522
5	Chetpet	...	3,179
6	Aminjikarai	...	401
7	Gream's Road	...	6,316
8	Ice House Road	...	2,504
9	North Mylapore	...	5,275
10	South Mylapore	...	8,970
11	Thyagarayanagar	...	5,192
			69,690

SANITATION STATEMENT II

Disposal of applications for licences in 1951

Serial No.	Description of Trade	No. of cases dealt with	No. sanctioned	No. refused	No. Pending
1	Aerated water & Ice factory ...	85	82	3	...
2	Bakery, sweet-meat stall & coffee hotel	724	690	15	19
3	Candle and soaps ...	37	32	2	3
4	Cocoanut fibre, hemp and jute ...	26	24	...	2
5	Cattle yards ...	1,533	1,486	29	18
6	Bones, hoofs, hair and wool ...	27	26	...	1
7	Cart and cycle stands ...	54	54	...	...
8	Dairy produce ...	395	389	2	4
9	Flour ...	367	351	11	5
10	Grinding and condiments ...	284	250	20	14
11	Hack stables ...	12	11	1	...
12	Dyeing ...	157	144	10	3
13	Onions and garlic ...	155	155	..	...
14	Oil and oil mills ...	812	794	12	6
15	Lodging houses ...	120	115	...	5
16	Markets ...	44	44	..	...
17	Meat ...	152	140	10	2
18	Spirits, turpentine, chemicals and rosin.	367	365	...	2
19	Laundries ...	534	530	...	4
20	Fish and fins ...	21	20	...	1
21	Skin. hides and leather ...	248	240	3	5
22	Paddy boiling ...	...	...	...	...
23	Sugar ...	...	...	...	...
24	Catgut, offal, tallow ...	4	4	...	...
25	Snuff ...	202	198	2	2
26	Cotton ...	107	107	...	...
27	Eating houses ...	2,386	2,174	195	17
28	Swine ...	...	...	.	...
29	Lime-kilns ...	83	78	2	3
30	Beedi manufacturing ...	374	369	1	4
31	Manufacturing of cigars, cigaretters and storing tobacco ...	329	326	...	3
32	Camphor : storing and boiling ..	48	46	...	2
33	Shaving saloon ...	1,726	1,721	...	5
34	Husking of paddy ...	...	...	...	...
35	Groundnut storage ...	149	149	...	...
36	Grain storage ...	734	734	...	...
37	Gold refining ...	25	25	...	...
38	Poultry ...	20	20	...	...
	Total ...	12,341	11,893	318	130

FOOD ANALYSIS — STATEMENT No. I

Nature of samples	1951			1946		1947		1948		1949		1950	
	Number of samples analysed	Number of adulterated samples	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples	Number of samples analysed	Percentage of adulterated samples
Milk	2,837	2,157	76.0	1,227	64.6	1,840	64.5	2,054	50.8	2,62	62.2	2,880	72·0
Butter	467	142	30.4	164	22.0	223	18.8	356	18.8	481	21.8	475	24.8
Ghee	718	172	24.0	464	6.7	459	5.2	607	10.9	688	10.9	725	11.3
Gingelly Oil	320	39	12.2	285	9.1	374	8.3	450	11.6	409	13.4	313	12.4
Groundnut Oil	57	3	5.3	33	18.2	40	5.0	67	7.5	100	5.0	86	4.7
Cocoanut Oil	234	23	9.8	347	31.1	113	1.8	117	...	195	3.1	286	11.5
Coffe Powder	176	18	10.2	79	...	114	4.4	266	13.9	222	4.1	196	2.0
Tea	33	5	15.2	21	...	33	...	31	...	30	...	22	...
Ghee substitutes	13	5	38.5	23	47.8	6	50.0	17	47.1	14	35.7	19	26.3
Other articles	76	8	10.5	22	54.5	27	19.2	70	7.0	42	52.4	59	45.8
	4,931	2,572	52.2	2,665	38.4	3,229	40.3	4,035	31.8	4,810	39.9	5,061	47.2

FOOD ANALYSIS

STATEMENT No. II

Nature of samples	Adulterated samples among the samples analysed in 1951					Adulterated samples of the pervious year pending disposal on 1—1—1951					Total number of adulterated samples dealt with during 1951								
	Number of samples	Number of convictions	Number seized under Section 9 and forfeited or destroyed under Section 12 without prosecution	Number taken under Section 14 but acquitted, withdrawn or not prosecuted	Number pending disposal on 31—12—1951	Number of samples	Number of convictions	Number seized under Section 9 and forfeited or destroyed under Section 12 without prosecution	Number taken under Section 14 but acquitted, withdrawn or not prosecuted	Number pending disposal on 31—12—1951	Number of samples	Number of convictions	Number seized under Section 9 and forfeited or destroyed under Section 12 without prosecution	Number taken under Section 14 but acquitted, withdrawn or not prosecuted	Number pending disposal on 31—12—1951	Total fines imposed in 1951	Average fine per conviction in 1951	Number of convictions in 1950	Total fines imposed in 1950	Average fine per conviction in 1950
																Rs.	Rs.		Rs.	Rs.
Milk ...	2,157	1,014	...	34	1,109	1,343	526	...	37	786	3,500	1,534	...	71	1,895	53,502	35	1,578	53,174	34
Butter ...	142	77	...	...	65	38	22	...	1	15	180	99	...	1	80	3,135	32	119	3,074	26
Ghee ...	172	87	...	2	83	40	19	...	1	20	212	106	...	3	103	3,960	37	69	2,580	37
Gingelly Oil ...	39	29	...	...	10	15	11	...	...	4	54	40	...	...	14	1,025	26	30	700	23
Groundnut Oil ...	3	...	...	1	2	2	2	...	...	...	5	2	...	1	2	55	28	3	70	23
Cocoanut Oil ...	22	12	...	1	10	12	9	...	...	3	35	21	...	1	13	500	24	27	675	25
Coffee Powder ...	18	6	...	3	9	1	...	...	...	1	19	6	...	3	10	155	26	5	130	26
Tea ...	5	1	...	1	3	...	...	...	...	...	5	1	...	1	3	35	35	..	...	...
Ghee Substitutes ...	5	2	...	...	3	...	...	...	...	...	5	2	...	...	3	65	33	5	115	23
Other articles ...	8	4	...	1	3	2	2	...	...	...	10	6	...	1	3	215	36	31	795	26
Total ...	2,572	1,232	...	43	1,297	1,453	585	...	39	829	4,025	1,817	...	82	2,126	62,647	34	1,867	61,313	33

TABLE No. 1 WATER ANALYSIS

Showing the Relation between the daily consumption of water and average density per acre of population during 1920—'51

Year	Average daily consumption m. m. g.			Average density of population per acre	Remarks
	Max	Min	Average		
1920	16·33	12.51	14·64	29·4	
1921	15·54	12·59	13·92	29·9	
1922	15·14	12·05	13·77	29·9	
1923	16·65	12·99	14·91	24·9	
1924	16·25	12·22	13·99	28·5	
1925	16·11	13·46	14·67	22·7	
1926	18·33	15·30	16·62	22·2	
1927	18·91	10·66	14·37	22·2	
1928	17·38	14·31	15·88	27·1	
1929	18·51	16·96	17.76	2?·2	
1930	18 89	17·37	18·27	22.2	
1931	19·91	17 30	18.76	32.8	
1932	20·54	18·74	19·62	32·8	
1933	21 38	18.93	20·24	34·4	
1934	22·34	19·76	20·97	35 1	
1935	22·39	20·85	21·57	37·6	
1936	23·55	22·00	22·85	38·3	
1937	25·58	23·83	24·72	39.1	
1938	26·57	24·47	25·25	39·9	
1939	17·70	13 53	15·45	40.7	
1940	21·27	16·07	18·02	40·9	
1941	23·00	21·37	2?·36	41·6	
1942	22·12	16·69	19·25	42.2	
1943	21.63	17·37	20·09	42 9	
1944	23·83	20·66	22·37	43·6	
1945	25·17	22·58	23·83	44·3	
1946	24·10	22·81	23·74	30·2	Sembiam, Ayanavaram & Saidapet included in April 1946
1947	25·14	23·60	24·44	30·0	
1948	23·80	21·88	23·09	30·9	
1949	23·24	13·86	17·66	31·3	
1950	22·86	19·88	21·36	31·8	
1951	16·48	13·72	15·68	44·5	Based on Census population-14,16,056

TABLE II

Examination of Water Samples in 1951

Number	Description		Number of samples examined	Remarks
1	Complete bacteriological and chemical examination	...	4,223	
2	Bacteriological and chemical examination of well samples	...	38	
3	Microscopical examination of water from different places in the water supply system	...	76	
4	Identification of algae	...	32	
5	Culture media, etc., for determination and adjustment of PH	...	116	
6	Samples of water tested for the presence of free chlorine, interfering substances, etc.	...	7,968	
"	" " " " " " " " " " " "	...		
7	Examination for the presence of H_2S in filtered water samples	...	4,780	
			17,233	

TABLE III WATER ANALYSIS

Snowing the monthly average levels of the Lake and total (monthly) rainfall recorded in the Lake regions in 1951

Months		Red Hills Reservoir		Sholavaram Reservoir		Sathyamurthy Sagar (Poondi Reservoir)	
		Average lake level in feet	Total rainfall recorded in the region	Average lake level in feet	Total rainfull recorded in the region	Average lake level in feet	Total rainful recorded in the region
Jnuaary	'51	38.75	Nil	48·50	Nil	117·50	Nil
February	„	38·20	Nil	47·70	Nil	116·20	Nil
March	„	36.50	1·09	47·10	0·20	115·10	1·35
April	„	36·10	1·29	47·30	1·62	116·50	3·08
May	„	35·40	Nil	47·50	1·28	115·45	0.44
June	„	34·57	0·84	47·75	0·45	114·20	1·42
July	„	33·45	3.46	47·80	3·60	110·10	3·83
August	„	31·70	6·72	47·90	8·08	107·45	7·08
Setember	„	32·10	1·18	48·85	1·30	113·40	2.21
October	„	30·80	1·82	48·35	2·11	116·70	4·01
November	„	31·00	12·18	48·75	9.91	116·45	4·10
December	„	32·40	0·11	48·25	0·05	115·35	Nil
Slil level	„	26·16	28·69	46·16	28·60	110	27·52

TABLE IV

Limnological conditions of sources of city water supply —(a) Satyamurthy Sagar (Poondi Reservoir)
(Results expressed in parts per 100,000)

h—10

Date	Jan	Feb. 18th	March 14th	April 18th	May 24th	June 22nd	July 28th	Aug 31st	Sep 29th	Oct 19th	Nov 29th	Dec 29th
A Physical Conditions												
Time	...	2·0 PM	2.30 PM	2·0 PM	2·10 PM	2·30 PM	2·0 PM	2·40 PM	2·30 PM	2·15 PM	2.30 PM	3.0 PM
Colour & transparency	...	S B & O	S B & O	S B & O	B & O	Y & O	G & O	Y & O	Y & O	Y & O	Y & O	Y & O
Temperature (°C)	...	...	36·8	30·5	30·7	30·3	...	...	...	...	...	...
B Chemical Conditions												
Total Solids	...	37.0	42.8	25·2	43·6	54·0	61·2	43·2	...	38·0	27·2	32·4
Alkalinity to (a) Penalphthalein	...	0.7	...	Nil	1·0	1·0	Nil	...	2.1	...	0·45	0·5
Alkalinity to (b) Methyl Orange	...	...	...	9·7	18·0	20·3	9·5	...	2·0	...	11·8	7·6
P H	...	8·7	8.0	9·0	8·8	8·8	9·3	8·1	9·1	7·8	8·5	8·4
Dissolved oxygen (cc/l) % of saturation	...	4·0	4·6	6·2	4·5	5·50	10·1	5.2	4·4	5·3	5·6	6·8
Chlorides	...	6·6	8.7	1·9	5·8	8·6	11·6	...	...	...	3.9	4·8
Oxgen absorbed (Tidy's)	...	0·228	0·280	0·213	0·186	0·262	0·604	0.214	0·240	0·184	0·184	0·210
Am· nitrogen	...	0.007	0·016	0·003	Nil	0·026	0·024	Trace	...	...	0·003	0·003
Alb nitrogen	...	0.056	0·064	0·052	0·032	0.056	0·084	0·016	...	...	0·044	0·036
Nitrous nitrogen	...	M· Trace	M. Trace	Nil	Nil	Nil	Nil	Pr.	Nil	Nil	Nil	Nil
Nitric nitrogen	...	Nil	Nil	Nil	Nil	Nil	Nil	Tr·	Tr.	...	Nil	Nil
C Bacteriological Conditions												
B. coli present in ml	...	+ 1 ml	+ 1 ml	+ 1 ml	+ 1 ml	+ 1 ml	+ 1 ml	+ 1 ml.	+ 5 ml	...	...	+ 1 ml

S B· & O : Slightly brownish and opaque
B & O : Brownish and opaque
Y & O : Yellowish & opaque

TABLE V

Limnological Conditions of Sources of City Water Supply—(b) Sholavaram Reservoir 1951

Date	Jan	Feb 18th	Mar 14th	April 18th	May 29th	June 22nd	July 29th	August 31st	Sept 29th	Oct. 19th	Nov 29th	Dec 29th
A. Physical Conditions												
Time ..	...	10.0A.M,	11.0A.M.	10.0A.M.	10.0A.M.	10.45AM	10.0A.M.	10.40AM	10.30AM	10.0A.M.	10.15AM	11.20AM
Colour & Transparency.	...	S.G. & O	S.G. & O	G & O	Y·G·&O·	Y·G·&O·	Y·G·&O·	Y·G·&O·	Y.G.&O.	Y.G.&O.	Y·G·&O·	Y·G·&O·
Temperature (°C) ...	...	...	31·3	31·4	31·4	29·4	...	...	...	...	...	...
B Chemical Conditions												
Total Solids ...	...	30.2	30.8	3?.4	20.0	26.0	25 6	27.6	...	27.2	12.4	21.2
Alkalinity to (a) Phenol-phthalein	...	...	..	0.7	2.0	2·0	0.3	...	33	...	0.41	Nil.
Alkalinity to (b) Methyl Orange	...	...	...	12.3	10.4	11.2	9.5 above	...	10.8	...	6.9	7.4
P.H. ...	...	9.0	8.9	9.1	8·8	8.8	9.6	8.4	9.1	9.1	7·7	8.1
Dissolved oxygen (cc/l).	...	2.8	1.3	3.8	6·9	6.2	9·2	4.6	6·7	5·7	7.1	6·4
Chlorides ...	...	5.0	6.5	5.6	4·0	4.6	4·9	...	...	...	1.7	4.9
Oxygen absorbed(Tidy's)	...	0.622	0.942	0.472	0·300	0.420	0·52?	0.720	0.215	0.258	0.281	0.250
Am-Nitrogen ...	...	0.007	0.014	0.002	Nil.	0.026	0·003	0.014	...	..	0·002	Nil.
Alb·Nitrogen ...	...	0.060	0.072	0.044	0·052	0.056	0·062	0.028	...	...	0.030	0.036
Nitrous Nitrogen ...	...	M.T.	Nil	Nil	Nil	Nil	Nil	Tr	Nil	Tr	Nil	Nil
Nitric Nitrogen ...	...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	...	Nil	Nil
C. Bacteriological Condn.												
B. Coli in ? ml. ...	...	— 60	+ 1	+ 1	+ 5	+ 1	+ 1	+ 1	+ 1	...	...	+ 1

