## Contributors

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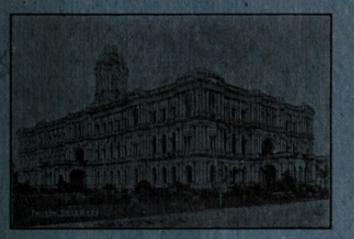
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## CORPORATION OF MADRAS

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## ANNUAL REPORT

## OF THE

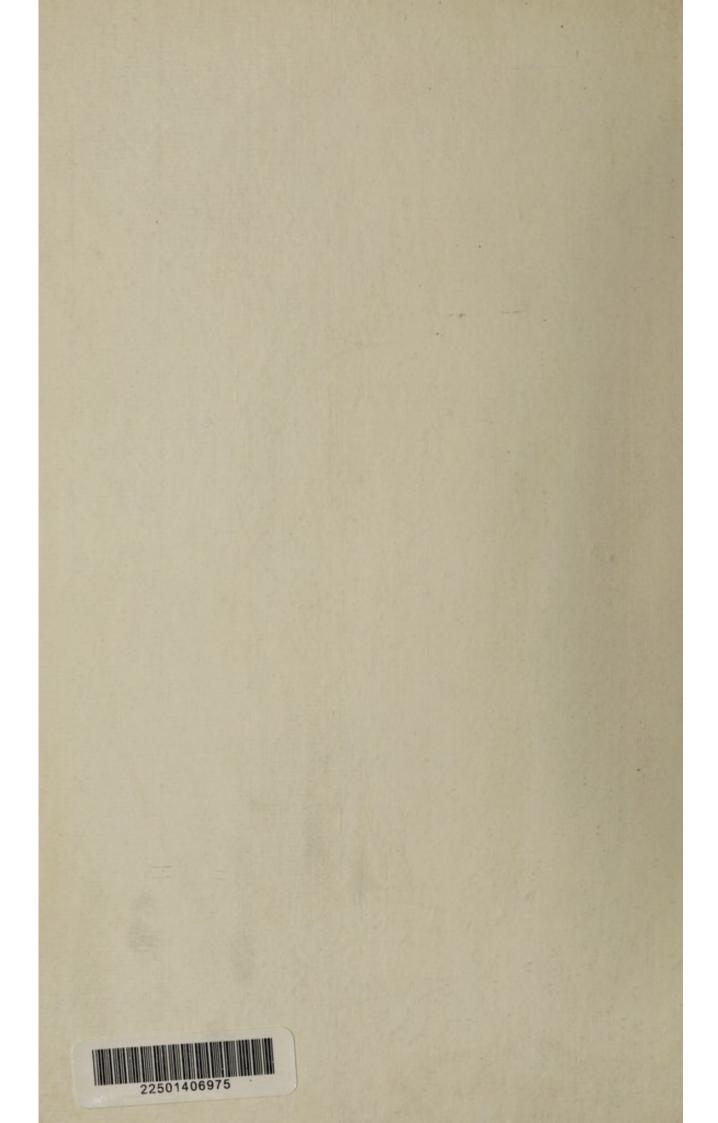
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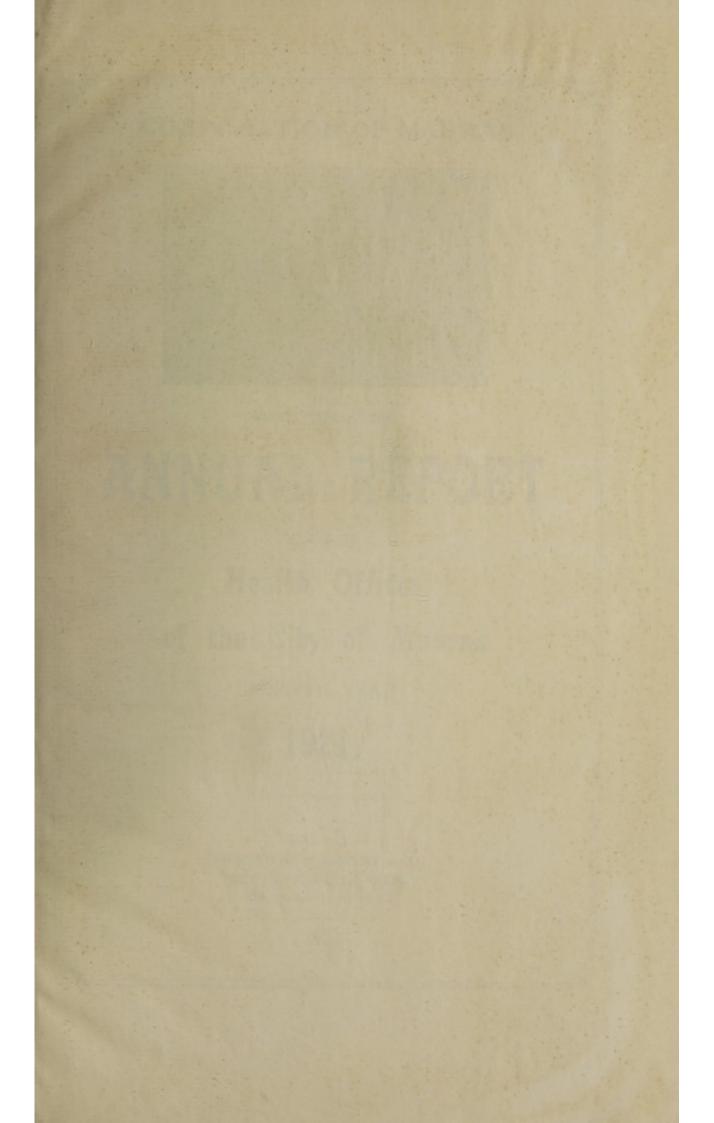
FOR THE YEAR

1921.

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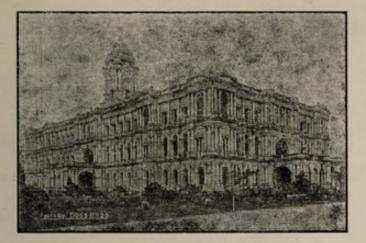
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## CORPORATION OF MADRAS



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# ANNUAL REPORT

## OF THE

Health Officer

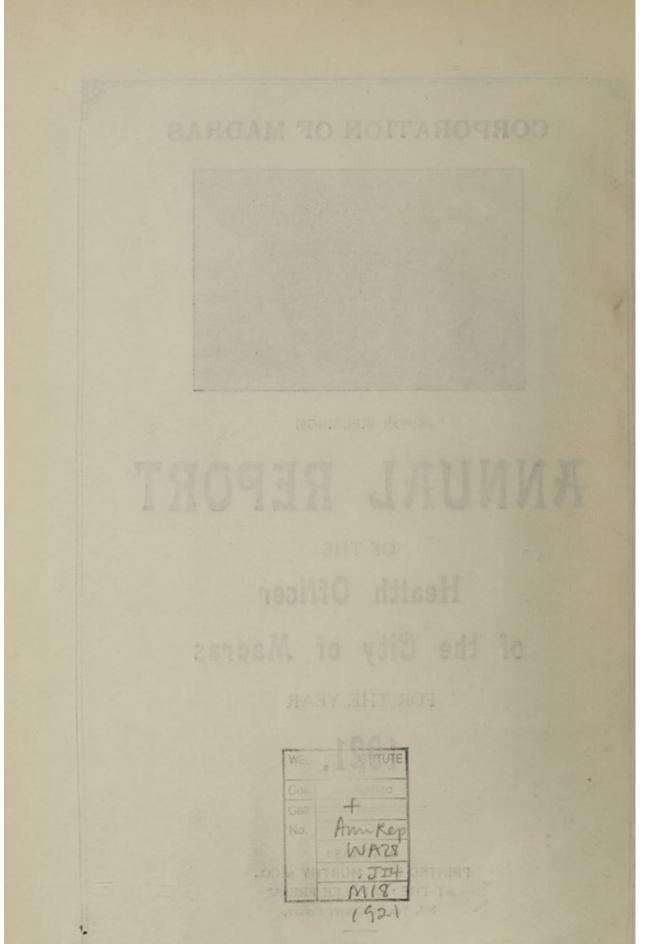
of the City of Madras

FOR THE YEAR

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1922.