TABLE VI Limnological Conditions of the Red Hills Reservoir at Jones Tower 1951

(Results expressed in parts per 100,000)

Date	January	Feb. 18th	March 14th	April 18th	May 29th	June 22nd	July 28th	August 31st	Sept 19th	October 19th	Nov 29th	Dec 29th
A. Physical Condn.												
Time ...	...	8.30A.M.	9.30A.M.	9.0 A.M.	9-10A.M.	9·30A.M.	9.15A.M.	9-45A.M.	9.20A.M.	8.50A M	9·10A.M.	10.0A M.
Colour and Transparency	...	Y & O	Y & O	YG & O	Y & O	YG & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Temperature (°C) ...	...	....	31·0	31.4	31.2	29.0	...	...	...	...	...	...
B. Chemical Conditions—												
Total Solids ...	...	28.2	23.6	30·4	26.4	48.4	32.8	32·8	34.0	31,6	28·4	16·0
Alkahnity to (a) Phenol phthalein	...	...	...	Nil.	2.1	1·1	Nil.	...	2.7	...	0·46	1·6
Alkahnity to (b) Methyl orange	...	...	...	11.8	12.6	13·6	13.9	...	10.3	...	10·1	7·6
P.H. ...	...	8·9	8·9	9.0	8·8	8.8	9·1	9.2	9.3	9.3	8.3	9·3
Dissolved oxygen cc/l...	...	4·1	3·2	4·7	4.3	5.1	5·5	5.5	6.7	6·7	4·7	4·0
Chlorides ...	...	4.7	4·9	5·7	5.8	6.1	6.6	...	6.5	7·3	4.5	5·0
Oxygen absorbed ...	...	0.253	0.258	0·242	0.217	0.252	0.292	0.309	0.279	0·290	0·283	0·224
Am-Nitrogen ...	...	0·002	0.008	Trace	Nil.	0.024	0.002	0.006	Nil.	...	0·011	0·121
Alb-Nitrogen ...	...	0·046	0·064	0·088	0·060	0·072	0.084	0·036	0·056	...	0·076	0·036
Nitrous Nitrogen ...	...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Tr	M·T·
Nitric Nitrogen ...	...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
C. Bacterilogical conditions												
B Coli in ? ml ...	...	+20	+ 5.0	+ 5·0	+ 5.0	+ 1	+ 1	+ 1	+ 1	...	....	+ 1

Y & O—Yellowish and opaque
Y G & O—Yellowish green and opaque

Limnological Conditions of the Red Hills Reservoir (Before entering the Roughing Filters)

Date	Feb. 18th	Mar. 14th	April 18th	May 29th	June 22nd	July 28th	Aug. 31st	Sep. 29th	Oct. 19th	Nov. 29th	Dec. 29th
A Physical Conditions											
Time	PM 8·40	9·15 AM	9·10 AM	9·20 AM	9·40 AM	9·20 AM	9·55 AM	9·25 AM	8·55 AM	9.20 AM	10·15AM
Colour & transperancy	Y & O	Y & O	Y & O	SGO	LG	Y&O	Y & O	Y & O	Y & O	Y & O	Y & O
Temperature(°C)	...	30·8	31·0	2·9	...	...	...	...	...	...	...
B Chemical Conditions											
Total Solids	...	...	32·4	...	...	32·9	...	...	32·0	31·2	...
Alkalinity to (a) Phenolphthalein	...	...	...	...	...	...	...	2·8	...	0·7	0·5
Alkalinity to (b) Methyl Orange	...	...	...	...	...	...	...	10·8	...	9·9	7·6
PH	8·9	8·9	9·0	8·8	8·8	9·1	...	9·3	9·3	8·8	9·4
Dissolved Oxygen	4% cc/l	3·2 cc/l	4·5 cc/l	4·3 cc/l	4·8 cc/l	5·2 cc/l	4·9/l	6·2 c/l	5·4 cc/l	4·9 cc/l	4·2 cc/l
% of saturation	71·2	57·6	...	...	...	...	...	...	...	...	...
Chlorides	4·7	4·9	5·7	5·8	6.1	6·6	...	...	...	4·5	5·0
Oxygen absorbed	0·230	0.255	0·243	0·227	0·248	0·253	0·278	0·277	0·296	0·206	0·218
Amm. nitrogen	0·002	0·006	Trace	Nil	0·020	0·002	0·046	...	...	0·006	0·216
Alb. nitrogen	0·048	0·060	0·064	0·060	0·70	0·088	0·040	...	...	0·076	0·036
Nitrous nitrogen	Nil	Nil	Nil	M. T.	Nil	Nil	Nil	Nil	Nil	Trace	MT
Nitric nitrogen	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	...	Nil	Nil
PO_4	...	...	...	...	...	...	...	...	...	...	...
SIO_2	...	...	...	...	...	...	...	...	...	...	...
C Pacteriological Conditions											
B Coil in ? ml.	+60 cc	+ 5 cc	+ 5 cc	+ 5 cc	+ 1 cc	+ 1 cc	+ 1 cc	+ 1 cc	...	...	+1 cc
D Biological Conditions											

TABLE VIII — WATER ANALYSIS

Limnological conditions of Red Hills Reservoir after entering Roughing Filters and just before entering the Raw water conduits

Date	Jan.	Feb. 18th	Mar. 14th	April 18th	May 29th	June 22nd	July 28th	Aug. 31st	Sep. 29th	Oct. 19th	Nov. 29th	Dec. 29th
A Physical Conditions												
Time	...	9·0 AM	9·45 AM	9·20 AM	9·20 AM	9·50 AM	9·20 AM	10·0 AM	9·30 AM	9·00 AM	9·30 AM	10·20AM
Depth	...											
Colour & Transparency	...	Y & O	Y & O	Y & O	Y & O	L G	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Temperature	...	...	30·8	31·c	31·c	29·2	...	...	...	...	...	...
B Chemical Conditions												
Total Solids	....	...	...	...	36·0	...	...	32·8	...	..	27·2	31·2	...
Alkalinity (a) Penalphthalein	...	...	...	...	...	....	...	Nil	...	2·7	...	1·0	0·5
Alkalinity (b) Methyl Orange	...	...	...	...	...	...	...	13·9	...	10·3	...	10·2	7·8
P H	...	...	8·9	8·9	9·0	8·8	8·8	8·9	...	9·3	9·3	8·7	8·5
Dissolved Oxygen	...	...	4·1cc/l	3·2cc/l	4·1 c/l	4·4 cc/l	4·6 cc/l	5·4cc/	5·1cc/l	6·6 cc/l	5·5 cc/l	3·4 cc/l	4·3 cc/l
Chlorids	...	...	4·7	4.9	5·7	5·8	6·1	6·6	...	...	...	...	...
Oxygen absorbed	...	...	0·228	0·249	0·244	0·230	0·235	0·265	0·315	0·280	0·288	0·277	0·118
Am· nitrogen	...	...	0·002	0·004	Trace	0·002	0·016	0·002	0·006	...	...	0·011	0·002
Alb· nitrogen	...	...	0·040	0·056	0·048	0·060	0·068	0·088	0·032	...	...	0·044	0·032
Nitrous nitrogen	...	...	nil	nil	nil	nii	nil	nil	nil	nil	nil	Trace	Trace
Nitric nitrogen	...	...	nil	nil	nil	nil	nil	nil	nil	nil	...	nil	nil
Po4	...	...	...	...	...	...	...	...	...	...	...	...	...
Six2	...	...	...	...	...	...	...	...	...	...	...	...	...
C Bacteriological Conditions												
B· Coil present in ml·	...	...	+ 5·cc	+5·cc	+5 cc	+ 1·cc	+5/cc	+20 cc	+ 1 cc	+1·cc	...	...	+ 1·cc

TABLE IX

WATER ANALYSIS

Physico—Chemical and bacteriological Conditions of Raw Water at Kilpauk end of raw water Conduits.

(Weekly averages)

Months and weeks ending	January 51					February 51					March 51					April 51				
	6th	12th	19th	27th	31st	3rd	10th	16th	24th	28th	3rd	10th	17th	22nd	31st	6th	13th	20th	28th	30th
Time																				
Temperature																				
Colour ...	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Transparency																				
Am-Nitrogen ...	Nil	Nil	0·002	0.002	Nil	Nil	Tr	Nil	0·020	Nil	0·002	0.002	Nil	0·001	0·002	0·002	0·002	0·001	0·003	0·002
Alb-Nitrogen ...	0·044	0·048	0·064	0·064	0·070	0·056	0·60	0·058	0·060	0·056	0·068	0·060	0·062	0·064	0·056	0·056	0·057	0·066	0·073	0·078
Nitrous Nitrogen.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nitric „ ...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Chlorides ...	4·5	4·5	4·5	4·5	4·5	4·5	4·6	4·7	4·8	—	5·0	4·9	4·9	5·3	5·2	5·2	5·2	5·4	5·3	—
Dissolved oxygen cc/l	3·8	3·7	3.7	3·7	—	3·7	3·7	3·4	3·4	—	3·6	3·5	3·4	3·1	4 7	4·6	4·5	4·3	4·3	—
%Saturation ...																				
Oxygen absorbed..	0·177	0·201	0.203	0·211	0·218	0·20	0·197	0·22.	0.2 2	0·235	0·244	0·245	0·240	0·261	0·260	0·285	0·222	0·230	0·242	0·241
P. H. ...	8·9	8·9	8·9	8·9	—	8·9	8·9	8·9	8·9	—	8·8	8·8	8·8	8·6	8·9	8·9	8·9	8·9	8·8	—
Total Hardness...																				
Per. „ ...																				
Total Solids ..																				
B coli in cc. Volumes	+1cc	+20cc	+20cc	+20cc	—	+1cc	+60cc	+1cc	+5cc	—	+20cc	+1cc	+20cc	+5cc	+1cc	+5cc	+20cc	+10cc	+5cc	+10cc

Physics—Chemical and bacteriological conditions of Raw water at Kilpauk end of Raw water conduits (Weekly averages)

Months and weeks ending.	May '51.					June '51.					July '51.				August '51.				
	5/5	12/5	18/5	26/5	30/5	2/6	9/6	16/6	22/6	30/6	7/7	14/7	21/7	28/7	4/8	11/8	17/8	24/8	31/8
Time																			
Temperature ...																			
Colour ...	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Transparency ...																			
Am-Nitrogen ...	0·003	0·001	0·002	0·002	0·002	0·002	0·002	0·003	Nil	0·004	Nil	Nil	Nil	Nil	Tr.	Tr.	...	...	Tr.
Alb-Nitrogen ...	0·056	0·068	0·072	0·058	0·072	0·072	0·066	0·075	0·076	0·047	0·072	0·074	0·058	0·058	0·072	0·063	...	...	Tr.
Nitrous Nitrogen.	Nil	Nil	M.T.	M.T.	...	M.T.	M.T.	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nitric Nitrogen...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Chlorides ...	5·5	5·7	5·6	5·6	...	5·8	5·7	6·1	6·4	6·6	6·3	6·7	6·6	6·8	7·1	7·2	7·2	...	7·0
Dissolved oxygen cc/l ...	4·2	4·2	4·4	4·4	...	4·3	4·3	4·3	4·6	4·8	4·5	4·5	4·8	4·9	4·8	5 5	5·6	...	5·3
Oxygen absorbed.	0·251	0·230	0·231	0·251	0·24 1	0·240	0·232	0·266	0·261	0·273	0·269	0·266	0·293	0·333	0 275	0·284	0·275	0·294	0 310
P.H. ...	8 8	8·8	8·9	8·9	...	8·7	8·9	8·8	8·8	8·8	8·8	8·9	8·8	8·9	8·9	8·9	8·9	...	9·2
Total Hardness...	...	...	....	...	...	...	...	...	10·0	10·0	10·1	10·1	9·6	9·0	9·7	9·1	9·0	...	9·1
Perm „ ...	...	..	...	...	...	...	...	...	6·0	6·3	6·5	6·8	7·1	6·4	7·0	6·4	6·3	...	6·4
Total Solids ...	...	...	32·0	39·0	...	32·4	34·0	30·8	28·0	32·5	33·2	31·8	32·5	41·0	30·0	31·6	...	...	42·0
% samples B. Coli in 5 ml and upwards ...	+10cc	+10cc.	+10cc.	+ 20cc.	...	+20cc.	+1cc.	33%	0%	0%	40%	0%	40%	0%	20%	25%	0%	...	30%

TABLE IX—(contd)

Physico—Chemical and Bacteriological conditions of raw water at Kilpauk end of conduits (weekly averages)

Months and weeks ending	September 51				October 51				November 51					December 51			
	7th	15th	21st	29th	6th	13th	20th	27th	3rd	10th	16th	24th	30th	8th	15th	21st	29th
Time Temperature Colour ...	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O	Y & O
Transparency ...																	
Am-Nitrogen ...	nil	uil	Tr.	nil	...		0.003	...	...	...	...	...	nil	Tr.	Tr.	0.013	Tr.
Alb-Nitrogen .	0·060	0·064	0·075	0·066	...	...	0.052	...	...	...	...	...	0.060	0·052	0·013	0.036	0·044
Nitrous Nitrogen.	Mt	Mt	nil	nil	nil	uil	...	nil	...	nil	Mt	M. T.	nil	Tr.	nil	nil	M. T.
Nitric „ ...	nil	nil	nil	nil	nil	nil	...	nil	...	nil	nil	Tr.	nil	M. T.	nil	nil	Tr.
Chlorides ...																	
Dissolved oxygen cc/l.	...	5·1	5·3	5·5	5·3	5.5	5·6	5·7	4·3	4.8	5.0	5·2	6.4	5·0	4·9	4·7	5·1
Oxygen absorbed	0·294	0·289	0.293	0.284	0·280	0·296	0·306	0·286	0·290	0·291	0·294	0.250	0·260	0.211	0·234	0·230	0·221
P.H. ...	9.1	9,3	9·4	9 4	9·2	9.2	9·3	9·3	9·4	9·3	9·4	9·3	9.3	9.2	9·3	9·2	9·3
Total Hardness...	9·1	9·0	...	9·2	...	...	...	..	...	...	...	...	...	...	...	...	...
Perm „ ...	6.5	6·3	...	6·3	...	...	...	..	...	...	...	..	...	...	...	—	...
Total Solids ...	...	46·0	...	30·0	...	...	...	33·6	...	...	...	...	...	30.0	26.0	24.0	18·0
%of samples showing B coli in 5 ml Volumes	50	30	40 %%	40 %	...	...	40 %	40 %	...	...	60 %	70%	68 %	60 %	50 %	60 %	70 %

TABLE X Relation between total Monthly Rainfall, average monthly Lake Level, Oxidisable Organic matter & Albuminoid Nitrogen in raw water, from 1942 to 1951

Month	1942				1943				1944				1945				1946			
	Total Monthly Rainfall	Lake level	Organic matter	Alb. Nitrogen	Total Monthly Rainfall	Kake Level	Organic matter	Alb Nitrogen	Total Monthly Rainfall	Lake Level	Organic matter	Alb. Nitrogen	Total Monthly Rainfall	Lake Level	Organic matter	Alb. Nitrogen	Total Monthy Ruinfall	Lake Level	Organic matter	Alb. Nitrogen
January ...	Nil	45 51	0·131	...	3.25	43·53	0·133	...	0·27	45·51	0·110	...	Nil	45·84	0·119	0.014	0·50	44·30	0.144	0·040
February ...	Nil	44·68	0·1 1	...	0·12	44·15	0·141	...	2·30	44·68	0·117	...	Nil	45·37	0·120	0·020	Nil	43·45	0·146	0·033
March ...	Nil	43·57	0·132	...	Nil	43·13	0·133	...	8·92	44·85	0·109	...	0·70	44·27	0·136	0·02	0·70	43·19	0·170	0·024
April ...	1·37	42·36	0·151	...	1·50	41·86	0·137	...	Nil	45·04	0·122	...	2·15	43·95	0·124	0·026	...	41·91	0·185	0·034
May ...	Nil	41·10	0·153	...	10·56	42·23	0·131	...	Nil	43·69	0 124	...	Nil	44·22	0 139	0 025	1·17	40·23	0·194	0·034
June ...	1·89	39·51	0·152	...	1·95	43·83	0 128	...	3·53	42·33	0·139	...	1·00	43·12	0·144	0·026	3·70	33·45	0·220	0·050
July ...	2·18	38·27	0·1 7	...	1·41	43·89	0·134	...	5·66	42·11	0·137	...	3·51	42 33	0·141	0 033	4.00	38·00	0·242	0·053
Augnst ...	3·80	37·17	0·162	...	5·50	43·82	0·150	...	6·27	42·55	0·125	...	2·00	42·80	4·161	0·038	2·79	37·28	0·257	0·076
September ...	3·68	36·61	0·166	...	0·59	44·97	0·172	...	2·86	44·31	0·118	...	2·51	42 60	0·158	0·035	2·57	36·27	0·275	0·090
October ...	3·53	37·39	0 150	...	26·44	44·99	0·122	...	9·10	43·64	0·129	...	1·36	42·42	0·175	0·039	8·70	35·73	0·256	0·081
November ...	2·61	37·98	0·151	...	13·77	45·23	0·118	...	24·78	43·56	0·139	...	20·09	44·42	0·177	0 087	28 68	43·52	0·172	0·059
December ...	12·94	39·27	0·150	...	1·41	45·13	0·100	...	7·64	45·35	0·101	...	Nil	45·23	0 125	0·035	23·95	42·33	0·143	0 033

TABLE X (contd)

Month	1947				1948				1949				1950				1951			
	Total monthly rain Fall	Lake leavel	Organic matter	Abb. Ammonicals	Total monthly rain fall	Lake level	Organic matter	Abb. Ammonicals	Total monthly rain Fall	Lake leavel	Organic matter	Abb. Ammonicals	Total monthly rain Fall	Lake leavel	Organic matter	Abb. Ammonicals	Total monthly rain Fall	Lake leavel	Organic matter	Abb. Ammonicals
January ...	7·42	45·45	0·119	0·025	0 28	41·72	0·162	0·040	Nil	39·27	0·258	0·062	0·22	40·62	0·147	0·066	Nil	38·75	0·202	0·058
February ...	0·03	45·60	0·122	0·024	0·12	41·81	0·200	0·047	Nil	38 35	0·263	0·059	0·90	40·31	0·187	0·051	Nil	38·20	0·219	0·053
March ...	Nil	45·50	0 143	0·028	Nil	40·84	0·226	0·049	Nil	37·48	0 252	0·060	0·70	40·43	0·204	0·050	1·09	36·50	0·250	0·062
April ...	Nil	42·95	0·162	0·038	0·15	39·50	0·246	0·070	Nil	36·25	0·267	0·072	Nil	40·45	0·246	0·068	1·29	36·10	0·244	0·066
May ...	Nil	41·75	0 162	0·030	Nil	38 63	0·284	0·068	7·33	35·14	0·272	0·072	1·79	38·92	0·234	0·065	Nil	35·40	0·241	0·068
June ...	Nil	40·61	0·142	0·027	0·51	38 46	0·292	0·059	5·38	35·41	0·287	0·080	1·23	37·78	0·259	0·061	0·84	34·50	0·252	0·067
July ...	1·95	38·8	0·150	0·029	5·05	37·58	0·300	0·076	4·20	35·61	0·272	0·070	2·97	36·45	0·286	0·073	3·46	33·45	0·290	0·066
August ...	3·44	37.53	0·177	0·034	1·77	36·33	0·354	0·082	6·81	35·66	0 222	0·073	3·84	35·10	0·309	0·081	6·72	31·70	0·288	0·063
September ...	10·62	38·92	0·188	0·024	5·29	35·48	0 337	0·082	3 88	40·24	0 213	0·054	4·45	34·21	0·	0·080	1·18	32·10	0·290	0·066
October ...	6·29	41·65	0·192	0·032	3·99	34·97	0 377	0·084	1·82	41·52	0·168	0·058	7·33	34·71	0·230	0·074	1·82	30·80	0·294	
November ...	2·28	41·64	0·183	0·053	7·74	36·67	0·284	0 072	5·04	41·14	0·175	0·053	6·73	36·44	0·231	0·074	12·18	31·00	0·277	0·060
December ...	0·12	40·80	0·178	0·044	0·76	38·39	0·226	0·066	Nil	41·14	0·175	0·054	Nil	37·46	0·194	0 066	0·11	32·40	0 227	0·044

TABLE XI — Chlorination data for 1951 — Water Analysis

Month	Number of samples of water tested for free chlorine and for Interfering substances.	Quantity of water filtered in million gallons per day.			Dose of Chlorine in P. P. M.			Lbs, of chlorine used per month for post-chlorination	Lbs. of chlorination used per month for pre-chlorination	Total lbs. of liquid chlorine used per month	Cost of chlorine per lb.	Total cost of chlorine	Average number of beds per day in use
		Max	Min	Mean	Max	Min	Mean						
January ...	775	20.66	14·32	17.00	1·34	0·96	1·20	6488	4784	11272	0 8 6	Rs, A, P, 6,081 13 0	9
February ...	700	15.32	14.32	15.00	1·85	1.09	1·15	4700	4483	9183	... 0 0 3 S, Tax	4,954 11 0	8
March ...	775	16.66	14.66	15;30	1·60	0 99	1·20	5700	5061	10761	„	5,806 1 9	8
April ...	680	20.38	14.86	15.44	1·56	1,04	1·37	6465	5963	12428	„	6,705 8 6	8
May ...	620	20,66	15.00	16.33	2·00	1,26	1·60	7915	6863	14778	„	7,973 7 9	9
June ...	600	17:66	15.32	16.48	2·00	1,12	1·44	9027	7679	16706	„	9,013 11 9	8
July ...	620	17.66	14.99	15.92	2·08	1,66	1·95	9676	10223	19899	„	10,736 7 9	8
August ...	620	17.66	14.33	16.12	2·17	1,76	1·94	9672	10770	20442	„	11,029 8 0	9
September ...	600	19.66	14.66	16·38	2·12	1,58	1·88	9261	10054	19315	„	10,421 6 6	9
October ...	742	17.32	14.07	15·81	2·12	1,64	1·95	9672	10647	20319	„	10,865 15 6	10
November ...	671	15.66	12.66	14.65	2·45	1,94	2·15	9482	9967	19449	„	10,493 11 0	9
December ...	558	15.66	11.66	13.72	2·60	3,08	2·26	9615	6312	15927	„	8,593 6 3	8
Average ...	664	17.91	14·23	15·68	1·99	1·43	1·67	8139·5	7734	15873.2	„	8,556 5 9	9

TABLE XII WATER ANALYSIS

Percentage of reduction in the Tidy's Figures at various stages of the purifications system at Kilpauk water works

Months	Raw water	Chlorinated Raw water	Percentage of Reduction in Tidy's Fig. after Prechlorination	Test Imp	Percentage of Reduction after filteration and postchlorination	Remarks
January 1951 ...	0·202	0·187	7·4	0·150	25·7	
February „ ...	0·219	0·214	2·3	0·193	11·9	
March „ ...	0·250	0·247	1·2	0·219	12·4	
April „ ...	0·244	0·228	6·6	0·197	19·3	
May „ ...	0·241	0·232	3·7	0·198	19·3	
June „ ...	0·252	0·246	2·4	0·201	20·2	
July „ ...	0·290	0·271	6·6	0·228	21·4	
August „ ...	0·288	0·273	5·2	0·239	17·0	
September „ ...	0·290	0·270	6·9	0·230	24·1	
October „ ...	0·292	0·266	8·9	0·212	17·1	
November „ ...	0·277	0·277	Nil	0·228	17·1	
December „ ...	0·227	0·212	6·6	0·178	21·6	

TABLE XIII WATER ANALYSIS

Analysis of Filter Skins collected from Madras Sand Filters.

Serial No.	Date	Locality Filter Beds	Analysis—Results
1	4-5-51	12	Bloodworms (Dyscamptocladins)
2	7-5-51	10	Fish (Lepidocophalus thermalis) Prawn (Palaemon malcolmsonli).
3	11-5-51	3	Bloodworms (Dyscamptocladius) Blue green alga—Oscillatoria Mexiomopedium.
4	21-5-51	11	Do
5	23-5-51	4	Thick, greenish soft scum Nymphs of dragon fly (Odonata) Beetle (Cybister confusus) Prawn (Palaemon mal colm sonli).
6	do	14	Mosquito larvae—Ostracod (Stenocypris).
7	do	11	Water bugs (Anisops varius and corixa hieroghyphica).
8	24-5-51	8	Thick, rothing, black, foul filter skin—Nymph of dragon fly and prawn—water bug (coriya hieroglyphica)—Amsops varius)—Fish (Spratelloides malabaricus).
9	25-5-51	13	Bluegreen alga—Oscillatoria—bloodworms.
10	do	10	Bloodworms—Ostracod (Stenocypris)—green algae (closterium and Cosmarium)—diatons (Cymbella, Narricula and Pinularia).
11	29-5-51	11	Thick, greenish, slumy, full of tubs containing scum, Bluegreen algael (Osullatoria, Merismopedia Gastropad (Limnaca Succinea)—Protozoa (Diffligia)—Ostracod (Stenocypris)—Nematoda (Actinolaimus) —Oligocheeta (Aclosoma).
12	1-6-51	2	Bloodworms—Weeds (Naisfloxilis)—Blue-green alaga (Merismopedia)—Green alga (Scenedesmus).
13	2-6-51	13	Shells of gastropod (Lumnaea Succinea).
14	4-6-51	7	Blue-green alga (Cscillatoria, Merismopedia) —Green alga (Closterium)—Ostracod (Stenocypris).
15	7-6-51	12	Ostracod (Stenocypris)—insectappendages—Bloodworms.
16	12-6-51	15	Bloodworms—Larvae of May fly (Ephemeroptera)—Blue-green alga (Mermopedia)—Green alga (Closteric and Cosmarium).
17	5-7-51	10	Moult of nymphs of dragonf

TABLE XIV — Kortalayar River Distribution system — WATER ANALYSIS

Month	High pressure Areas (near the Head works) — Results of chemical examination Expressed in parts per 1,00,000											Low pressure areas (Outlying divisions of the city) — Results of chemical Examination Expressed in parts per 1,00,000										
	No. of Samples	Smell	Ammoniacal Nitrogen	Albuminod Nitrogen	Nitrous Nitrogen	Nitrice Nitrogen	Chlorides	Oxygen Absorbed	P. H.	Total Hardness	Total Solids	No. of Samples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Nirous Nitrogen	Nitrice Nitrogen	Chlorides	Oxygen Apsorbed	P. H.	Total Hardness	Total Solids
January 1951 ...	20	nil	0·008	0·049	nil	nil	5·0	0·154	8·2	...	26·1	140	nil	0·012	0·038	nil	nil	4·9	0·165	8·2	...	29·2
February „ ...	20	nil	0·002	0·040	nil	nil	5·0	0·178	8·0	...	24·4	130	nil	0·003	0·010	nil	nil	4·9	0·175	8·0	6·9	24·9
March „ ...	20	nil	0·017	0·052	Trace	nil	5·2	0·200	8·1	6·9	25·0	130	nil	0·016	0·052	Tr	nil	4·9	0·204	7·4	7·7	24·1
April „ ...	10	nil	0·003	0·038	Mt	Tr	5·5	0·136	8·0	7·7	40·4	90	H 25	0·006	0·010	Mt	nil	5·4	4·205	7·9	7·7	31·3
May „ ...	12	nil	0·008	0·010	Pr	Mt	5·8	0·217	8·1	10·0	30·5	58	H 25	0·003	0·055	Tr	Tr	5·7	0·204	8·0	10·0	28·8
June „ ...	...	...	No Samples could be taken					...	...	..	...	45	H 25	0·007	0·047	Tr	nil	6·1	0·214	7·9	10·1	29·1
July „ ...	12	nil	0·010	0·046	Tr	nil	6·7	0·214	8·0	8·3	32·3	46	H 25	0·017	0·048	Tr	Tr	6·5	0·222	8·1	9·0	29·9
August „ ...	12	nil	0·003	0·050	Mt	...	7·1	0·230	8·3	9·2	31·0	44	nil	0·005	0·054	nil	nil	7·0	0·240	8·3	9·1	34·9
September,„ ...	20	nil	0·016	0·063	Pr	nil	...	0·238	8·6	9·0	32·4	37	H 25	0·014	0·058	Pr	Tr	...	0·238	8·3	9·1	34·4
October „ ...	...	...	...	...	No Samples could be taken						...	...	...	...	...	...	...	...	...	...	...	...
November,„ ...	12	nil	...	...	Mt	Mt	...	0·230	8·7	...	...	38	nil	0·002	0·040	Mt	Mt	...	0·218	8·6	...	...
December,„ ...	7	nil	...	0·041	Tr	nil	...	0·206	8·6	...	23·4	13	nil	0·001	0·055	nil	Tr	...	0·210	8·6	...	22·6
January 1952 ..	...	...	...	...	...	...	...	...	...	No Samples could be taken		...	...	...	...	...	...	...	...	...	...	...
February „ ...	10	nil	0·033	0·033	Mt	Mt	5·0	0·201	...	5·9	27·4	10	nil	0·003	0·034	Tr	Tr	5·0	0·179	...	6·1	22·8
March „ ...	...	...	...	No Samples could be taken				...	...	....		20	nil	0·003	0·034	Tr	Tr	5·6	0·173	...	5·6	27·0

TABLE XV

WATER ANALYSIS

Kortalayar River and Red Hills Distribution System - Results of Bacteriological Examination, 1951 -52.
High Pressure and low Pressure Areas of the city.