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#### CORPORATION OF MADRAS,

Health Department, 1-8-22.

To

#### The Commissioner,

Corporation of Madras, M A D R A S.

Sir,

I have the honour to submit the Annual Health Report for the year 1921. I was on leave from 3rd March to 19th November 1921 consequent on my having had to go to England for qualifying for the D. P. H., and Dr. C. Singaravelu Mudaliar was officiating for me. Till the latter date, the various branches of work in the Health Department were under the administrative control of the Health Officer as in previous years; but since the date of my rejoining, I have been relieved of the superior control and guidance over the conservancy branch which is now under the Senior Assistant Health Officer working directly under the Commissioner.

The year 1921 does not appear to have been an eventful one in any particular respect, except for the fact that retrenchments have been effected in certain directions. The Sanitary staff, with which I am at present concerned, has been reduced which seems to be telling upon the efficient despatch of work, especially in the face of out-breaks of epidemic diseases. The retrenchments were, no doubt, largely due to financial stringency; but it is to be hoped that as early as possible, the sanitary staff will be brought up to an efficient standard.

The outstanding features of the state of Public Health in the city for the year under review may be broadly stated to have been as follows; and the data furnished therein may be taken on the whole as providing something in the nature of a bird's eye-view of the physical survey of the population.

The population of the City according to the Census of 1921 is 526,911 as against 518,660 in 1911, an increase of 8,251 inhabitants. While it is true that a very small gain is made in the population of the city over that of 1911, it is equally true that this gain is not as the result of a balance between the total number of births and total number of deaths. For, during the intercensal period of ten years the total number of deaths exceeds the births by 22,020 and the actual increase, insignificant as it is, should be due to other causes such as immigration etc. This clearly indicates a sad tale of misery and suffering amongst the people whose expectation of life is still as low as 25 as compared with 52 for England.

There is a birth-rate of 36.4 per mille which is also lower than that for 1920, viz, 41.3 per mille. This is however very high, compared with the rates of the Presidency or even for other parts of India. In the absence of any special prosperous conditions, this high birth rate shows that in this city there is a large female population at child bearing ages, although for the matter of economic progress this population cannot be considered as an effective one.

The death rate of the city is 38.5 per mille and although lower than that for last year, it is still keeping high and shows no tendency to fall as compared with the rates for several years except for 1916, when the lowest rate of 34.5 per mille was recorded. The infant mortality rate was 281.9 per 1000 live births. This figure is slightly higher than that for 1920. But the rise is only apparent since the rates worked out are based on the number of births which was larger in 1920 than in 1921. Nevertheless, this betrays an appalling sacrifice of young life who came into the world only to die.

Amongst the causes of death, those under infectious diseases<sup>\*</sup> count for 25.4 per cent of total deaths. Almost all these are from preventable causes. Not only is the primary burden heavy but the ultimate results are grave. There were during the year under review 569 attacks and 180 deaths from Small pox and 240 attacks and 139 deaths from Cholera and 2,212 deaths from fevers, these three causes alone being responsible for approximately 50 per cent of the total deaths under Infectious Diseases. In fact Smallpox was endemic throughout the whole of 1921 and the disease showed signs of becoming epidemic about the end of the year.

The principal causes of mortality other than the above have been due, as in previous years, to Diarrhoea and Dysentery, Bronchitis and other diseases of the lung which contribute 20.5 and 11.5 per cent respectively to total deaths.

*Beri Beri	Influenza	Puerperal Fever	Syphilis
Cerebro-spinal Meningitis	Kela-Azar	Pneumonia	Tetanus
Chicken-pox	Leprosy	Pyrexia	Tuberculosis (Palmonary)
Cholera	Malaria	Hydrophobia	Tuberculosis (Other than pulmonary)
Diptheria	Measles	Rheamatism	Whooping Cough.
Typhoid fever	Mumps	Septicaemia	
Erysipelas	Plague	Small-pox	

In addition to the above there is a wide prevalence of ill health in the community due to general sickness, invalidity and impairment of health which ultimately leads to disablement, disease and even to death. The statistics of the various Hospitals showing an increasing attendance both at the in-patients and out-patients, the increasing bills from doctors at their consultations, and, not less important, the grave physical defects of infancy and childhood are substantial evidences of the prevailing unhealthiness amongst the people. Sir Alfred Watson calculates that for every death there will be 3.6 years of sickness, *i*, *e*., the loss in the earning capacity of an individual due to disablement for that period. This in the aggregate would mean the loss to the nation of the working capacity of a very large number of persons every year.

The usefulness of a Public Health Organisation is to be judged in so far as it is enabled to carry out measures in relief of this vast misery and suffering amongst the people. The purpose of preventive medicine is to prevent such disease as is preventable, to lengthen men's life and make it happier and more effective.

It is customary to invite, through the medium of the annual reports, the attention of the authorities with regard to our wants and to the more urgent measures of samtary reforms called for towards bettering the state of Public Health. But there still seems to exist some confusion as to the real issues at hand, and as to the vulnerable points to be tackled with. What really appears to be in the way of real progress is a clear cut policy and its execution to efficient completeness. I therefore make no apology in going over the same ground once again even at the risk of being told "of talking platitudes but achieving little."

A fundamental similarity exists in the Health Problems of all civilised countries and such differences as there have been are entirely due to climate, density of population, conditions of occupation or industry and to the social and economical factors peculiar to each country. The first stimulus to sanitary improvement in almost all countries has been the threat or occurrence of epidemic diseases. The Black Death in England, Plague and Cholera in Canada, Malaria and Yellow Fever in Africa, Malaria in the Panama etc., have acted as such stimuli and, as a result, we find now that the science of preventive medicine is practised in the western world in a systematised and organised manner. Further, urbanisation has created evil conditions as well, and called for urgent permanent remedial measures on progressive lines. These measures were based on the principles of environmental cleanliness, which, in actual practice, meant the removal and prevention of nuisance from effluvium and the systematic establishment of communal drainage and water supply. In fact, the very first achievements of any civilised country towards sanitary progress have been "the under-drainage of the soil, which prevented staguant waterand relieved the city of Malaria, the removal of the cellular population to houses in the open air and sunlight, the removal of offensive industries from residential districts to the rivers, and the improvement of rigid sanitary regulations". These lines were written by Dr. Stephen Smith, the revered Founder of the American Public Health Association as far back as 1866 and even to this day pioneers of Public Health reformation are, in the broad outline of their policy, actuated by such a kind of inspired empiricism. The discoveries of Bacteriology have thrown considerable light as to the specific causes of disease and its prevention. They gave a further impetus for the opening up of new spheres of hygienic activity. Cleanliness of persons and surroundings has thus acquired a scientific basis and is universally insisted upon. So too, is filth removal which continues to be as fundamentally important as ever. Purity of air, water, milk and food and efficient sewerage, better housing and abaten ent of nuisance from smoke and dust have all acquired a new significance, and measures for the control of infectious diseases have become specialised to meet individual causative factors. All these constitute the national sanitary minimum of "what is necessary for civilised social life" of any community.