1951-52 Months		High Pressure areas: No. of Samples.	Lactose fermenters in —60 c. c.	+60 c. c.	+20 c. c.	+10 c. c.	+5 c. c.	+1.0 c. c.	+0·1 c. c.	Low Pressure areas. No. of Samples.	Lactose fermenters in —60 c. c.	+60 c. c.	+20 c. c.	+10 c. c.	+5 c. c.	+1 c. c.	+0·1 c. c.
January	1951	20	65%	20%	10%	Nil	5%	Nil	...	140	(The average given is total for both low pressure & High pressure areas)						
February	„	20	58%	22%	Nil	12%	8%	Nil	...	130	Do.						
March	„	30	55%	25%	15%	Nil	5%	Nil	...	130	Do.						
April	„	10	Nil	Nil	13%	12%	50%	25%	...	90	20%	25%	19%	6%	17%	13%	...
May	„	12	8%	50%	8%	26%	8%	Nil	...	58	34%	17%	25%	5%	15%	4%	...
June	„	..	...	...	No. Samples could be taken					45	24%	22%	9%	6%	24%	15%	...
July	„	12	80%	10%	Nil	Nil	10%	Nil	...	46	44%	26%	11%	11%	4%	4%	...
August	„	12	50%	42%	8%	Nil	Nil	Nil	...	40	37%	22%	20%	15%	3%	3%	...
September	„	20	65%	20%	10%	5%	Nil	Nil	...	37	43%	18%	17%	20%	2%	Nil	...
October	„			No Samples could be taken							No Samples could be taken						
November	„					Do.							Do.				
December	„	4	25%	Nil	Nil	Nil	50%	25%	...	13	93%	Nil	Nil	Nil	Nil	7%	...
January	1952	Nil	...	...	No Samples could be taken							No Samples could be taken					
February	„	10	70%	Nil	30%	Nil	Nil	Nil	...	10	34%	Nil	Nil	Nil	Nil	66%	...
March	„			No Samples could be taken						20	50%	20%	Nil	10%	10%	10%	...

TABLE XVI — WATER ANALYSIS

Kortalayar Water Supply System—Results of Chemical analysis of Samples Collected from taps in the Booster area
(Results expressed in parts per 100,000)

Month		No. of Samples	Smell	Ammoniacal Nitrogen	Albuminoid Nitrogen	Nitrous Nitrogen	Nitric Nitrogen	Oxygen Absorbed	P. H.	Total Hardness	Total Solids
January	51			No Samples could be taken							
February	„	5	Nil	0·003	0·036	Nil	Nil	0·164	7·6	—	—
March	„			No Samples could be taken							
April	„	5	Nil	0·005	0·047	Nil	Nil	0·196	7·9	7·3	29·5
May	„			No Samples could be taken							
June	„	6	Nil	0·003	0·036	Tr.	Tr.	0·189	7·9	10·6	29·7
July	„	4	Nil	0·002	0·044	Nil	Tr.	0·221	8·1	9·0	34·8
August	„	3	H. S. Smell	0·008	0·022	Nil	Nil	0·282	8·3	10·0	37·0
September	„	3	Nil	0·018	0·068	Pr.	Tr.	0·245	8·3	8·9	35·6
			No Samples could be taken from October '51 to March '52								

TABLE XVII WATER ANALYSIS

Kortalayar river System—Distribution system—Results of Bacteriological Examination, 1951-1952—Booster Areas of the city.

Months	No of Samples	Coliform organisms presents in						
		—60 c. c.	+60 c. c.	+20 c. c.	+10 c. c.	+5 c. c.	+1 c. c.	+0·1 c. c.
January 1951 ...	...	...	No Samples could be taken					...
February „ ...	5	60%	Nil	20%	20%	Nil	Nil	...
March „ ...	...	No Samples could be taken					...	...
April „ ...	5	40%	Nil	Nil	60%	Nil	Nil	...
May „ ...	...	No Samples could be taken					...	...
June „ ...	6	Nil	Nil	Nil	Nil	17%	83%	...
July „ ...	4	50%	Nil	Nil	50%	Nil	Nil	...
August „ ...	3	66%	34%	Nil	Nil	Nil	Nil	...
September „ ...	4	50%	50%	Nil	Nil	Nil	Nil	...
October „ ...	...	No Samples could be taken from Oct '51 to March '52					...	...
November „ ...	...						...	...
December „ ...	...	...	...	...	...	...	...	...
January 1952 ...	...	...	...	...	...	...	...	...
February „ ...	...	...	...	...	...	...	...	...
March „ ...	...	...	...	...	...	...	...	...

TABLE XVIII

WATER ANALYSIS

Quantity of water supplied (in gallons) to Saidapet area from the Infiltration gallery at Saidapet month war from 1947 to 1951 (Drought Years)

Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total Gallons
1947	3841200	3599400	4337200	4223500	4532100	4232500	4187600	4438700	4384300	4312100	4471800	4699500	51259900
1948	4716900	4669300	5346600	4791200	3782700	3452500	3263100	2272800	2606900	2666600	2979500	3142400	44290500
1949	3004700	2535300	2599400	2229600	2190300	2443400	3115000	3108300	2872600	2881100	2576200	2669400	32225300
1950	2659800	2354400	2476400	2072700	1851800	1596500	1454400	1411100	1848000	2355800	2300300	2074500	24455700
1951	1892500	1680000	1815000	1650000	1705000	1650000	1653800	1460000	1469800	1467500	1383800	1437600	19165000

TABLE XIX — Physico-Chemical and bacteriological conditions of the Infiltration Gallery at Saidapet — WATER ANALYSIS

	1951											
	Jan 3rd	Feb 20th	Mar 23rd	Apr 11th	May 25th	June 30th	July 31st	Aug	Sep	Oct	Nov	Dec
Physical Conditions												
Time												
Depth												
Temperature												
Transparency												
Colour	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C	C & C
Chemical Conditions												
Amm-Nitrogen	Nil	Nil	0·002	0·005	0·003	Nil	Nil	Nil	Nil	0·003	0 003	Nil
Alb-Nitrogen	Nil	Nil	0·002	0·005	0·004	0·002	Tr.	Nil	Tr.	0·002	0·002	Tr.
Nitrous-Nitrogen	M.T.	Nil	Nil	Tr.	Tr.	Tr.	M·T.	Tr.	Tr.	Tr.	Tr.	Tr.
Nitric-Nitrogen	Int.	Int.	Int.	Int.	Int.	Nil	Int.	Int.	Int.	Pr.	Pr.	Pr.
Oxygen absorbed	0·021	0·084	0·095	0·078	0·027	0·108	0·109	0·090	0·050	0·071	0·056	0·054
Alkalinity:— Penolpthalein	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	— 0·86	— 1·5	Nil	— 1·2
Alkalinity:— Methyl Orange	14·2	15·2	15·7	15·7	16·2	16·0	17·8	19·1	18·5	19·0	19·5	15·4
P.H.	7·1	7·2	7·2	7 0	7·2	8·1	8·0	7·3	7·4	7·5	7·4	7·0
Total Hardnes	35·0	19·3	25·4	23·9	45·0	41·0	35·0	40·2	35·7	...	...	24·5
Pero Hardnes	21·0	7·2	12·3	10·1	35·0	32·0	30·0	30·2	20·2	...	...	23·5
Total Solids	...	45·2	49·6	51·4	60·4	30·8	69·6	71·8	73·6	...	83·7	37·7
Chlorides	20·0	18·0	21·2	20·0	19·2	19·6	21·2	22·3	22·1	21·9	25·9	15·9
Bacteriological Conditions												
.fc Samples showing B. Coli in 5oc% Volumes	Nil	Nil	100 %	Nil	100%	100%	0%	...	...	...	...	...

TABLE XX WATER ANALYSIS

The quantity of water Supplied to Sembium area in the year 1947, 48, 49, 50, 51 (Drought years) from the infiltration Gallery well

Months	1947	1948	1949	1950	1951
January ...	1220115	1260500	1245000	1476000	1238000
February ...	1134000	1483135	1130000	1243000	1022500
March ...	1367625	1766615	1245000	1250000	1084000
April ...	1409375	1756645	1205000	1176000	1073000
May ...	1512865	1380740	1050000	1152000	9600000
June ...	1554000	1203000	905000	985000	809000
July ...	1511030	1240000	1346000	930000	651000
August ...	1570250	1240000	1364000	930000	635000
September ...	1669200	1201500	1326000	910000	865000
October ...	1784320	1248000	1435000	960000	965000
November ...	1685250	1205000	1359000	970000	905000
December ...	1630155	1240000	1446000	1268000	1017000

TABLE XXI.

WATER ANALYSIS

Physical-Chemical and bacteriologieal conditions of the Infiltration Gallery at Sembiam.

Date.	1951											
	Jan. 10th	Feb. 12th	March 20th	April 5th	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Physical Conditions.												
Time												
Depth												
Temp.												
Colour	SW & L	SW & H	SWH	SW & H	SY & O	SWO	SWO	SWO	SYO	...	SYO	SYO
Turbidity												
Chemical.												
Ammonical-Nitrogen	Nil	0·002	0·002	0·003	0·013	0·016	0·83	0·004	0·005	...	...	Trace.
Albuminoid-Nitrogen	Nil	0·003	0·004	0·005	Nil	0·002	0 002	Trace	Trace	...	...	0·010
Nitrocis Nitrogen	Nil	Nil	Nil	M.T.	M.T.	Nil	Nil	Nil	M.T.	...	Nil	M.T.
Nitric Nitrogen	Nil	Nil	Nil	M.T.	Nil	Nli	M.T.	Trace	M.T.	...	Nil	Tr.
Oxygen absorbed	0·019	0·013	0·063	0·078	0·052	0·066	0·067	0·066	0·048	...	0·005	0 083
P.H.	7·1	7·1	7·2	7·1	7·2	7·2	7·1	7·1	7·1	...	6·8	7·2
Alkalmity :— (a) Phenolphthatern ...	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0·96	...	Nil	Nil
Alkalmity :— (b) Methyl Orange.	10·3	10·4	11·5	9·4	13·4	14·6	13·8	13·9	11·0	...	11·6	7·7
Total Solids	42·0	44·0	30·4	...	56·0	59·2	57·5	51·5	43·8	...	...	31·4
Chlorids	14·5	14·8	15·6	15·6	17·4	21·3	18·6	17·7	13·9	...	15·2	7·2
Iron	...	...	...	...	0·18	0·16	0·16	0·07	0·047	...	...	3·068

Table XXII

Results of analysis of Samples collected before and afte

Serial No.	Place	Period	Length of pipe line Sterilised.	Total lbs. of chlorine injected.	Residual chlorine in p. p. m.		Before Sterilisation.					
					Average	Highest recorded.	Chemical Results expressed in Parts per 100,000					% of Samples where B. coli is absent in 60 c c
							Amoniacal Nitrogen	Albuminoid Nitrogen	Absorbed Oxygen	Iron.	Phosphate Highest recorded.	
1	Kilpauk Shaft.	5-8-51 to 23-8 51	½ Mile	300 lbs.	0·4	6·4	0·014	0·049	0 254	0·014	0·003	27%
2	Poonamallee High Road.	26-8-51 to 31-8-51	1/8 Mile	225 lbs.	0·5	3·0	0 016	0·045	0·261	0·009	Nil	33%
3	Dhobikhana Chetpet.	2-9-51 to 11-9-51	11/16 Mile	310 lbs.	0·3	1·0	0·014	0·059	0·237	0·006	0·006	50%
4	Nungambakkam High Road.	13-9-51 to 19-9-51	4/5 Mile	210 lbs.	1·5	3·0	0·011	0·056	0·244	0·003	0·002	100%
5	Gopathy Narayanaswami Chetty Road.	20-9-51 to 21-9-51	1-1/10 Mile	80 lbs.	17·8	30·1	0·004	0·071	0·267	0·001	Nil	100%
6	Boag Road	27-9-51 to 7-10-51	1 Mile	186½ lbs.	8·4	41·0	Not done	Not done	0·239	0·021	0·003	27%
7	Prakasam Road.	12-10-51 to 18-10-51	¾ Mile	273 lbs.	31·9	92·0	Not done	Not done	0·178	0·053	0·003	50%
8	Ramakrishna High School	22-10-51 to 2-11-51	¾ Mile	273 lbs.	31·9	92·0	Not done	Not done	0·178	0·058	0·003	50%
9	Venkata-Narayana Naidu Road.	4-11-51 to 13-11-51	1/10 Mile	100 lbs.	11·9	36·0	Not done	Not done	0·234	0·147	0·001	0%
10	Theagoroya Road.	15-11-51 to 31-11-51	4/5 Mile	335½ lbs.	Nil	Nil	0·001	0·052	0·209	0·326	0·001	Not done
11	Main No. 7 from Beekarapuram Railway Qrs. Vellala Teynampet Mount Road.	2-12-51 to 21-12-51	4 furlongs to 7/10 Mile	333·25 lbs.	2·9 p. p. m.	23·0	Trace	0·030	0·190	0·007	0·002	72%
12	Main No. 7 the section from Ry. officers quarters Govt. Bakery	23-12-51 to 7-1-52	3 furlongs to 5 furlongs	219 lbs.	5·2	22·0	0·001	0·026	0.153	0·016	0·004	50%
13	Cahet Iral Road.	8-1-52 to 11-1-52 & 20-2-52 to 31-3-52	4 furlongs	886·5 lbs.	No Samples could be collected for testing the Ch2 residual							

Sterilisation of water mains from August '51 to March '52.

After Sterilisation.								
Chemical results Expressed in Parts per 100,000.								
Ammoniacal Nitrogen.	Albuminoid Nitrogen.	Absorbed Oxygen.	Iron.	Phosphate Highest recorded.	% of samples where B.Coli is present in 60 c.c.	% of increase or decrease in the Ammoniacal nitrogen content of the water collected after Sterilisation over that collected before Sterilisation.	% of increase or decrease in the Albuminoid nitrogen content of the water collected after Sterilisation over that collected before sterilisation.	% of increase or decrease in the Iron content of the water collected after Sterilisation over that collected before Sterilisation.
0·011	0·052	0·254	0·013	0·002	91%	—21%	+ 6%	— 7%
0.013	0·047	0·252	0·013	0·001	83%	—19%	+ 5%	+ 44%
0·018	0·058	0·231	0·012	0·015	69%	+29%	— 2%	+100%
0·004	0·053	0·210	0·007	0·015	100%	—64%	— 5%	+134%
0·005	0·062	0·224	0·028	0·006	100%	+25%	+13%	28 fold increase
not done		0·243	0·379	0·006	82%	...	...	18 fold increase
not done		0·154	0·115	0·002	94%	...	...	+ 54%
not done		0·154	0·115	0·002	94%	...	...	+ 54%
not done		0·190	0·168	0·002	100%	...	...	+ 14%
0·001	0·042	0·191	0·050	0·002	Not done	Nil	—20%	— 5.5%
Trace	0·029	0·182	0·009	0·002	88%	...	—3·3%	+28·6%
0·001	0·030	0·168	0·013	0·003	72%	...	+15·4%	—18·8%

No Samples could be collected as there were no taps & fire hydrants on the main since it feeds the booster areas (it is 20" main)

TABLE XXIII

Infiltration Gallery System—Sembium and Saidapet Distribution Systems—
Results of Bacteriological Examination 1951—52.

1951-52	Sembium distribution System								Saidapet distribution System							
Month	No. of Samples	Coliform organisms present in							No. of Samples	Coliform organisms present in						
		—60 c. .c	+60 c. c.	+20 c. c.	+10 c. c.	+5 c. c.	+1 c. c.	+0·1 c. c.		—60 c. c.	+50 c. c.	+20 c. c.	+10 c. c.	+5 c. c.	+1 c. c.	+0·1 c. c.
January '51	20	100%	Nil	Nil	Nil	Nil	Nil	...	20	100%	Nil	Nil	Nil	Nil	Nil	...
February „	20	100%	Nil	Nil	Nil	Nil	Nil	...	20	75%	15%	10%	Nil	Nil	Nil	...
March „	20	80%	15%	5%	Nil	Nil	Nil	...	20	75%	20%	5%	Nil	Nil	Nil	...
April „	10	70%	30%	Nil	Nil	Nil	Nil	...	10	40%	40%	20%	Nil	Nil	Nil	...
May „	Nil	...	...	...	...	...	...	...	5	Nil	Nil	Nil	Nil	Nil	100%	...
June „	Nil	...	...	...	...	...	...	...	10	70%	Nil	Nil	Nil	Nil	30%	...
July „	10	80%	20%	Nil	Nil	Nil	Nil	...	10	30%	Nil	Nil	Nil	10%	60%	...
	Samples from August '51 to March '52 were not taken.															

Table No. XXIV

WATER ANALYSIS

Showing the quantity of water Supplied to Saidapet area from the Richard's Park well at Saidapet month war for 1950 & 51 (Drought years)

16—h

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total Gallons
1950	...	...	...	10340	141620	221740	206990	224260	197540	279440	239290	354630	1875850
1951	284880	208170	244050	253440	249000	238000	227000	227000	242400	240470	233160	244740	2892310

Infiltration Gallerey System—Results of Chemical Examination.

Expressed in parts per 100,000 (1951-52.)

Months.	Sembium Distribution System.											Saidapet Distribution System.										
	Number of Samples.	Smell.	Ammoniecal nitrogen.	Albuminoid nitrogen.	Nitrous nitrogen.	Nitric nitrogen.	Chlorides.	Oxygen absorbed.	P.H.	Total Hardness.	Total Solids.	Number of Samples.	Smell.	Ammoniecal Nitrogen.	Albuminoid Nitrogen.	Nitrous Nitrogen.	Nitric Nitrogen.	Chlorides	Oxygen Absorbed.	P.H.	Total Hardness.	Total Solids.
January 51	20	Nil	Nil	Nil	Trace	Nil	14·5	0·014	7·3	...	42·5	20	Nil	Nil	Nil	Trace	Int.	20·0	0·015	7·6	...	44·6
February „	20	Nil	Nil	0·002	Nil	Nil	14·8	0·013	7·3	...	51·7	20	Nil	Nil	Nil	Nil	Int.	18·0	0·064	7·9	...	63·0
March „	20	Nil	0·002	0·003	Nil	Nil	15·6	0·055	8·5	17·7	53·8	20	Nil	0·002	0·002	Nil	Int.	21·2	0·100	7·6	20·9	76·0
April „	10	Nil	Nil	0·002	Nil	Nil	15·6	0·068	7·9	18·5	59·6	10	Nil	Nil	Nil	Mt	Int.	20·0	0·072	7·6	20.8	90·4
May „				No Samples could be taken.								5	Nil	0·002	0·002	Mtr	Present.	19·2	0·042	8·0	45·0	85·1
June „						Do.						10	Nil	Nil	Nil	Trace	Present.	19·6	0·060	8·1	42·0	87·6
July „	10	Nil	Nil	Nil	Nil	Nil	18·6	0·057	8·0	42·2	64·3	10	Nil	Nil	Nil	Trace	Int.	21·2	0·075	8·1	38·0	38·0
August „			No samples could be taken from August 1951 to March 1952.												No Samples could be taken from August 1951 to March 1952							
September „																						

Physical, Chemical and Bacteriological Conditions of Surface Well Water at Richard's Park, Saidapet

Date	Feb 20th	Mar 26th	April 4th	May 12th	June 12th	July	Aug	Sep	Oct	Nov	Dec
Physical Condition											
Colour	C & C	C & C	C & C	C & C	C & C	...	C & C	...	...	...	...
Chemical Conditions.											
Ammonical Nitrogen	Nil	0 002	0·002	Nil	Nil	...	0·014	...	...	...	...
Albuminoid „	Nil	0·028	0·002	0·002	0·004	...	Trace	...	...	...	...
Nitrous „	Nil	V. Int	Tr	M.T.	Int	...	Int	...	...	...	...
Nitric „	Int	do	Int	V. Int	Int	...	Int	...	...	...	...
Oxygen absorbed	0·196	0·152	0·126	0·122	0·157	...	...	...	...	...	...
P. H.	8·3	7·9	7·9	8·0	8·0	...	8·1	...	...	...	...
Alkalinity to { Phenolphthalein... ...	2·4	0·8	Nil	Nil	Nil	...	Nil	...	...	...	...
Alkalinity to { Methyl orange	28·8	32·2	32·6	34·0	34·2	...	36·0	...	...	...	...
Total Solids	140·0	131·2	140·0	142·0	133·6	...	137·2	...	...	...	...
Chlorides	39·6	37·6	35·2	35·6	36·0	...	33·2	...	...	...	...
Bacteriological Conditions.											
B. Coli in 5 cc (%)	Nil	Nil	Nil	Nil	Nil	...	0	...	...	...	...

TABLE XXVII

WATER ANALYSIS

Showing the results of chemical and Bacteriological analysis of well waters used as sources of Emergency water supplies in 1951

Serial No.	Date	Location of Wells	Chemical results expressed in parts per 100, 100							
			Total solis	Total hardness	Chloride	Iron	Nitrite	Nitrate	Bcoli Present in ? cc	Remarks
1	10—1	Well at No. 56, Lloyds Road ...	132.0	65.2	25·0	nil	MT	Int	+ 1 cc	Unsatisfactory
2	3—2	Well at No. 30, Neelakanta Metha Street, Theagaroyanagar ...	70.0	28·6	18·0	Pr	nil	Tr	+ 1 cc	Satisfactory
3	13—2	Well for Royal Swimming Pool ...	49·6	16·9	14·0	Tr	Tr	nil	+ 1 cc	,,
4	26—3	Mayer's Pump at 16, Office Venkata chala Mudaly Street, Triplicane ...	50.0	23.1	8.0	nil	Int	Int	+ 60 cc	,,
5	26—3	Well at Lake View Road, Mambalam	122·8	...	40 0	...	Pr	Pr	+ 0·1 cc	Unsatisfactory
6	4—4	Well water from Masthanpet in Saidapet ...	48·4	13·9	11·2	Pr	Tr	nil	...	Satisfactory
7	4—4	Well water from District Board Office, Saidapet ...	143 4	29·3	30·4	nil	MT	Int	+ 60 cc	,,
8	28—4	Well from Govt· Vigilence Home (Mylapore not in use)	128.0	...	29·2	nil	nil	Pr	+ 0.1 cc	Unsatisfactory
9	28—4	,, ,, in use	89.2	...	16·4	nil	Int	Int	+ 0.1 cc	Satisfactory

10	18—4	Well from Supdt. H. Depot, Kodambakkam ...	329·6	34·6	36·0	MT	Int	Int	...	Unsatisfactory
11	25—5	Well from Corporation High School, Saidapet ...	55·6	...	10·8	0·05 ppm	Int	Tr	—60 cc	Satisfactory
12	4—5	„ „ (new well) ...	55.6	...	8·8	MT	Tr	Tr	+ 1 cc	„
13	30—6	Well at Palani Andavar Koil Street, Kodambakkam ...	100·4	47·0	32.0	0·75	Int	nil	+ 1 cc	Lime Treatment suggested
14	30—6	Well at Dhobikhana, Corn Smith Nagar	189·6	65·0	36·0	Pr	V·Int	Int	+ 1 cc	Unsatisfactory
15	14—6	Well water from Registrar University, Buildings ...	114·0	50·0	42·0	0·18	MT	nil	...	„
16	27—8	Well at Surya Narayana Chetty Street	87·2	44·0	15·6	...	V. Int	Int	...	Satisfactory
17	28—7	Well in Guruswamy Gramani Thottam Sembiam ...	1114·8	350·0	840·0	0·015	V. Int	MT	...	Unsatisfactory
18	20—7	Well Sample from Shivis Residence ...	96·4	48·0	20·0	0·11	V. Int	Int	+ 5 cc	Lime Treatment Suggested
19	3—8	Well at Parankushapuram, Kodampakkam ..	137·2	45·0	52·0	0·75	Pr	MT	+ 1 cc	„
20	3—8	Well at Scavenger Colony, Kannamapet	176.0	54·0	39·0	0·170	Int	Tr	+ 1 cc	„
21	24—8	Well at Ramakrishna Students Home, Mylapore ...	295·6	75·0	90.0	nil	Tr	Int	...	Unsatisfactory
22	13—8	Well at Sanker Cafe 97, T. H. Road ...	95·6	44·0	21·6	0·003	V. Int	V. Int	+ 1 cc	Chlorination suggested
23	13—8	Well at Rajeswari Cafe, 512, T. H. Road	71·2	39.0	16·8	0·010	V. Int	V. Int	+ 1 cc	„
24	13—8	Well at Shunmuga Vilas, 124, T. H. Road ...	59·6	38·0	13·2	0·004	V. Int	V. Int	+ 1 cc	„

TABLE XXVI—contd,

Serial No.	Date	Location of Wells	Chemical results expressed in Parts per 1,00,100							
			Total Solids	Total hardness	Chlorids	Iron	Nitrite	Nitrate	B. coli present in ? cc	Remarks
25	3—9	Well at Govt. Automobals Work Shop ...	110·0	45·0	14·8	0·060	Pr	Pr	+ 1 cc	Chlorination suggested
26	13—10	Bore Well west of Addison's Paint Co. Sembiam ...	34·8	9·0	1.9	0.010	Pr	Tr	+ 5 cc	„
27	12—11	Well at R. C. Church, Luz Church Road, Mylapore ...	173·2	55·0	35·6	0.(01	MT	Tr	+ 1 cc	„
28	19—11	Well at Luthers Confectionary 60, Chinnathambi Street ..	91·6	25·0	13·2	nil	Tr	Tr	...	„
29	20—11	Well at Cherian Nagar, T. H. Road ...	116·06	23·3	16·0	nil	Tr	Int	...	„
30	30—11	Well at Srinivasa Perumal Sannathy Street ...	61·2	18·0	10·4	0·065	Pr	Pr	+ 1 cc	Lime treatment and chlorination suggested
31	26—11	Bore well at Anjuman Buildings ...	154·4	16·0	60·4	0.150	nil	Tr	...	„
32	4—12	Udipi Cafe, Broadway ...	193·6	45·0	62.0	0.35	Pr	MT	—60 cc	Un-Satisfactory
33	11—12	Sample of well water (filtered) before entring in to a quafine filter ...	58·0	23·0	11·6	0.01	nil	Int	—60 cc	Satisfactory
34	11—12	Sample of filter water after passing thro the aqua fine filter ...	58·8	22·0	11·6	0.001	nil	Int	+ 20 cc	„
35	24—12	Well at Damodarapuram. Adyar ..	35·2	13·0	4·0	0.015	MT	Int	+ 1 cc	„
36	24—12	Well at 10, Sivagana Road, Nungambakam ...	90·4	30·0	10·8	0.006	MT	Pr	+ 1 cc	„
37	24—12	Well at 15 clemens Road, Purasawalkam	157·2	4·0	40.0	0.015	MT	nil	— 60 cc	„ Chlorination suggested
38	24—12	Well at 3, Ramanatha Chettiar Road, Alagappa Nagar, Kilpauk ...	28·8	12·0	4·4	nil	MT	pr	+ 1 cc	„

CHILD WELFARE Statement No. I

Showing cases of Labour which came under the observation of Child Welfare Scheme in 1951.

No.	Centre.	How conducted.					Caste.		Remarks.	
		By Nurses of C.W.S.	Taken to Hospital.	Taken over after Barber Women conducted.	Maternity ward.	Total.	Non-Muslim.	Muslim.	Twins.	Still Births.
1	Tondiarpet ...	158	47	41	934	1180	1147	33	1?	27
2	Royapuram ...	493	29	23	...	545	.98	147	4	17
3	Palmyrah Kuppam ...	327	59	7	..	393	318	75	3	17
4	Washermanpet ...	930	58	16	1290	2294	1753	541	21	74
5	Sanjiviroyenpet...	463	49	22	846	1380	1328	52	9	31
6	George Town ...	392	48	4	711	1155	1046	109	10	24
7	Muthialpet ...	781	27	24	...	832	648	184	6	31
8	Kothwal Bazaar.	331	38	2	358	729	531	198	6	25
9	Treveleyen Basin.	670	70	37	761	1538	1531	7	10	37
10	Park Town ...	298	22	14	...	234	329	5	2	11
11	Maternity Home, Choolai ...	653	223	18	1?09	2103	2072	31	14	45
12	Sembiam ...	634	93	39	569	1335	1257	78	17	55
13	North Perambur.	528	68	60	610	1266	1111	155	10	44
14	Pulianthope ...	877	101	61	759	1798	1440	358	15	42
15	Purasawalkam ...	731	58	57	640	1486	1439	47	17	22
16	Kilpauk ...	190	62	32	368	652	624	28	7	25
17	Chetpet ...	281	48	22	512	863	842	21	10	37
18	Egmore ...	644	44	24	...	712	541	171	7	8
19	Saidapet ...	255	146	154	1093	1648	1607	41	7	37
20	Periamet ...	298	47	1	321	667	611	56	5	10
21	Triplicane ...	866	56	34	740	1696	1030	666	14	44
22	Mirsahibpet	779	14	19	..	812	470	342	5	13
23	Mylapore ...	777	15	13	...	805	698	107	8	26
24	Royapetah ...	552	24	2	...	578	477	101	3	15
25	Mandavalli ...	572	13	5	...	590	586	4	8	17
26	Adyar ...	161	28	18	331	538	533	5	3	18
27	Teynampet ...	488	15	8	...	511	498	13	6	19
28	Thyagaraya Nagar ...	365	14	2	...	381	378	3	3	11
29	Kodambakam ...	312	38	22	...	372	364	8	3	8
30	Ayanavaram ...	619	67	52	...	738	711	27	4	19
	Total ...	15425	1621	833	12052	29931	26318	3613	249	809

CHILD WELFARE — Statement No. II

Showing the number of visits paid by the Staff of Child Welfare Scheme in 1951.