It is clearly established that the largest factor causative of disease and high mortality is a defective environment, particularly that of an overcrowded town, and that a high proportion of sickness, not exactly measurable, but probably not less than 1/3rd, of the total could be avoided by securing a healthy environment. The first move of a Public Authority then is to provide such a healthy environment, which, analysed, resolves itself into the provision of pure and wholesome water, effective sewerage, clean food, efficient methods of collection and removal of filth.

The city water supply is what one classes as a "protected water supply" but the quality of the water itself is unfortunately far from being wholesome, not to speak of its purity. Reform in the direction of purifying the water-supply, at least to the extent of preventing suspended matter including various kinds of dirt and dead insects, is urgently called for. It is true additional filters are being constructed and meanwhile experiments with chlorination of water are also being carried on. But nature is relentless, and there is ample evidence to show that the watersupply has a large share in keeping up the high mortality returns. Deaths from Diarrhœa and Dysentery, which are largely water-borne, amount on an average to 9.4 per mille per annum (170 per mille for England and Wales) and as soon as the autumn commences, we apprehend fears of an outbreak of Cholera-"Among the circumstances which we find associated in outbreaks of Typhoid fever" wrote Sir John Simon in 1869, "there is none of more frequent occurrence, none which we are more entitled to consider directly causative of the disease, than the consumption of polluted water. It has been one of our most familiar experiences

that excremental fouling of wells is, in this respect, among the worst dangers threaten the health of a community." Sir George Buchavan which can attributes reduction of "fevers" to the substitution of an ample supply of good water for a scanty and impure supply and further states that "other things being equal, the towns in which this substitution has been completed have made most improvement." Whatever the results of chlorination of water may be and whatever opinions experts may offer on this question, the Corporation might feel assured that purification of water by sand filtration has come to stay (they cannot afford to abandon it now); and chlorivation or no chlorination, their first and most imperative duty is to stop, without further delay, the mixing up of filtered and unfiltered water for public supply and this means the rapid construction of additional filters. The only other alternative possible seems to be to construct suitable storage tanks and tanks for precipitation by chemicals such as Alum, with a view to carry on purification by Chlorination. This method has elsewhere been found to be more economical, on the whole, than purification by sand filtration alone. Financial considerations should not be a bar to progress in this direction, if the much-wished for lowering of mortality returns is to be attained.

Sewerage, if it should be of Public Health utility, shoull be effective and rapidly extended to cherries, slurs, and such other overcrowded localities. It is these latter that suffer most from want of sewers, and there are parts in the city reeking in puddles of sewage and in fifth. A most unwholesome environment is thus created and the poor folk living therein are constantly inhaling foul odours emanating therefrom. The cess-pool must be abolished at once, as well as the ditchdrain, the blind drain and the drain without a gradient. It looks as though Preventive Medicine with us is chiefly concerned with the word "drains"; and it would be superfluous to state that the lungs of persons who constantly inhale these foul odours are easily affected and as a result large numbers die, especially amongst children, from Bronchial diseases (Rate 6.7 per mille) excluding those due to Pneumonia and Tuberculosis.

I understand that progress in this direction is retarded from three causes; first, the long distances, 2nd, the difficulty to find suitable gradients, and 3rd, vested interests. The first two can only be solved by putting our hands deep into our pockets, since they involve increased material and constructional cost, and more pumping stations; and the third calls for a vigorous exercise of the law to enforce the owners for providing these elementary amenities of life for their tenents.

Further, the completion of the sewerage system in the city eases the situation very largely with regard to the collection and disposal of human filth. It is presupposed that the sewers that have been already laid and those that are going to be made hereafter will be ultimately able to accommodate the large volumes of

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sewage which would result from a general application of the water-carriage system as a matter of sanitary reform, either voluntarily or under the powers of the law. Talking of 'water-carriage system of sewage disposal' it behoves us that the programme of replacing the present public privies and latrines by flush- out ones should be rapidly completed.

A third example of the effect of environment on health may be found in the food supply. Food must not only be ideally sound in quality, but it must be sufficient in quantity and nutritive in value. Consumption of bad or contaminated food has been largely responsible to intestinal disorders, fevers &c. Measures for the protection, preservation, and distribution of articles of food for consumption are urgently called for. An act for the prevention of adulteration of articles of food and drugs is already on the Statute Book and its extension and application to the city is entirely left to the discretion of the Corporation. Necessary chemical and Bacteriological apparatus have also arrived and orders of the Corporation regarding the fitting up of a laboratory and appointing an Analyst and staff are awaited.

Our duty in the matter of protection and control of public food supplies is of paramount importance. It is to be wondered that, even in the absence of such measures as are called for above, so little is heard of outbreaks of food poisoning and so little known about these. Luckily, nature has been helping us in several directions. Firstly, the staple articles of our dietary are grown in the country and only a few articles of luxury are imported. There is no need for any food industry for manufacturing or preparing and preserving articles of food. The freshest food, if one can afford it, can be got at any time and consumed. Secondly, animal food which is largely responsible for outbreaks of food poisoning and for diseases of animals communicable to man is not a routine daily article of dietary. In fact, meat food is a rarity and perhapsa luxury in most households, especially of the lower middle and poorer classes. Thirdly, our methods of cooking have attained a high standard of efficiency and the processes of thorough frying, boiling &c., render innocuous any accidental infection that might occur during its collection and transit.

Still, action is called for in the matter of certain articles of food such as fruits and vegetables which are eaten raw. The eating of unripe and over-ripe fruits is a fruitful source of Dysentery or Diarrhoea. But it has to be borne in mind that the form of control necessary is in respect of the article itself, its means of infection and its market. Unwholesome and putrid fruits and vegetables can be destroyed on the spot with the consent of the owner. Diseased meat when traced out might be similarly dealt with. The powers vested in us by the Municipal Act of 1919 are perhaps sufficient in such simple cases; and in fact they are being exercised. But in the matter of articles such as milk, butter, ghee, oil &c. where much sophistication and adulteration is practised, the powers under the special act need to be exercised. The Corporation might therefore consider the desirability of starting the laboratory and extending the said Act as expeditiously as possible.

The need for greater and better housing is the fourth problem to be solved. The insufficiency and unsuitability of the available housing accommodation are equally potent in their bearing to disease and disability. The whole group of Catarrhal and Bronchial diseases which contribute so heavily to invalidity and mortality is traceable to bad housing and its consequential effects of overcrowding, ill-ventilation and insanitation. Also the experience that bad housing increases the incidence of all infectious, contagious, and verminous conditions, of respiratory disease, of anaemia, debility and constitutional maladies, is universal. I may be permitted to state in this connection that the Town-Planning Trust might explore possibilities of extending housing within the present limits of the city itself.

Here then are four problems which call for urgent solution at the hands of any public authority. They are as already stated the barest necessities for healthful existence. "If these are present and adequate, we have something approximating to full life; if they are absent or inadequate, we have insufficiency, poor physique, disease and even death." There is only one obstacle in the way of rapid progress in fulfilling these obligations and that is finance. But when sound Public Health is to be the cry of the day, financial resources must be unravelled. The Central Government might take up the matter or contribute largely towards the cost and the Corporation on their part ought to retrench in directions other than the public health budget. So long as these four problems are not thoroughly and satisfactorily solved, so long will we be witnessing the appalling mortality returns.

But before this comprehensive policy comes into being, the air is thick with demands for the practice of Preventive Medicine on more personal and social lines than on the much needed communal one.