No.	Centre.	Visits paid by			Total.
		Midwives.	Health Visitors.	Lady Doctors.	
1	Tondiarpet	6842	3443	1313	11598
2	Royapuram	6022	5215	1020	12257
3	Palmyrah Kuppam ...	4837	3081	1220	9138
4	Washermanpet ...	18066	10552	1816	30434
5	Sanjiviroyanpet ...	9320	5207	1551	16078
6	George Town ...	13685	4475	1192	19352
7	Muthialpet	9987	4236	1209	15432
8	Kothwal Bazaar ...	4989	5039	851	10879
9	Treveleyen Basin	11735	6126	1115	18976
10	Park Town	3778	2443	1092	7313
11	Maternity Home Choolai	12970	5924	1009	19903
12	Sembiam	10077	4142	1051	15270
13	North Perambur ...	8950	2744	820	12514
14	Pulianthope	12478	4292	1096	17866
15	Purasawalkam ...	13375	3928	1172	18475
16	Kilpauk	4463	3020	1289	8772
17	Chetpet	5695	3665	1447	10807
18	Egmore	8275	3676	1254	13205
19	Saidapet ...	10040	5273	1256	16569
20	Periamet	5223	2139	799	8161
21	Triplicane	14237	7446	1194	22877
22	Mirsahibpet	9080	8204	1246	18530
23	Mylapore	7922	4472	1065	13459
24	Royapetah	6501	2622	967	10090
25	Mandavalli	8057	3879	1186	13122
26	Adyar	5419	2250	1059	8728
27	Teynampet	5470	1950	101	7521
28	Thyagaroya Nagar ...	3210	1369	135	4714
29	Kodambakam ...	7380	673	....	8053
30	Ayanavaram ...	3447	262	209	3918
	Total ...	251530	121747	30734	404011

CHILD WELFARE Statement No. III

Showing the No. of Pre-natal cases registered and the No. of booked cases conducted in 1951

No.	Centre	No. of Prenatal cases registered by Health Visitors	No. of booked cases which attended the Ante-natal clinic	Cases not confined but brought over to account in the next year
1	Tondiarpet ...	1395	1294	148
2	Royapuram ...	1211	1205	160
3	Palmyrahkuppam ...	811	754	111
4	Washermanpet ...	3011	2955	282
5	Sanjiviroyanpet ...	1486	1474	167
6	George Town ...	1483	1483	114
7	Muthialpet ...	1298	1223	159
8	Kothwal Bazaar ...	1018	994	125
9	Treveleyen Basin ...	2033	2024	223
10	Park Town ...	614	614	117
11	Maternity Home, Choolai ...	2405	2389	265
12	Sembiam ...	1630	1558	125
13	North Perambur ...	1504	1503	135
14	Pulianthope ...	2190	2178	100
15	Purasawalkam ...	2086	2069	100
16	Kilpauk ...	899	892	134
17	Chetpet	1157	1141	73
18	Egmore ...	1366	1355	80
19	Saidapet ...	2211	2202	208
20	Periamet ...	909	904	98
21	Triplicane ...	2384	2347	200
22	Mirsahibpet ...	1508	1507	163
23	Mylapore ...	1388	1372	158
24	Royapetah ...	1019	1014	118
25	Mandavalli ...	997	984	109
26	Adyar ...	607	604	51
27	Teynampet ...	742	731	79
28	Thyagaroyanagar ...	470	463	64
29	Kodambakam ...	376	376	40
30	Ayanavaram ...	1036	1030	50
		41174	40639	3951

CHILD WELFARE — Showing Pre-natal cases registered and ailments of Pregnancy diagnosed and patients advised in 1951 — STATEMENT No. IV

Serial No.	Centre	Cardio-Vascular diseases			Respiratory diseases				Alimentary Tract diseases				Diseases of urinary Tract			Toxaemia of Pregnancy			Defficiency deseases			Pyrexias			Debility	Specific diseases			Other deseases & abnormalities of Pregnancy					Normal	Other diseases	Total
		Valvular diseases of the Heart (V.D.H.)	Hyper tension	Vericose Veins	Bronchitis	Pneumonia	Pulmonary Tuberculosis	Asthama	Constipation	Dyspepsia	Diarrhoea	Dysentery	Scanty Micturition & Retention of urine	Albuminuria	Pyelitis	Pre-eclamptic Toxaemia	Eclampsia	Accute Yellow atrophy of the liver (Jaundice)	General Anasarca	Calcuim difficiency	Vitamin difficiency	Other Nutritional difficiency	Influenza]	Malaria	Rheumatism	General debility (Emaciation)	Skin diseases	Ear Nose, Throat	V. D. Syplis Gonorrhea	Leucorrhoea	Morning Sickness	Anaemia	Hydraminos	Antepartum Haemorrhage	Breast abscess			
1	Tondiarpet	2	6	...	16	...	4	3	...	...	4	12	...	17	...	17	...	...	...	...	35	...	17	...	...	70	4	...	...	1	...	70	...	1	1	954	60	1294
2	Royapuram	2	...	...	55	...	1	8	69	27	39	6	42	6	...	15	...	...	...	16	179	...	11	2	...	63	5	...	7	4	...	261	...	1	...	263	123	1205
3	Palmyrah kuppam	1	...	...	12	...	...	...	14	10	...	16	...	35	...	9	...	...	...	10	72	...	38	...	...	28	6	...	1	...	...	266	...	...	...	173	63	754
4	Washermanpet	...	...	...	181	...	...	...	191	62	42	35	207	12	...	5	...	...	...	11	1767	...	46	49	16	53	8	...	...	...	...	95	...	...	...	166	9	2955
5	Sanjiviroyanpet	2	8	...	47	...	...	3	158	16	19	8	20	15	...	10	...	...	25	...	114	...	29	...	...	9	...	...	...	9	...	316	...	...	...	471	195	1474
6	George Town	13	...	...	48	...	10	24	197	15	109	68	72	35	...	35	...	...	...	...	189	...	107	54	4	68	71	6	5	31	8	94	...	7	6	154	53	1483
7	Muthialpet	...	...	...	21	...	1	...	...	...	9	3	...	15	...	...	...	...	...	25	22	...	15	2	...	15	3	...	1	...	...	100	...	...	...	957	28	1223
8	Kothawal Bazaar	11	...	...	32	...	...	4	...	294	9	24	...	31	...	17	...	...	...	...	...	...	34	...	...	127	...	...	...	9	...	138	...	...	...	264	...	994
9	Treveleyan Basin	...	...	...	37	...	...	3	153	142	20	47	113	12	...	1	...	...	5	...	169	...	6	...	...	66	12	...	...	...	...	60	...	...	...	604	574	2024
10	Park Town	...	...	...	26	...	...	7	196	21	6	10	32	7	...	...	...	...	...	...	31	...	18	15	...	15	20	...	...	...	16	26	...	...	...	73	95	614
11	Maternity Home, Choolai	17	...	...	128	...	...	13	...	39	35	37	...	47	...	3	...	...	25	...	165	...	39	18	2	64	36	1	2	4	1	136	...	...	1	1284	292	2389
12	Sembiam	...	...	...	112	...	...	...	...	21	38	46	71	...	...	...	...	...	...	...	52	...	...	...	...	2	...	...	...	...	...	64	...	...	...	860	292	1558
13	North Perambur	4	...	...	6	...	...	4	157	12	19	2	64	5	...	25	...	...	...	...	37	...	2	...	...	24	...	...	...	...	...	45	...	...	1	790	306	1503
14	Pulianthope	4	...	...	79	...	...	10	255	160	12	8	127	...	...	6	...	...	...	...	58	...	3	1	...	114	...	...	...	13	...	150	...	...	2	805	371	2178
15	Purasawalkam	...	...	...	30	...	...	1	...	897	3	10	...	4	...	332	...	...	...	...	43	...	...	...	...	...	...	...	...	...	...	22	...	...	...	439	288	2069
16	Kilpauk	...	...	...	35	...	...	...	85	19	18	5	80	9	...	19	...	...	46	...	24	...	3	3	...	29	8	...	1	118	...	77	...	...	...	219	193	892
17	Chetpet	1	...	...	34	1	2	...	202	158	4	5	87	14	...	...	1	...	4	...	35	...	17	...	...	39	8	...	2	2	...	93	...	...	...	282	150	1141
18	Egmore	...	...	...	46	...	...	...	...	38	31	22	...	26	...	12	...	...	5	...	218	...	15	...	16	163	5	...	...	2	...	121	...	...	...	319	194	1355
19	Saidapet	3	...	...	9	...	2	4	...	45	22	15	...	...	...	31	...	...	...	...	117	...	20	2	...	45	8	2	5	7	...	177	...	4	1	1400	...	2202
20	Periamet	...	...	...	40	...	5	2	100	55	5	5	52	...	...	24	...	...	...	1	23	...	14	1	10	37	1	...	1	2	...	60	...	2	...	379	85	904
21	Triplicane	1	...	...	96	...	1	...	...	112	2	11	...	...	...	5	...	...	6	...	286	...	52	...	...	215	36	...	...	1	...	278	...	1	...	1135	109	2347
22	Mirsahibpet	...	...	...	57	...	...	...	...	275	...	6	25	...	...	...	...	...	...	...	151	...	20	...	...	...	...	...	...	...	...	118	...	...	...	653	202	1507
23	Mylapore	6	...	...	81	...	...	...	...	412	...	10	148	...	...	2	...	...	...	...	91	...	13	...	...	...	1	...	2	...	...	79	...	...	...	328	198	1372
24	Royapetah	3	...	...	21	...	1	5	221	...	...	7	93	...	...	...	...	...	...	...	99	...	15	...	...	20	5	...	...	3	...	51	...	...	...	327	143	1014
25	Mandavalli	...	...	1	11	...	1	2	81	35	2	3	87	2	...	11	2	...	3	...	59	...	14	...	...	149	3	2	1	2	...	80	...	...	...	248	185	984
26	Adyar	9	...	...	9	...	...	...	...	98	...	1	...	...	15	14	...	...	...	...	126	...	36	...	...	1	1	...	...	...	...	83	...	...	...	179	32	604
27	Teynampet	...	...	...	73	...	...	1	130	...	1	6	...	...	...	27	...	...	...	...	59	...	4	...	...	15	2	...	...	2	...	25	...	...	...	264	122	731
28	Theyagaroyanagar	...	...	...	22	...	...	...	93	...	2	3	...	...	...	12	...	...	...	...	30	...	...	...	...	8	3	...	...	...	...	11	...	...	...	240	39	463
29	Kodambakam	2	...	...	3	...	...	1	...	6	32	3	...	...	...	55	...	...	...	...	21	...	3	...	...	11	...	...	...	1	...	30	...	1	...	207	...	376
30	Ayanavaram	...	...	...	38	...	...	...	...	38	58	40	69	60	...	...	...	...	...	...	59	...	59	...	...	63	...	...	...	15	...	61	...	...	...	407	63	1030
		81	14	1	1405	1	28	95	2302	3007	541	480	1389	352	15	970	3	...	135	47	4331	...	650	147	48	1513	246	11	28	110	43	3187	...	17	12	14844	4464	40639

STATEMENT No. V

Showing Maternal Morbidity (Puerperal) in 1951

Serial No.	Centres	Normal Pregnancy: Respiratory diseases: Bronichitis	Pneumonias	Pulmonary Tuber-culosis	Other diseases: Asthama	Extreme Debility	Venereal diseases	Heart diseases	Pyrexias	Infectious diseases	Skin diseases	Deficiency diseases	Gastro-Intestinal disorders	Diseases of Pregnancy: Pre Eclampsia	Eclampsia	Hyperemesis	Accute Yellow atrophy of the Liver (Jaundice)	Antepartum complications (before delivery): Accidental Haemorrhage	Placenta Praevia	Anaemia	Abnormal Presentation	Hydatidiform mole	Ectopic Gestation	Placenta Praevia	Retained Placenta	Intra & Post partum Complications: Post PartumHaemorrhage	Anatomical abnormality contracted pelvis	Malposition & Disproportion	Tedious Labour delayed 2nd Stage	Perineal & cervical Lacerations	Urinary Complications	Complications during puerperium: Puerperal Sepsis	Phlebitis, Thrombosis	Pyrexias	Uterine disorders	Puerperal Toxaemias	Anaemia	Psychosis	Disorders of Location	Other diseases	Total
1	Tondiarpet	...	...	...	...	15	...	...	...	...	...	...	33	...	...	...	...	...	...	2	...	...	...	...	...	3	...	...	...	34	...	...	...	25	...	...	...	...	...	112
2	Royapuram	...	8	...	...	10	...	1	8	...	...	...	14	5	...	...	...	...	...	26	...	...	...	...	...	6	...	...	...	22	...	2	...	20	...	...	...	9	2	133
3	Palmyrahkuppam	..	4	...	...	10	...	2	2	...	...	4	1	...	...	...	...	...	...	65	...	...	...	...	...	4	...	...	...	19	...	...	...	8	11	...	...	...	10	140
4	Washermanpet	...	...	...	3	11	7	...	6	...	...	...	33	...	8	...	...	...	...	13	...	...	...	...	2	18	...	...	...	42	...	...	...	32	38	...	20	...	...	233
5	Sanjiviroyanpet	..	32	3	...	1	55	...	1	43	...	22	...	148	34	6	...	...	12	113	...	...	...	...	...	21	...	...	...	77	10	12	...	39	...	...	...	2	63	694
6	George Town	...	30	16	9	14	38	...	10	93	20	25	22	177	52	7	...	...	10	46	...	...	...	...	9	19	...	...	...	93	40	...	...	58	33	...	...	2	...	823
7	Muthialpet	...	12	...	2	...	15	...	1	...	...	...	...	13	7	2	...	...	...	26	...	...	...	...	...	2	...	...	...	8	...	...	...	...	20	...	...	8	15	131
8	Kothawal Bazaar	...	...	...	3	...	...	...	...	14	...	2	...	2	2	2	...	...	2	10	...	...	...	...	...	12	...	...	...	37	...	...	...	70	11	...	...	3	22	197
9	Treveleyen Basin	..	...	...	2	1	63	2	6	69	...	...	37	177	17	3	...	...	...	1	...	...	...	...	...	10	...	...	...	27	...	...	...	35	49	...	...	1	62	562
10	Park Town	...	18	...	...	2	3	...	...	12	...	...	21	38	5	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	...	...	...	15	136
11	Maternity Home, Choolai	...	48	...	6	14	38	...	...	74	...	20	32	125	44	14	...	...	...	47	...	...	...	...	9	33	...	...	...	73	7	34	...	...	99	...	...	9	74	800
12	Sembiam	...	51	...	...	...	42	...	...	13	...	8	53	96	...	9	...	...	...	59	...	...	...	...	...	7	...	...	...	17	23	...	...	59	41	...	...	7	21	506
13	North Perambur	...	7	...	...	...	8	1	5	...	...	...	4	44	...	1	...	...	2	23	...	...	...	...	1	3	...	...	...	21	2	4	...	17	25	...	...	...	...	168
14	Pulianthope		16	...	...	...	31	...	1	18	...	...	9	68	28	5	...	...	...	24	...	...	...	...	2	...	...	...	...	26	30	...	...	27	11	...	...	30	326
15	Purasawalkam	...	11	...	1	1	...	...	...	10	1	4	8	30	12	1	...	...	3	11	...	...	...	...	...	5	...	...	...	39	...	...	...	21	22	...	...	4	9	193
16	Kilpauk	..	15	...	...	...	16	...	...	2	...	2	20	41	2	...	...	...	...	26	...	...	...	...	...	2	...	...	...	9	...	...	...	...	15	...	...	...	4	154
17	Chetpet	...	9	1	2	1	18	2	2	6	...	4	17	25	13	3	...	...	1	12	...	...	...	...	1	2	...	...	...	29	23	1	...	21	16	...	...	...	1	210
18	Egmore	...	4	5	...	...	16	...	5	2	...	3	8	16	11	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	84
19	Saidapet	...	...	...	1	...	...	...	2	18	...	5	6	6	9	3	...	...	...	19	...	...	...	...	6	5	...	...	...	38	6	9	...	9	14	...	2	30	188
20	Periamet	...	25	...	...	2	31	...	2	15	...	4	26	82	3	1	...	...	...	50	...	...	...	...	5	...	...	...	...	5	...	...	...	31	...	...	7	49	338
21	Triplicane	...	2	...	...	1	40	...	...	62	...	...	13	40	1	...	...	...	1	55	...	...	...	...	1	2	...	...	...	2	...	...	...	23	33	...	4	17	309
22	Mirsahebpet	...	...	...	...	...	...	...	...	...	...	...	42	...	...	...	...	...	...	54	...	...	...	...	4	2	...	...	...	25	...	...	...	20	11	...	1	...	159
23	Mylapore	...	...	...	...	...	...	...	...	...	...	11	22	61	...	...	...	...	...	35	...	...	...	...	...	...	...	...	...	33	2	...	...	59	6	...	1	115	345
24	Royapettah	..	49	...	...	1	46	...	...	...	...	15	51	61	18	...	...	...	1	34	...	...	...	...	...	...	...	...	...	10	48	...	...	11	59	...	14	6	424
25	Mandavalli	...	5	...	...	...	36	...	...	2	...	1	21	73	6	...	...	...	...	38	...	...	...	...	1	13	...	...	...	8	13	...	...	28	25	...	1	5	278
26	Adyar	...	5	...	...	...	...	...	...	34	...	15	67	41	...	...	...	...	...	53	...	...	...	...	...	3	...	...	...	22	...	41	...	13	13	...	2	1	297
27	Teynampet	...	12	...	...	...	58	...	...	1	...	6	24	87	7	...	...	...	...	55	...	...	...	...	...	...	...	...	...	3	44	...	...	9	98	...	...	...	...	404
28	Thyagaroyanagar	...	2	...	...	2	24	...	...	...	...	5	10	87	3	...	...	...	2	34	...	...	...	...	...	5	...	...	...	...	43	...	...	4	45	...	...	20	278
29	Kodambakkam	...	...	...	...	1	...	...	...	...	...	2	...	6	4	...	...	...	...	4	...	...	...	...	...	...	...	...	...	6	1	...	...	4	8	...	...	1	44
30	Ayanavaram	...	15	...	...	...	...	...	...	40	...	6	5	83	15	...	...	...	...	45	...	...	...	...	...	...	...	...	...	...	30	...	...	35	25	...	...	...	...	301
		380	25	29	40	624	12	38	544	21	160	48	0	1759	298	70	...	...	32	987	...	...	...	...	44	186	...	...	...	725	322	103	...	691	728	...	...	97	572	8976