There undoubtedly is a wider conception of Preventive Medicine which, instead of being restricted in its scope to environmental questions even to what is proparly called "drains", includes subjects like infant welfare, maternity, child hygiene, school hygiene, industrial labour, more hospitals especially for Tuberculosis and Venereal diseases, etc. It is therefore as well that the Corporation have started since 1917 a fairly elaborate scheme of infant welfare which is working on progressive lines; and there are proposals under consideration for starting medical inspection of school children attending the Corporation schools. But the success anticipated from these special measures is so much dependent upon the firm establishment of communal hygiene, so much so, that the State which seeks to assist a baby being born alive should also try to place it in such surroundings that it will grow and thrive to a full and happy life. These two-communal and personal hygiene-are so clearly interwoven that one cannot do without the other. A little consideration of the principal facts concerning infant mortality will bring about a correct understanding of the problem. They may be summarised as follows:-

Its incidence falls chiefly in the first three months and more especially in the first week of the first three months (about 25 per cent of the infant deaths) of infant's life; in all countries, it is higher in urban than in rural areas; its incidence is dependent not wholly upon density of population but upon local and domestic conditions characterising social customs and habits; it is higher among the poor and low among the better social classes; the three chief causes of death in infancy are (1) developmental conditions which include immaturity, prematurity, debility, atrophy and marasmus (2) Diarrhoeal diseases and (3) Respiratory dis\_ eases.

If we futher analyse these facts, we at once perceive that infant mortality is largely a problem of environmental conditions under which the new born infant has perforce to be reared and brought up. Dr. Stephenson says "the chances of survival seem to differ but little at birth in town and in the country, but the noxious influences of the former soon come into play and make themselves felt to an increasing extent as the first year of life progresses and to a still greater extent in the second and third year". In other words, the chances of its survival are influenced by its after-birth conditions; nearly  $60^{\circ}/_{\circ}$  of total infant deaths occurs between the 4th and 12th month of *l* ife. It is impossible not to correlate the very marked excess of infant mortality from respiratory diseases in large towns with impurities in the atmosphere. It is also definitely established that diarrhoea in children is most prevalent and fatal in hot, dusty weather. Dr. Newsholme has rapeatedly emphasised the injurious effects of dust and effluvia arising from dirty Streets, ash pits and privies in towns where scavenging is inefficient and unpaved back-yards, inefficient drainage and cess pools are the rule of the day.

From these facts then namely, that "the infant death rate in the first week of life is almost constant under all circumstances and that the range of variation in the first month is small, but that thereafter differences between favourably and unfavourably situated classes become progressively greater as the child gets older," we are led irresistibly to the conclusion that these differences are almost entirely due to the action of post-natal environment. The proof of the above statement is seen from the evidence that in countries where measures for general sanitary improvements were carried out thoroughly, the infantil<sup>9</sup> mortality rates commended to fall side by side and long before the special measures or their reduction were undertaken. Not that maternity and infant welfare schemes as organised now are to be wiped out but that their beneficial effects would be more and more felt if concurrently there were in operation, progressive measures for the general sanitary improvement. The history of any important town in India tells a sad tale of nearly one third to half the infants born dying before they attain the age of one year. While the infantile mortality rate of England and Wales is 80 per 1000 births, that of Madras is 280, and in Bombay, where schemes for infant welfare have been in operation for over a dozen years, as many as 660 children die for every 1000 births.

Infant mortality is said to be the most sensitive index of the physical welfare of any community or vation and of effective sanitary administration and as such the appalling rates of infant deaths that are being witnessed year after year are sufficient testimony of our want of true and proper perspective.

It is clear then that the solution of this large problem of infant mortality should be based on these fundamental principles viz:

(1) That the whole function of motherhood is fulfilled under favourable environmental conditions.

(2) That no child bearing mother is to be without adequate and skilled assistance and no infant without a birth-right of health.

(3) That the infant welfare centres should serve the purpose of supervising the normal baby and not the sick one.

And the work itself should, in short, be directed towards giving practical education to women in the art of "motherhood".

There again exists the same close relationship between "curative medicine" and "preventive medicine." The establishment of a number of dispensaries and hospitals cannot be a panacea for all the ills that the human system suffers from. The science and art of curative medicine is not comprised in the 'bottle of medicine' alone. We attempt to cure many ills which should have been prevented. It is no use in trying to cure a person from attacks of malarial fevers by bottles of quinine mixture, if his surroundings continue to be endemic spots of Malaria. The person with a sore throat gets no benefit from curative medicine if he has to constantly live in the midst of dirt and has to inhale contaminated and vitiated air. Nor again can outbreaks of epidemic disease be prevented unless we eradicate conditions under which they breed and spread. Measures undertaken to kill the rat population or to immunise people by vaccination in the face of an outbreak of Plague or Small pox are not likely to stop the recrudescence of these scourges of humanity unless the well-known general sanitary measures detailed above are pursued steadily and continuously. The Health Authorities should not be left to depend upon "piecemeal effort, spasmodic endeavour or convulsive action inspired

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by urgency, fear or panic". In truth, in advanced countries outbreaks of epidemic diseases have acted as a stimuli and inspired both the authorities and the people for undertaking measures of sanitary reform and legislation which have been not only extensive but also expensive. The eradication from Europe of such dreadful diseases like Typhus, Small-pox and Plague within the last 15 years is a supreme example of what can be done by uncrowding, drainage, water-supply, cleansing and the systematic removal of waste. It is high time that these established facts leave an impression on our minds.

The route to the ideal can neither be quick nor short. But a serious start has to be made and steadily followed. Financial resources must be unravelled but the anticipated return should not be in terms of money value but measured in the lowering of the extent of human suffering and misery. A healthy population is a natural asset to the State.

At the same time a more elaborate and less permissive sanitary legislation is needed. But it should however be remembered that mere legislation would prove abortive unless supported and practised by an enlightened public opinion. "Sanitary instruction is even more essential than sanitary legislation, for if in these matters the public knows what it wants, sooner or later, the legislation will follow; but the best laws in any country are waste paper if they are not appreciated and understood."

Corporation of Madras, 1st August 1922.

#### K. RAGHAVENDRA RAU,

Health Officer.

#### VITAL STATISTICS

#### SUMMARY OF VITAL STATISTICS.

	E Thornton					
Area of the City	dia ango totan dia managar		27.6 sq.	miles	or 17,65	6 acres.
Population (Census of 1921)			5,26,911.			
Average density	tra all ga chapta Itan <del>al</del> regent		29•9 per	acre-		
Density of Divisions 10,11,12,13	3,14 and 15		91·1 per :	acre.	a lago i Vili neg	
Inhabited houses	ade al dardan		64,621.			
Total Births registered in 192 still-births	1 excluding }		19,187 a	gains	t 21,396	in 192)
Still-births		·····	1,136	do	1,172	do
Illegitimate Births			593	do	712	do
Birth-rate			36.4	do	41.3	do
Total deaths registered in 192	1		20,268	do	21 418	do
Death-rate			38.5	do	41.3	do _
Infantile mortality			5,408	do	5,976	do
Infantile mortality rate			281.9	do	<b>279</b> ·3	do
Death rate from infectious dis	eases		17.7	do	17.6	do

The dependent persons (1911-21) has been 16 per cent as spatial 1'S and

#### VITAL STATISTICS.

The year 1921 being the occasion of the decennial census, the population of the City of Madras as enumerated in March was found to be 5,26,911. The rates throughout this report so far as they relate to the year 1921 are based upon this return of population and as a consequence, the statistics may be regarded with greater confidence than in intercensal years.

Consequent on the redistribution of the city into 30 municipal divisions in October 1919, no attempt can be made to explain the variation in population of each Municipal division as compared with the census figures for 1911, when the same city was divided into 20 divisions.

Of the 5,26,911 persons resident in the city on census day, 2,76,107 or 52.4 per cent were males and 2,50,804 or 47.6 per cent were females. In 1911 the males numbered 2,66,465 or 51.4 per cent and the females 2,52,195 or 48.6 per cent. While the male population shows a decrease of 1 per cent, the female population has increased by the same per cent. The ratio of males for 100 females in 1911 was 105.7; in 1921 it was 110.1. This increase in the male population has entirely occurred in the age period 20 to 60, while the age periods 0 to 15, and 60 and over show a decrease Vide Table below :--

-	Census	Population	n 1911.	Census	03.0			
Age.	Males.	Females.	Total.	Males.	Females.	Total.	Increase.	Decreas
	0.500.0	6 815				1	ala e pla	lihunh
0-1	6,502	6,632	13,184	6,341	6,240	12,581		5 5 3
1-5	21,734	22,153	43,887	20,205	20,753	40,958		2,929
5-10	28,650	28,990	-57,640	28,205	28,316	56,521		1,119
10-15	27,709	25,107	52,816	27,575	24,037	51 612		1,204
15 - 20	24,935	25,932	50,867	24,790	25,197	49,987		880
20 - 30	53,947	51,158	1,05,105	56 921	54,543	1,11,464	6,359	
30 - 40	41,180	36,141	:77, 821		38,100	85,680	8,359	
40-50	30,869	26,843	57,712	32,542	26,263	58,805	1,093	
50-60	17,762	16,446	34,203	18,815	15,909	34,724	516	
over,	18,177	12,793	25,970	13,133	11,446	24,579		1,391
		-						-
Potel	2,66,465	2,52,195	5,18,660	2,76,107	2,50,804	5,26,911	16,327	8,076

The decennial increase (1911-21) has been 1.6 per cent as against 1.8 and 12.6 in the decades 1901-11 and 1891-01, respectively.

The absolute increase is slightly less than that of the decade 1901-11.

	Year.	Census	
		Population.	
	1881	405,848	
	1891	452,518	
	1901	509,346	
	1911	518,660	
	1921	526,911	
e	cennial Increase.		Absolute.
	1881-91		46,670

Decommar morease.	reosource.	LOI COM.		
1881-91	46,670	11.5		
1891-01	56,828	12.6		
1901-11	9,314	1.8		
1911-21	8,251	1.6		

Table A on page 93 shows the birth and death statistics for 12 years since 1910.

Climate. The total rainfall during the year was 54.43 inches against 63.89 inches in 1920 and 50.78 in 1919, the five years average being 57.44 inches.

Table B on page 94 shows the quarterly rainfall in the city since 1916.

Registration of births and deaths. of registration of births and deaths in the city.

The number of births registered during the year 1921, exclusive of still-<br/>births was 19,187 being 2,209 less than in the previous year.Births.The ratio calculated on the census population of 1921 was 36.4per mille against 41.3 in 1920 and 36.5 in 1919.

Table C on page 94 shows birth rate by races and Table D on page 95 Birth-rate by shows the rate amongst principal sub-divisions of the Hindu races. The Anglo Indian community returned the highest birth rate of 42.0 and the European community, the lowest, 26.9. These figures cannot, however, be taken for purposes of comparison with the other communities on account of the large variations in their total numbers. Taking for the true natives of the soil, the birth-rate among Muhammadans is the highest.

Births by sex. Births by sex. Out of 19,187 births recorded during the year, the number of males was 10,003 and females 9,184, the ratio of males for 100 females being 108.9.

4

18

Births by months. Table E on page 95 shows the number of births in each month during 1920 and 1921. The largest number of births was recorded in October and next in November and December.

Illegitimate Births,

Five hundred and ninety three illegitimate births were registered during the year against 712 in 1920 and 667 in 1919.

There were 1136 still births during 1921 against 1,172 in 1920

Still-births.

and 837 in 1919; in other words there was 1 infant born dead out of every 18 births. The number of still-births is really on the rise, it being 975 in 1916 and 606 in 1914. This is certainly a grave matter. The causes that bring about such a large number of still births are mostly attributable to poverty, unhygienic home conditions and disease in the mother or father or both. An increase in still births must "give us cause to furiously think" for, an increase in still-births does not merely mean that a few more children died before they had drawn a single breath, but also means in all probability that more mothers have died. Still-birth rate and maternal mortality rate are known to go together, and many anti-natal causes making for a high still-birth rate are just the causes which result in a diminished vitality in the new-born infants and many deaths during the first few days of life. Still-births also indicate that there should have been a large number of abortions and premature births which do not come under our recognition.

The number of deaths registered during the year exclusive of still-births was 20,268 against 21,418 in the previous year. The mean for the previous five years was 23,531. The ratio of deaths calculated on the census population of 1921 was 38.5 per mille against 41.3 in the previous year and 52.4 in 1919 and the mean ratio for the previous five years was 44.7.

Sex. Deaths among males numbered 10,608 and among females 9,660, the proportion being 110 males to every 100 females.

The number of deaths registered among Europeans was 57, Anglo Indians 837, Indian-Christians 895, Hindus 16,422, Mahomedans 2,549 and others 8, the ratios being 19.4, 37.4, 27.8, 38.4, 47.9 and 4.2 respectively.

Mortality among infants under one year of age was, as usual, the highest viz., 5,408; next comes 3,747 deaths among adults of 60 years and upwards. Next comes age-period 1 and under 5 years with, 3,273 deaths. There is a sulden drop thereafter in the age periods 20 and under 30, 30 and under 40, 40 and under 50, and 50 and under 60 years with 1,705, 1,531 1,350, 1,316 deaths respectively. Then comes the age period 5 years and under 10 years with 860 deaths, then the age period 15 years and under 20 years with 608 and lastly the age period 10 years and under 15 years with 470 deaths. 68.4 per cent of the total deaths occurred in persons under 40 years of age.

From Table H on page 98 it will be seen that out of 5,408 deaths of infants under one year as many as 2,178 deaths or 40.2 per cent occurred in infants under the age of one month. Of these 2.178 deaths as many as 1,413 deaths or 64.9 per cent were due to premature births and to diseases classified under nervous system. 26.1 per cent of the total deaths of infants occurred amongst children under one month of age; and this figure keeps fairly constant from year to year under ordinary conditions. 2,261 infants or 41.81 per cent of the total died between the age of 4 months and 12 months and the causes were mostly due to diarrhœa and dysentery and respiratory diseases. That such a large number of children should die from what are easily preventible causes from year to year indicates clearly the evil 'effects of insanitary and unhygienic conditions of domesticity and evironment upon the new born during a viable period of their life.

A full report on the Child-Welfare work during 1921 will be found on Child Welfare pages 39 to 54.

#### Causes of Mortality-Infectious Diseases.

Work.

Malaria caused 3.2 per cent of the total deaths as against 2.6 per cent forMalaria.1920 and 2.7 per cent for 1919, or expressed in ratio per mille1.2, 1.1, and 1.2 respectively.Annual Form No. X on page 66shows that 652 persons died of this cause against 560 in 1920.The staff employ-ed for anti malarial operations has been removed sinceApril 1921, except for asmall number of coolies for cleaning certain drainsconstructed for anti-malarialpurposes and some amount of reclamation workthat is being carried on by rub-bish ; both these are being done under conservancy.