CHILD WELFARE STATEMENT No. VI-A

Showing deaths among cases came under the treatment of Child Welfare Scheme and others in 1951

No.	Centre	Deaths among cases brought under care of C.W.S. but not under treatment			Deaths among cases brought under care and treatment of C.W.S.	Total.
		Under Private Doctor	Under Vidiyans treatment.	In Hospital.		
1	Tondiarpet ...	...	...	2	...	2
2	Royapuram ...	...	...	...	1	1
3	Palmyrah Kuppam ...	...	...	...	...	...
4	Washermenpet ...	1	...	4	...	5
5	Sanjeevirayanpet ...	...	...	2	...	2
6	George Town ...	...	...	2	1	3
7	Muthialpet	...	...	1	1	2
8	Kothwal Bazaar ...	2	...	1	...	3
9	Treveleyen Basin ..	...	...	7	...	7
10	Park Town ..	...	...	...	...	...
11	Maternity Home, Choolai.	...	...	3	1	4
12	Sembiam ...	...	...	1	...	1
13	North Perambur ...	...	...	3	1	4
14	Pulianthope ...	...	...	7	...	7
15	Purasawalkam ...	...	...	2	...	2
16	Kilpauk ...	...	...	1	...	1
17	Chetpet ...	...	...	2	...	2
18	Egmore ...	1	...	2	...	3
19	Saidapet ..	...	...	3	...	3
20	Periamet ...	...	...	...	...	...
21	Triplicane .	...	...	2	...	2
22	Mirsahibpet ...	...	...	...	...	...
23	Mylapore ...	...	...	...	...	...
24	Royapetah ..	...	...	...	...	...
25	Mandavalli ...	...	...	...	...	...
26	Adyar	...	...	...	...	...
27	Teynampet ...	...	...	...	...	...
28	Thyagaraya Nagar ...	...	...	1	...	1
29	Kodambakam ...	...	...	...	...	...
30	Ayanavaram ...	...	...	2	...	2
	Total ...	4		48	5	57

(52 + 5 = 57)

CHILD WELFARE

STATEMENT No. VI B.

Showing the causes of death among cases brought to the notice of Child Welfare Scheme in 1951 (Vide Statement No. VI A)

No.	Centre	Cardio Vascular diseases of Heart			Respiratory diseases		Alimentary diseases		Urinary Tract diseases	Toxaemias		Haemorrhage				Shock				Infectious diseases				Puerperal sepsis	Total
		Valvular diseases of Heart	Heart Failure	Anaemia	Pneumonia	Tuber culosis	Tubercular Enteritis	Dysentery	Renal Failure	Pre Eclamptic Toxaemonia	Eclampsia	Accidental Haemorrhage	Placenta Praevia	Intra & Post Partum Haemorrhage	Retained Placenta	Obstetric shock	Post Operative Shock	Shock due to Internal Manipulation	Ruptured Uterus	Typhoid	Meningitis	Other Fevers	Small Pox measles etc.	Puerperal Sepsis	
1	Tondiarpet	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2
2	Royapuram	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
3	Palmyrah Kuppam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Washermenpet	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...	...	5
5	Sanjiviroyanpet	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2
6	George Town	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3
7	Muthialpet	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
8	Kothwal Bazaar	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
9	Treveleyen Basin	...	...	2	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	7
10	Park Town	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
11	Maternity Home Choolai	...	...	...	...	...	...	...	...	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	4
12	Sembiam	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
13	North Perumber	...	1	...	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	4
14	Pulianthope	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	1	1	...	1	1	...	...	7
15	Purasamalkam	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2
16	Kilpauk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
17	Chetpet	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
18	Egmore	...	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	3
19	Saidapet	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	3
20	Periamet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Triplicane	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
22	Mirsahibpet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23	Mylapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	Royapetah	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Mandavalli	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	Adyar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	Teynampet	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	Thyagaraya Nagar	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
29	Kodambakam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Ayanavaram	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2
		1	1	4	2	5	1	1	...	6	5	1	1	7	3	3	2	3	2	...	1	4	3	1	57

h—19

Showing Infants born in the year 1950 and kept under observation for a period of one year after birth.

No.	Centre	Total Number of Infants born in 1950	Number of still birth in 1950	Died within												Total number of deaths excluding still births	Left the city or otherwise not traceable	Said to be well	Out of division	No. of living children traceable in the city when one year old.	No. of living children when one year old.
				1 to 7 days		8 days to 1 month		2 to 3 months		4 to 6 months		7 to 9 months		10 to 12 months							
				Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable	Died	Not Traceable						
1	Tondiarpet ...	987	26	21	11	7	4	4	3	11	2	9	1	6	19	58	40	21	70	772	863
2	Royapuram ...	550	12	18	...	5	..	7	...	17	3	17	5	13	5	77	13	52	...	396	448
3	Palmyrahkuppam ...	359	12	11	...	2	1	7	3	10	10	4	4	3	8	37	26	26	...	258	284
4	Washermanpet ...	2027	66	64	...	12	11	12	6	32	14	47	9	35	39	202	79	189	...	1491	1680
5	Sanjiviroyanpet ...	1062	24	18	31	6	6	8	5	17	49	29	17	19	20	97	128	75	...	738	813
6	George Town ...	1223	26	30	50	4	9	13	14	37	10	27	27	18	47	129	157	128	...	783	911
7	Muthialpet ...	843	20	24	...	10	...	12	9	38	23	16	19	15	15	115	66	61	...	581	642
8	Kothawal Bazaar ...	469	9	21	...	14	2	6	5	17	12	13	14	13	25	84	58	16	...	302	318
9	Trevelyen Basin ...	1515	38	30	16	25	9	28	8	32	30	34	33	28	112	177	208	236	...	856	1092
10	Park Town ...	394	10	5	...	3	4	11	...	3	2	5	3	8	21	35	30	29	...	290	319
11	Maternity Home, Choolai	2170	58	37	47	23	50	30	59	36	67	35	64	58	112	219	399	263	...	1231	1494
12	Sembiam ...	1123	42	50	...	13	3	13	1	15	4	19	6	22	16	132	30	47	107	765	919
13	North Perambur	1063	30	16	29	11	1	13	2	25	3	16	32	17	97	98	164	109	...	662	771
14	Pulianthope ...	1316	30	29	4	15	..	17	..	23	...	17	...	16	189	117	193	72	...	904	976
15	Purasawalkam ...	1246	30	44	12	21	8	25	1	30	75	26	43	23	78	169	217	151	...	679	830
16	Kilpauk ...	537	17	15	23	4	5	7	1	6	2	3	6	7	7	42	44	9	...	425	434
17	Cheipet ...	759	17	27	14	16	12	11	5	21	9	14	10	15	14	104	64	55	...	519	574
18	Egmore ...	735	11	14	1	10	1	19	2	12	5	16	2	22	73	93	84	51	...	496	547
19	Saidapet ...	1523	48	29	53	17	12	4	29	16	32	22	46	27	63	115	235	155	183	787	1125
20	Periamet ...	668	12	16	16	9	3	5	...	19	3	13	8	8	52	70	82	82	...	422	504
21	Triplicane ...	1592	20	33	10	34	3	19	10	35	20	49	32	23	112	193	187	313	...	879	1192
22	Mirsahibpet ...	854	15	25	...	7	...	12	2	6	1	7	2	17	51	74	56	13	...	696	709
23	Mylapore ...	731	19	15	...	7	4	20	8	11	11	24	4	25	51	102	78	52	...	480	532
24	Royapettah ...	537	10	12	1	7	2	8	2	20	3	15	6	11	10	73	32	71	...	351	422
25	Mandavalli ...	525	14	18	...	4	...	...	...	11	2	13	10	26	23	72	41	52	...	346	398
26	Adyar ...	490	21	10	98	9	1	9	1	13	...	7	1	7	5	55	94	69	12	239	320
27	Teynampet ...	456	14	15	1	12	...	11	...	8	1	7	5	6	68	59	75	32	...	276	308
28	Theyagaroyanagar ...	328	6	11	...	3	...	5	...	5	4	5	4	6	27	35	35	54	...	198	252
29	Kodambakam ...	267	7	4	1	1	2	3	...	...	3	5	...	3	20	16	26	18	...	200	218
30	Ayanavaram ...	608	13	15	...	3	...	...	...	3	...	1	...	...	28	22	28	94	...	451	543
		26957	677	677	418	314	153	339	176	529	400	515	413	497	424	2871	2969	2595	372	17473	20440

CHILD WELFARE

Statement VIII

Showing causes of deaths among infants born in 1950 and kept under observation during 1st year of life.

No.	Centre	Total number of Infants born in 1950	No. of still births in 1950	Neontal deaths				Cardio vascular diseases		Respiratory diseases				Alimentary diseases		Urinary diseases	Septic condition			Specific diseases			Deficiency diseases				Pyrexias		Infectious diseases				Other diseases						Total number of deaths excluding still births	Left the city or otherwise not traceable	Said to be well	Out of Division	No of living children traceable in the city when one year old	Number of living children when one year old.
				Pre-maturity	Asphyxia	Birth Injury	Congenital Pyloric stenosis	Congenital Heart Diseases	Anaemia	Broncho-Pneumiona	Tuberculosis	Diptheria	Whooping cough	Intestinal obstruction	Enteritis	Dysentery	Neptiritis	Tetanus	Pyaemic abscess	Skin diseases	Cengenital syplnlis	Marasnus	Rickets	Scurvy	Malnutrition	Typhoid	Influenza	Malaria	Small-pox	Chicken-pox	Measles	Mumps	Cholera	Infantile biliary cirrhosis	Debility	Accidents, bites & stings	Poisoning	Cause unknown						
1	Tondiarpet ...	987	26	28	...	...	...	...	...	5	...	...	...	...	18	3	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	...	58	40	21	70	772	863
2	Royapuram ...	550	12	18	...	2	...	...	...	12	...	...	4	...	23	3	...	...	...	...	...	...	1	...	...	1	3	...	6	...	...	...	...	4	...	...	...	77	13	52	...	396	448
3	Palmyrahkuppam ...	359	12	11	...	1	...	...	...	...	...	...	...	...	12	4	...	...	...	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	37	26	26	...	358	284
4	Washermanpet ...	2027	66	64	...	8	...	...	5	7	...	...	2	...	58	3	2	...	1	...	...	...	1	...	...	...	43	...	2	...	...	...	...	...	...	...	11	202	79	189	...	1491	1680
5	Sanjiviroyanpet ...	1062	24	23	1	6	...	...	...	21	...	...	1	...	22	6	...	...	1	...	...	...	...	...	5	...	...	...	6	...	...	...	...	2	...	...	3	97	128	75	...	738	813
6	George Town ...	1223	26	32	...	11	...	...	...	20	...	...	3	...	33	4	...	...	...	1	...	...	...	...	...	...	23	...	1	...	...	...	...	...	...	...	1	129	157	128	...	783	911
7	Muthialpet ...	843	20	24	...	13	...	...	...	20	...	...	5	...	17	3	...	...	...	...	...	...	4	...	...	...	9	...	18	...	...	...	2	...	...	...	...	115	66	61	...	581	642
8	Kothawal Bazaar ...	469	9	21	...	5	...	...	...	14	...	...	...	...	20	5	...	...	1	1	...	2	3	...	...	...	5	...	2	...	...	...	...	...	...	...	5	84	58	16	...	302	318
9	Treveleyen Basin ...	1515	38	30	...	6	...	...	...	22	...	...	6	3	31	3	...	...	5	...	...	2	7	...	5	...	29	...	4	...	...	...	...	6	...	1	17	177	208	236	...	856	1092
10	Park Town ...	394	10	5	...	3	...	...	...	...	...	...	2	...	5	3	...	...	...	...	...	...	...	...	...	...	17	...	...	...	...	...	...	...	...	...	...	35	30	29	...	200	319
11	Maternity Home, Choolai ...	2170	58	59	...	11	...	...	...	18	...	...	2	...	41	4	...	...	...	21	...	...	...	...	...	...	36	...	...	...	...	...	112	...	2	...	12	219	399	263	...	1231	1494
12	Sembiam ...	1123	42	50	...	3	...	...	...	2	...	...	2	...	27	4	...	...	3	1	...	...	...	...	...	...	21	...	1	...	...	...	17	...	...	...	1	132	30	47	107	765	919
13	North Perambur ...	1063	30	16	...	3	...	...	...	11	...	...	...	...	23	1	...	...	2	1	...	...	3	2	...	...	32	...	...	...	...	...	1	...	...	...	3	98	164	109	...	662	771
14	Pulianthope ...	1316	30	44	...	3	...	...	...	20	...	...	3	...	24	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	117	193	72	...	904	976
15	Purasawalkam ...	1246	30	48	...	13	...	...	...	8	...	...	...	...	51	3	...	...	5	...	...	1	...	...	...	...	32	...	3	...	...	...	...	...	...	...	5	169	217	151	...	679	830
16	Kilpauk ...	537	17	16	1	...	...	...	...	2	...	...	3	...	11	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	...	...	...	2	...	...	...	42	44	9	...	425	434
17	Chetpet ...	759	17	27	...	6	...	...	...	7	...	...	1	1	21	1	...	...	2	6	...	...	...	...	...	...	23	...	1	...	...	...	2	4	...	...	2	104	64	55	...	519	574
18	Egmore ...	735	11	15	...	14	...	...	...	5	...	...	3	...	21	...	...	...	...	3	...	...	...	...	...	...	52	...	...	...	...	...	...	...	...	...	...	93	84	51	...	469	547
19	Saidapet ...	1523	48	32	...	8	...	...	...	10	...	...	1	...	21	8	1	...	...	...	...	...	...	...	...	...	24	...	1	...	...	...	1	...	...	...	8	115	235	155	183	787	1125
20	Periamet ...	668	12	16	...	8	...	...	...	2	...	...	...	...	25	1	...	...	1	1	...	...	...	...	...	...	6	...	3	...	...	...	...	...	...	...	7	70	82	82	...	422	504
21	Triplicane ...	1592	20	33	...	9	...	...	...	7	...	...	2	...	37	3	...	...	7	...	...	1	...	6	...	...	62	...	1	...	...	...	12	...	...	...	13	193	187	313	...	879	1192
22	Mirsahibpet ...	854	15	25	...	2	...	...	...	3	...	...	...	...	13	4	...	...	...	3	...	...	...	...	...	...	22	...	2	...	...	...	...	...	...	...	...	74	56	13	...	696	709
23	Mylapore ...	731	19	15	...	7	...	...	...	4	...	...	1	...	41	3	...	...	...	5	...	...	...	...	...	...	22	...	4	...	...	...	...	...	...	...	...	102	78	52	...	480	532
24	Royapettah ...	537	10	12	...	4	...	...	...	6	...	...	2	...	18	...	...	...	...	2	...	6	...	...	...	...	16	...	1	...	...	...	...	1	...	...	5	73	32	71	...	351	422
25	Mandavalli ...	525	14	18	...	4	...	...	...	3	...	...	3	...	19	6	...	...	...	...	...	...	...	...	...	2	16	...	...	...	...	...	...	...	...	...	1	72	41	52	...	346	398
26	Adyar ...	490	21	12	...	3	...	...	...	8	...	...	...	...	10	2	...	...	...	...	...	3	...	1	...	...	11	...	...	...	...	...	1	...	...	...	4	55	94	69	12	239	320
27	Teynampet ...	456	14	15	...	4	...	...	...	4	...	...	...	...	17	...	...	...	...	...	...	...	1	...	...	...	14	...	1	...	...	...	...	...	...	...	3	59	75	32	...	276	308
28	Thyagaroyanagar ...	328	6	11	...	...	...	...	...	1	...	...	...	...	11	3	...	...	...	1	...	...	...	...	...	...	6	...	2	...	...	...	...	...	...	...	...	35	35	54	...	198	252
29	Kodambakkam ...	267	7	4	...	2	...	...	...	2	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	4	...	1	...	...	...	...	...	...	...	...	16	26	18	...	200	218
30	Ayanavaram ...	608	13	15	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	...	...	22	28	94	...	451	545
		26957	677	739	2	159	...	...	5	245	...	...	46	4	674	88	3	...	28	46	...	17	20	9	10	3	524	...	61	...	...	...	6	60	5	1	116	2871	2969	2595	372	17473	20440