There were 85 deaths from enteric fever during the year giving a ratio of 0.2 per mille as against 0.1 in 1920 and 1919. The mean *Enteric Fever*. ratio for the previous 5 years is 0.09. The number of deaths from this disease returned for 12 years is given in the table below :---

1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
42	52	42	51	66	75	49	47	45	52	66 x	85

Twenty-four deaths were registered from this cause,Kala-Azar.the corresponding number in 1920 and 1919 being 22 and 41respectively.

Two hundred and forty cases were reported in a sporadic form during the year of which 139 or 57.9 per cent proved fatal, against 57 *Cholera.* attacks and 27 deaths or 38.6 per cent in the previous year, the ratio being 0.3 per mille as against 0.04 per mille in 1920. The mean ratio for the previous 5 years is 0.5.

Incidence :--

1 1	1	1	1	14

Cholera by Sex and Age.

1921.		year of age.	1 to 4		E 40 0	3	10 45 14		,	at mot	1	ZO 10 ZA		00 to 3%	-	40 10 49	04 T V X	SO 10 94	60 and up-	00		.101al.	l of Males Females.	
	М.	F.	M.	F.	M	F.	M	F.	M.	F.	M.	F.	M.	F.	М.	F.	M.	F.	M.	F.	М.	F.	Total	
Cholera.	1		2	2	6	9	8	3	6		8	15	16	11	7	14	5	9	3	11	62	77	189	10

Small-pox was prevalent in the City in a sporadic form up to November 1921. During November a larger number of cases were reported Small-pox. If from a small area called Rope Godown Paracherry and by December of that year the disease spread itself to Kassimodu Kuppam and the adjoining parts, all in Royapuram among the fisherfolk. Simultaneously the disease showed a tendency to be spreading in Park Town amongst the poorer people classed as "homeless." Tinnevelly Settlement in 3rd Division and the poor classes of people living in and around Perambore and Purasawalkam Divisions came in for their share subsequently. Concurrently a number of cases have been imported from the neighbouring villages ground the city where small-pox was prevalent. The number of attacks during the year was 569 of which 180 or 31.6 per cent proved fatal. The annual death rate was 0.3 per mille against 0.2 per mille in 1920. The mean ratio for the previous five years was 0.6. Suitable preventive measures were taken and the disease was greatly kept under control.

There were 40 deaths during the year. The percentage calculated on the total deaths is 0.19 per cent or 0.08 per mille. The mean average for the previous five years is 0.2

The total number of deaths registered under Influenza was 110 for the *Influenza*. year against 250 in 1920 or 0.5 per cent to the total deaths. The mean average for the previous five years is 4.9.

> There were in all 4 attacks and 3 deaths from imported cases of Plague during the year against 11 attacks and 8 deaths in 1920.

Plague.

4,149 deaths were recorded from these causes. This represents a death rate of 7.9 per mille against 9.0 in 1920 and 11.3 in 1919 or

Diarrhoca and 20.47 per cent to the total

## Dysentery,

20.47 per cent to the total deaths against 21.8 per cent in 1920 and 21.5 in 1919. The largest number of deaths were recorded in

January, next in August, February, March and September. The mean ratio for the previous 5 years was 9.0.

3.510 deaths were registered from this cause or 79 deaths more than in General Respiratory diseases excluding Tubercle of the lung. 3.510 deaths were registered from this cause or 79 deaths more than in the previous year. The ratio is 6.7 per mille against 6.6 in 1920 and 7.4 in 1919. The mean ratio for the previous five years was 7.2.

Tuberculosis including Tubercle of the lung. 957 deaths were registered under this head, a decrease of 40 deaths to the previous  $y_{ear}$ . The ratio is 1.8 per mille, the five year average being 2.2. The extent of the

prevalence of this disease cannot be measured from the death reports only. These latter are made mostly by the lay public. It is as much probable that a large number of deaths registered under other bronchial diseases and pneumonia may be tubercular in origin. In the absence of medical certification of deaths, it is difficult to say whether the disease is really on the increase, but the increasing work at the Tuberculosis Institute shows that it should be so.

1,971 to the total deaths were registered under the heading against 2,182 Diseases of the or 10 19 per cent in the previous year. Of these, 1,058 deaths were recorded among infants under one year of age against 1,253 in the previous year who were reported to have died of "convulsions".

The number of deaths certified by qualified medical men was 2,386 or 11.8 Certified deaths. per cent of the total number of deaths in the city. Of these, 535 were certified by private medical practitioners and 1,851 were certified by public hospitals.

322 applications were received during the year for extracts . f entries from

Extracts from birth and death registers. the birth registers, 381 from the death registers. Out of these, the number of birth extracts granted was 199 and of death extracts 301. In 130 cases extracts were not granted as the parties

failed to pay the fees. In 73 cases entries could not be found and the parties were informed accordingly. The fees collected during the year for such extracts amounted to Rs. 1,073-13-0.

Disposal of the dead and sale of land for tombs.

During the year 15,399 dead bodies excluding 1,136 still-births were buried and 4,869 were burnt. Lands for the erection of tombs were sold to 99 applicants and the amount realised by such sale was Rs. 805.

#### The Administration Report of the Port Health Officer,

Incoming Vessels.--499 vessels arrived here during the year from plague infected parts with 50,696 crews and 93,311 passengers against 495 vessels with 53,477 crews and 92,496 passengers of the previous year.

Out going vessels.—246 vessels with 25,818 crews and 16,132 passengers were inspected and granted bills of health during the year against 278 vessels with 22,618 crews and 54,500 passengers of the previous year. The decrease in the number of passengers that left the port in the year under report is due to a less number of emigrants proceeding to the Straits.

Epidemic and Infectious Diseases.—2 cases of smallpox, 2 cases of chickenpox, 2 cases of measles and one case of cholera were found in steamers that entered the harbour during the year under report. All these cases were sent to the Infectious diseases hospitals at Royapuram and Krishnampet for treatment. The necessary precautions were taken to disinfect the cabins and decks occupied by them.

The disinfection of bedding and clothing of deck passengers and crew landing and embarking from here is continued. The disinfection shed is in charge of a Sub-Assistant Surgeon and a nurse is employed for examining female passengers.

Rats on Steamers.-No unusual mortality was found on any of the vessels that entered and left the harbour during the year under report.

The Clayton apparatus was used once during the year for demonstration to the students of the Medical College, Madras.

#### VACCINATION.

The city is divided into fifteen combined Medical Registration Vaccination districts each under a qualified Sub Assistant Surgeon called the Medical Registrar-Vaccinator. There were 2 female vaccinators and 31 assistant vaccinators. The female vaccinators worked in ghosha and muhammadan quarters.

Vaccine lymph for the operations was obtained from the King Institute of Preventive Medicine, Guindy.

The total number of vaccinations performed during the year 1921 was 26,991 (17,099 males and 9,892 females) against 25 074 for the previous year.

The year was free from outbreak of smallpox in an epidemic form Total cases for which generally makes a large addition to total vaccinations on account of revaccination of contacts. The number of attacks from smallpox was 569 against 315 in 1920. Of the total operations performed in the city, 26,215 cases were vaccinated by the Corporation staff and 776 reported by the Medical officer in charge of the Penitentiary. Of the former number 16,459 cases were primary vaccinations (16,500 in 1920) and 9,756 were re-vaccinations (7,772 in 1920). Of the total number of primary vaccinations 15,806 were performed at the depots and 1,153 outside and of these again 161 were domiciliary vaccinations performed on payment of fees, the remaining being cases performed in infected localities and in slum areas.

The Assistant Health Officers and Medical Registrar Vaccinators verified Percentage of the results of vaccinations performed by them in 15,651 primary cases of which 14,144 were brought to the depots as required by the bylaw. Of the 15,651 primary cases verified 14,711 were successful and 940 unsuccessful, the percentage of success being 939 against 789 during 1920.

The Assistant Health Officers verified 9,065 cases. The percentage of successes in primary vaccinations and revaccinations of all cases verified including those reported by the Government Penitentiary, was 93.9 and 35.02 respectively, as against 78.9 and 34.9 in 1920.

Of the total number of primary vaccinations (16,459), 14,704 were among Vaccination of children under one year of age. The percentage of success in the cases verified was 93.7 against 74.4 in the preceding year. Of 14,704 children vaccinated under one year of age 10,472 or 71.2 per cent were born in Madras and 4,232 in moffussal The number of children under one year vaccinated was 27.9 per mille of population (census of 1921) compared with the same figure in 1920 and the number of them successfully vaccinated per mille was 24.9 against 20.3 in 1920.

The total number of births verified during the year was 16,252 againstof 15,536 in 1920. Of them, 3,066 or 18.8 per cent died during Verification births. the year, 3,354 or 20.6 per cent were reported to have the city (for 1920 it was 3,018) permanently left and 308 were not traceable at the addresses given in the birth counterfeils in spite of special efforts made for a closer observation of city births. Of the remaining 9,524, the number vaccinated was 8,749 or 53.8 per cent of births verified. Vaccination. was postponed in 745 cases against 810 in 1920. Of these, 184 were verified by medical practitioners and 370 by medical vaccinators and 191 had temporarily left the city. In the remaining 30 cases which were pending at the end of the year, the parents were warned to have the children vaccinated without delay. From enquiries instituted to find out the vaccinal history of 1,106 children born in the city but removed out of it before being vaccinated, it transpired that only 88 were. reported to have been vaccinated outside the city.

Hospital births numbering 4,888 were verified during the year. Of these, Hospital Births. 680 or 13.9 per cent were reported to have died, 944 or 19.3 percent were reported to have been permanently removed from the city and 1,391 were not traceable at the addresses given in the birth counterfoils. leaving 1,873 available for vaccination. Of these, 1.723 were vaccinated during the year. Vaccination was postponed on medical certificates in 15 cases, 72 children found sick by the medical staff and 51 had temporarily left the city. Vaccination was pending in 12 cases. As usual the number of untraced cases was large which in many instances was due to insufficient and incorrect addresses furnished by the medical officers in charge of hospitals, the percentage of untraced in 1921 being 28.5 against 29.6 in 1920.

The statement on page 99 furnishes information as to the number of births verified by the vaccination staff during the year 1921 and the number of children vaccinated before they attained the age of one year.

Out of 26,991 cases vaccinated, 22,027 were Hindus 1,971 Mahomedans, Analysis of the total according to religion. 2,827 Christians and 166 other religionists. The vaccination of other religionists was proportionately larger than that of any other class, the number vaccinated among them being 8.8 per

cent of their population, whereas the percentage among Christians, Hindus and Mahomedans were 6.2, 5.1 and 3.7 respectively. These figures cannot however be taken for purposes of comparison on account of the large variations in population of the communities referred to.

#### Five hundred and sixty nine cases of smallpox were reported during the

of Number smallpox cases treated in the two Infectious Diseases Hospitals.

year as against 315 cases in the previous year. Of these, 328 or 57.6 per cent of the cases were treated in the two Infectious Diseases Hospitals of which 41 cases proved fatal. 207 cases were treated in the Infectious Diseases Bospital, Royapuram, and

121 in the Isolation Hospital, Krishnampet.

Accurate information is not always available from enquiries made with

Vaccinal condition of smallpox cases.

regard to the vaccinal condition of smallpox cases. A certain number of cases of smallpox are reported after death and the Sanitary Inspectors who usually conduct this enquiry have to

depend upon the reports of the parent or relatives.

In judging the relative value of vaccination as a prophylactic against smallpox or as a means of reducing the virulence of the disease, much reliance could not be placed apon such vague and unverifiable information. Special attempts are being made to tabulate the information with regard to the vaccinal state of smallpox cases in the following form:-

Vaccinated within 7 years preceding attack with number of successful marks visible.	Vaccinated more than 7 years preceding attack with number of successful marks visible.	Never successfully vaccinated.	Vaccination history not obtained or uncertain.
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Out of 328 cases of smallpox admitted in the two Corporation Infectious Diseases Hospitals in 1921, 142 cases proved fatal, the percentage of deaths amongst the vaccinated being 6.5 as against 32.5 amongst the unvaccinated. There was no case of prosecution during the year for non-compliance with the bylaws under section 349 (26) of the Madras City Municipal Prosecution. Act IV of 1919. The fees for primary vaccinations at private residences under bylaw

No. 11 of the bylaws under section 349 (26) of the Act and for Fees. vaccination certificates issued, amounted to Rs. 307-8-0 which was credited to the Corporation.

vaccination during the year was and The cost of registration Rs. 37,364-4-5. Debiting half this amount to vaccination, the Cost of vaccinacost amounted to Rs. 18,682-2-2 and deducting from this amount the fees referred to in the previous paragraph, the

expenditure on vaccination was Rs. 18,374-10-2 and the net cost of each successful vaccination was Rs. 1-1-9 as against Rs. 1-3-7 in the previous year. The decrease in cost is due to the greater percentage of success obtained in the cases vaccinated than in the previous year.

tion.

#### In pursuance of G. O. No. 1271 L. Press (L. & M. Department), dated

Practical Training of first class vaccinator pupils. the 22nd December 1920, twenty-two first class vaccinator pupils were deputed for the first time by the Sanitary Commissioner, Madras, for practical training in vaccination work for

about six weeks from 21st March 1921 to 30th April 1921 in the Corporation vaccine depots. These worked under the immediate supervision of eleven Medical Registrar Vaccinators, and all of them were recommended for certificates of efficiency by the two Range Assistant Health Officers.

#### SANITATION.

Officers of Health Department.—In accordance with G. O. No. 475 M. Mis dated 1st April 1920 Rao Bahadur Dr. K. Raghavendra Rao, the present Health Officer, proceeded to England on combined leave for nine months from 3rd March 1921 to qualify himself for D. P. H. He returned to Madras about 10th November, and resumed charge of his office on 19th November, cancelling the unexpired portion of his combined leave. During the period of his absence Dr. C. Singaravelu Mudaliar officiated as Health Officer, having been recalled from leave. Dr. A Muthukrishna Reddiar, B. A., M. B. & C. M. was appointed to act as the Third Asst-Health Officer in the leave arrangement.

Administration .- For administrative purposes, the city was re-distributed into two ranges from 1st April 1921 each under the immediate charge of an Asst. Health Officer, the North Range comprising 1st to 15th division, and the South Range 16th to 30th Division. The general conservancy work of the city which was under the direct supervision of the Health Officer till 19th November 1921, was separated from the general sanitation work and placed under the immediate charge of the Senior Asst. Health Officer under the direct control of the Commissioner. For looking after the general sanitary arrangements of the city there were 15 Sanitary Inspectors each assisted by a process server for a set of two divisions with the exception of 5th, 6th & 7th divisions and the 16th division; the 5th 6th & 7th divisions were taken as one for administrative purposes and they were in charge of a Sanitary Inspector, while the 16th being very extensive had solely a Sanitary Inspector for it. The Sanitary Inspectors (Sanitary section) continued to do the work as per details furnished in paragraph 198 of the Corporation Code, Volume I. The work done under the several items are briefly summarised as below:

Water Supply.—The supply of water at the various sources was examined periodically by the Director of King Institute, Guindy, and reports on the analysis are received by this office. The construction of additional filters referred to in the previous report was in progress during the year and arrangements were being made to start experimental chlorication of the Red Hills supply. Attempts were made to extend water supply to cherries and hutting grounds as far as possible.