CHILD WELFARE STATEMENT No. IX

Showing the total number of Priority milk Consumers from 1st January to 31st December 1951

No.	Centre	Infants	Toddlers	Total
1	Tondiarpet ...	78	...	78
2	Royapuram ...	74	...	74
3	Palmyrah Kuppam ...	109	...	109
4	Washermenpet ...	127	...	127
5	Sanjiviroyanpet ...	137	...	137
6	George Town ...	113	...	113
7	Muthialpet ...	91	...	91
8	Kothwal Bazaar ...	94	...	94
9	Treveleyen Basin ...	217	...	217
10	Park Town ...	85	...	85
11	Maternity Home, Choolai ...	115	...	115
12	Sembiam ...	94	...	94
13	North Perambur ...	200	...	200
14	Pulianthope ...	66	...	66
15	Purasawalkam ...	91	1	92
16	Kilpauk ...	102	...	102
17	Chetpet ...	116	...	116
18	Egmore ...	88	...	88
19	Satdapet ...	102	...	102
20	Pariamet ...	94	...	94
21	Triplicane ...	92	...	92
22	Mirsahibpet ...	83	...	83
23	Mylapore	113	...	113
24	Royapetah ...	89	4	93
25	Mandavalli ...	83	...	83
26	Adyar ...	46	...	46
27	Teynampet ...	...	...	...
28	Thyagaroya Nagar ...	....	....	...
29	Kodambakkam ...	...	...	...
30	Ayanavaram ...	...	...	...
	Total ...	2699	5	2704

CHILD WELFARE — STATEMENT No. X

Showing the total attendance of Expectant and nursing mothers and Children at the out patient clinics in 1951.

No.	Centre	Attendance at clinics								Total New Attendance	Total old Attendance	Grand Total	Diseases treated										
		Infants		Pre-School		Expectant Mothers		Nursing Mothers					Respiratory	Alimentary	Skin Affection	Intluenza	Ear and Eye diseases	Anaemia	Malaria	Vitamin difficiency	Normal	Other diseases	Total
		New	Old	New	Old	New	Old	New	Old														
1	Tondiarpet ...	2152	7095	2099	3695	129[illegible]	3248	3425	8270	8970	22299	31269	352	1298	232	1773	196	109	28	...	...	4982	8970
2	Royapuram ...	169[illegible]	2725	860	560	120[illegible]	3155	2014	3513	5771	9953	15724	970	1210	572	503	115	494	76	...	...	1831	5771
3	Palmyrah Kuppam ...	2329	5761	3766	3904	75[illegible]	2160	2487	3738	9337	15563	24899	1436	1607	675	1329	270	702	113	73	173	2958	9336
4	Washermenpet ...	3902	15690	648	1354	2955	6153	4119	11490	11624	34687	46311	2525	2522	1337	1008	826	843	852	120	287	1304	11624
5	Sanjiviroyenpet ...	2847	5754	2231	2713	1474	3101	3438	6397	9990	17965	27955	935	1687	385	1339	177	444	139	54	...	4830	9990
6	George Town ...	2734	5932	1729	2373	1485	4919	3129	7141	9075	20365	29440	1292	1572	282	858	95	352	369	22	...	4233	9075
7	Muthialpet ...	1886	4324	914	1263	1223	3021	2204	4271	6227	12878	19105	1450	1193	740	1001	35	692	90	22	...	1004	6227
8	Kothawal Bazaar ...	1963	3451	1715	1862	994	3850	2124	4716	6796	13879	20675	1697	1467	263	127	86	153	144	...	...	2859	6796
9	Treveleyan Basin ...	3504	8676	1587	1829	2024	5583	3795	8875	10910	24963	35873	1462	2326	813	2132	276	116	244	12	...	3529	10910
10	Park Town ...	1336	2818	1217	1351	614	1538	1582	3011	4749	8718	13467	1269	751	321	695	173	304	107	...	...	1129	4749
11	Maternity Home Choolai ...	2929	4647	1685	2484	2389	8652	3253	7476	10256	23623	33879	3093	2214	518	1469	163	561	57	31	...	2150	10256
12	Sembiam ...	2659	6535	1183	998	1558	4923	3530	7144	8930	19600	28530	1909	1654	451	976	362	594	4	...	...	2980	8930
13	North Perambur ...	2321	5559	1248	1346	1503	3171	3146	6081	8218	16157	24375	1122	2277	502	1669	313	442	40	...	...	1853	8218
14	Pulianthope ...	3308	7715	2024	1681	2178	3121	5200	8247	12710	20764	33474	1924	2703	743	1403	810	794	78	...	...	4255	12710
15	Purasawalkam ...	3439	7931	2284	1833	2069	4144	3804	8022	11596	21920	33516	2554	2476	443	1632	245	502	16	...	...	3728	11596
16	Kilpauk ..	1381	4021	1718	2270	892	1876	2094	4198	6085	12365	18450	1514	877	629	1101	285	412	26	...	169	1072	6085
17	Chetpet ...	2259	6306	2133	2258	1141	2392	2299	5974	7832	16930	24762	1157	1502	657	669	211	390	1	347	...	2898	7832
18	Egmore ...	1970	4352	1313	1302	1355	2853	2421	5159	7059	13666	20725	1627	1499	434	841	99	554	166	390	...	1449	7059
19	Saidapet ...	2704	7521	778	596	2202	5282	3322	8651	9006	22050	31056	1019	1537	620	863	275	502	18	1112	...	3060	9006
20	Periamet ...	1931	3637	2557	2035	904	1924	2246	4585	7638	12181	19819	1672	1545	513	1419	309	518	34	...	...	1598	7638
21	Triplicane ...	2215	6033	649	665	2347	4340	2241	6838	7672	17876	25548	1186	941	204	727	32	439	101	323	...	3719	7672
22	Mirsahibpet ...	1794	4309	1576	2021	1507	5053	1584	3875	6461	15258	21719	1551	1438	718	1103	100	361	17	...	173	1000	6461
23	Mylapore ...	1837	6520	1041	1390	1372	3621	2045	4584	6295	16115	22410	1366	1385	379	554	16	426	7	...	...	2162	6295
24	Royapetah ...	1537	4277	832	1002	1014	3017	1422	2995	4805	11291	16096	1056	1133	366	845	22	266	3	...	...	1114	4805
25	Mandavalli ...	1819	3699	1348	1135	984	2596	2571	4459	6722	11889	18611	1154	1193	513	703	248	318	24	506	...	2063	6722
26	Adyar ...	1560	3604	1122	568	604	1595	1745	2813	5031	8580	13611	847	781	328	562	273	458	2	239	...	1541	5031
27	Teynampet ...	...	...	...	...	731	297	...	...	731	297	1028	73	130	2	4	...	25	...	52	261	181	731
28	Theyagaraya Nagar...	...	...	...	...	463	241	...	...	463	241	704	22	93	3	...	...	11	...	30	240	64	463
29	Kodambakam ...	...	...	...	...	376	161	...	...	376	161	537	108	184	...	3	2	30	2	10	...	37	376
30	Ayanavaram ...	630	3186	...	...	1030	2985	718	3374	2378	9545	11923	598	303	184	351	96	279	...	...	...	567	2378
		60638	152078	40257	44831	40639	98973	72178	155897	213712	451779	665491	38940	41498	13857	27659	6110	12091	2758	3343	130[illegible]	66150	213712

Annual Return - Maternity and Child Welfare - from 1st January to 31st December 1951

FORM A.

No.	Centre.	Brought under care					Home Visits							Clinics								Maternal Mortality and Morbidity	
								Health Visitors			Midwives			Attendance									
		Maternity cases Total Number of Mothers	Ante-Natal	Labour	Infants	Pre-School	Women Medical Office	A. N.	P. N.	Infants	Toddlers	A. N.	P. N.	No. Held	Ante Natal	No. Held	Infants	No. Held	Pre School	No. Held	Nursing Mothers	Mortality	Morbidity
1	Tondiarpet ...	1395	1294	1180	1153	793	1313	542	140	1961	800	797	6045	155	4543	159	9247	159	5784	159	11695	2	112
2	Royapuram ...	1211	1205	545	528	448	1020	176	457	4093	489	476	5546	155	4360	157	4417	157	1420	157	5527	1	133
3	Palmyrah Kuppam ...	813	754	393	376	283	1220	634	255	1886	306	1590	3247	156	2914	157	8090	157	7670	157	6225	...	140
4	Washermanpet ...	3011	2955	2294	2220	1680	1816	2138	346	5838	2230	2529	15537	156	9108	156	19592	156	2002	156	15609	5	233
5	Sanjiviroyanpet ...	1486	1474	1380	1349	813	1551	108	203	4194	702	3234	6086	156	4575	157	8601	157	4914	157	9835	2	694
6	George Town ...	1483	1483	1155	1131	911	1192	575	635	2566	699	1565	12120	156	6402	3	3	8666	313	4102	313	10270	3	823
7	Muthialpet ...	1228	1223	832	801	642	1209	683	191	2661	701	1787	8200	156	4244	312	6210	312	2176	312	6475	2	131
8	Kothawal Bazaar ...	1018	994	729	704	318	85	1343	116	3120	460	998	3991	156	4814	156	5414	156	3577	156	6840	3	197
9	Treveleyan Basin ...	2033	2024	1538	1501	1092	1115	62	623	4219	1222	1897	9838	157	7607	157	12180	157	3416	157	12670	7	562
10	Park Town ...	614	614	334	323	319	1092	873	128	1073	369	496	3282	156	2152	356	4154	356	2568	356	4593	...	136
11	Maternity Home Choolai ...	2405	2389	2103	2058	1494	1009	438	166	4010	1310	1658	11312	312	11041	312	7576	312	4533	312	10729	4	800
12	Sembiam ...	1630	1558	1335	1280	919	1051	285	59	2984	814	1523	8554	156	6481	156	9194	156	2181	156	10674	1	506
13	North Perambur ...	1504	1503	1266	1222	771	820	101	140	1655	848	1285	7665	156	4674	156	7880	156	2594	156	9227	4	168
14	Pulianthope ...	2190	2178	1798	1756	976	1096	667	189	2248	1188	3890	8588	156	5299	156	11023	156	3705	156	13147	7	326
15	Purasawalkam ...	2086	2069	1486	1464	830	1172	152	256	2604	916	3144	10231	156	6213	314	11370	314	4107	314	11826	2	193
16	Kilpauk ...	899	892	652	627	434	1289	148	115	2333	424	1105	3358	156	2768	157	5402	157	3988	157	6292	1	154
17	Chetpet ...	1157	1141	863	826	574	1447	262	171	2676	556	960	4735	156	3533	157	8565	157	4391	157	8273	2	210
18	Egmore ...	1367	1355	712	704	547	1254	247	233	2539	667	1745	6530	155	4208	155	6322	158	2615	158	7580	3	84
19	Saidapet ...	2211	2202	1648	1611	942	1256	361	159	3616	1137	2115	7925	156	7484	151	10225	151	1374	151	11973	3	188
20	Periamet ...	909	904	667	657	504	799	162	43	1271	663	2005	3218	156	2828	313	5568	313	4592	313	6831	...	338
21	Triplicane ...	2384	2347	1696	1652	1192	1194	436	130	5444	1436	2716	11521	156	6687	155	8248	155	1314	155	9299	2	309
22	Mirsahibpet ...	1508	1507	812	799	709	1246	472	135	6787	810	1718	7362	157	6560	157	6103	157	3597	157	5459	...	159
23	Mylapore ...	1388	1372	805	779	532	1065	568	172	3046	686	1183	6739	156	4993	157	8357	157	2431	157	6629	...	345
24	Royapetah ...	1019	1014	578	563	422	967	424	169	1671	358	2046	4455	157	4031	157	5814	157	1834	157	4417	...	424
25	Mandavalli ...	997	984	590	573	398	1186	239	180	3014	446	865	7192	157	3580	157	5518	157	2483	157	7030	...	278
26	Adyar ...	607	604	538	520	308	1059	116	27	1859	248	1974	3445	157	2199	...	5164	157	1690	157	4558	...	297
27	Teynampet ...	742	731	511	492	308	101	327	247	1005	371	360	5110	83	1028	...	...	...	...	...	...	...	404
28	Theyagaroyanagar ...	470	463	381	370	252	135	185	152	855	177	2336	274	52	704	...	...	...	...	...	...	1	278
29	Kodambakam ...	376	376	372	364	218	209	...	...	112	150	980	2467	48	537	...	...	...	...	...	...	...	44
30	Ayanavaram ...	1036	1030	738	719	545	...	2	...	372	299	1080	6300	...	4015	...	3816	...	...	...	4092	2	301
		41174	40639	29931	29122	20175	30734	12726	5827	81712	21482	50657	260473	4397	139612	5047	212716	5050	85083	5053	228075	57	8967