Latrines.—The total number of public latrines conserved during the year was 153 of which 52 were of flush-out type, 38 were masonry and the rest were sanded ones. The following latrines and urinals were constructed during the year.

Latrines.-(1) A latrine in Singara Garden Street, 2nd division, at a cost of Rs. 1,357.

- (2) A latrine in Sundaram Pillai Lane, (Purasawakam) 18th division, at a cost of Rs. 1 277.
- (3) A latrine in Sydenhams Road, 19th division, at a cost of Rs. 1,272 and
- (4) A latrine in Langs Garden Road, Pudupet, 20th division, at a cost of Rs. 847.

Urinals :-- (1) Nattu Pillayar Coil Street.

- (2) Audiappa Naicken Street, junction of Anna Pillai Street.
- (3) Audiappa Naick Street junction of Narayana: Mudali Street.
- (4) China Bazaar Road near Flower Bazaar Police Station.
- (5) Wall Tax Road junction of China Bazaar Road.
- (6) Triplicare High Road junction of Mufta-runissa Begun-Street.
- (7) Ellis Road, junction of Nallathamby Chetty Street, and
- (8) Peters Road, junction of Jani Jahan Khan Bahadur Street.

Building Regulations:--Plans accompanying applications for crection, re-erection and repairs to buildings were generally received in the Works Department and the Sanitary regulations pertaining to buildings are enforced by that Department in all cases excepting those that require the special attention of the Health Department. These regulations are embodied in a set of building bye-laws which the building Overseers apply as much as the Sanitary Inspectors. In cases however where the staff of the Health Department find during their inspection that an insanitary house is under construction the plan concerned is called for from the Works Department and scrutinized, and necessary advice offered.

Control over waters etc:-Under Section 267 of the Act, 8 cases were prosecuted during the year, 5 convicted, and 3 withdrawn. In many instances the cases prosecuted by the Sanitary Inspectors became futile in consequence of the defaulters furnishing incorrect addresses, just escaping punishment from prosecution. To effectively control fishing in Cooum, the aid of the Commissioner of Police has been sought for to direct the constables on duty to bring to book the defaulters and put a stop to the nuisance arising out of fishing. It may however be pointed out here that reclamation with crude rubbish against which so much wa<sup>8</sup> written in the report for 1920 is still being continued in a number of places under the conservancy section.

Abandoned lands, Untrimmed edges etc.—Sections 269 to 271.—27 notices under these sections were served of which 18 were complied with after prosecution and 8 were convicted. Owing to the absence of the defaulter 1 case was pending.

Insanitary Buildings-Sections 272 to 277:-As usual house inspections were made by the Sanitary Inspectors, during the year under report with a view to rectifying sanitary defects. In 228 cases prosecutions were instituted; in 133 cases they were complied with & 76 cases convicted with a fine of Rs. 274-S-0 and the rest of the cases were withdrawn. The causes that led to the withdrawal or cancellation of the notices referred to are due to either (1) death of parties or (2) change of ownership.

Cherries & Hutting Grounds.—The Corporation have appointed a Committee to inspect the cherries and hutting grounds with a view to improve the sanitary conditions of these places by the erection of latrines, water taps & bathing places. A cheri register is maintained by the Divisional Sanitary Inspectors & the defects noticed are reported periodically for necessary action to be taken thereon.

Cattle-yards & Cowsheds etc.—Section 287.—During the year under report there were 717 cattle-yards in the city owned by private individuals. In 20 cases unconditional licenses were issued and licenses subject to carrying out of certain sanitary improvements within a specified time were granted in 674 cases, while the remaining cases were pending disposal at the close of the year.

Prosecutions were instituted in 230 cases for not complying with the conditions of the license. In 72 cases the parties were convicted and fined Rs. 283-1-0 and 151 cases were withdrawn.

The model cattle yard at Basin Bridge continued to be maintained efficiently. In addition to the milch cattle that remained at the beginning of the year 103 milch cattle including cows and she-buffalows were housed therein during the year, and 122 were taken away or sold leaving 175 at the close of the year; the amount collected by way of rent for rooms for storage of fodder etc was Rs. 568-8-0.

In view of the large numbers of cowsheds located in the congested parts of Chintadripet and Triplicane it is highly desirable that in the interests of public

7

health model cattle-yards enough to accommodate about a hundred animals are constructed by the Corporation m these localities.

Due to the strenuous efforts of the sanitary staff, picketting of cattle in streets, was greatly minimised, and in many cases the assistance of the police was sought for.

Stables-Section 282.-120 applications were received for licensing of hack stables; of these 3 were refused, 4 were granted unconditional and 110 conditional licenses, the remaining 3 pending disposal at the close of the year. Prosecutions were instituted in 462 cases and in 289 cases the parties were convicted and fined the amount of fine collected being Rs. 967-6-0.

In regard to certain stables in Post Office Street, which are used as dwelling places also by syces, the owners thereof have been served with notices and the matter is before the Standing Committee (Health).

Cart Stand.—The Elephant Gatecartstand is the only one managed departmentally. The right of collecting rents and fees from the cartstand and the bazaars attached thereto was sold in auction for Rs. 7,800 for the official year 1921-22 as against Rs. 9,100 for 1920-21. The highest bid in the previous year was due to competition among bidders and though the auction was resold thrice better bid for the year under report was not obtained owing to a clique amo g bidders. Much difficulty was experienced in the matter of collection of instalmenfrom the contractor and it was even considered whether it would not be advisable to undertake the collection departmentally by the Revenue Department for the year 1922-23.

Industries and factories.— Sections 237 to 289—The places where dangerous and offensive trades were carried on, viz: wash-houses, skin godowns, bone stores etc, were continued to be effectively supervised and controlled by the sanitary staff and the sanitary conditions of these places were consequently greatly improved.

Brick and Lime kilns.—In addition to the Government Brick Kiln in Poonamallee High Road there were 18 Brick Kilns, almost all the Kilns being scattered in the outlying divisions of the city. There were 28 lime kilns and these were similarly situated. As the smoke emanating from these kilns are injurious to the surroundings of the locality, strenuous efforts are taken to locate these kilns as far away from human habitation as possible. The Government Brick Kiln in Poonamallee High Road still exists but the manufacture of bricks has been stopped.

The fumes and dust arising from the lime kilns here are really very irritating and are bound to cause great inconvenience and discomfort to the inhabitants in the neighbourhood. Oil Mills.--144 applications were received during the year for licensing of oil mills of which 22 were granted unconditional licenses and conditional licenses in 118 cases while 4 were refused on sanitary grounds. These mills are situated more or less in the midst of residential quarters and the nuisance caused to the surrounding locality by the noise produced by the working of the mills can more easily be imagined than described. As a step towards putting down this nuisance it was proposed to shift first the Triplicane oil mills to the land in Lloyds Road between Buckingham Canal and Barber's Bridge Road, 28th division, but the proposal is pending for want of funds.

Applications were received for four oil power mills and conditional licenses were granted in all the four cases.

Paddy boiling.—Of the 329 applications received during the year for licensing of paddy boiling places, conditional licenses were granted in 209 cases and in 120 cases unconditional licenses. This business is at present restricted to certain parts of Madras, viz: Tondiarpet, Perambur and Purasawakam. From a comparison made with the previous report, it will be seen that all possible steps were taken to limit the number of licenses for paddy boiling houses as the proximity of house latrine to the paddy boiling places and the existence of pot wells therein and the want of pipe water supply in such houses lead to insanitation in the process of paddy boiling.

Aerated water factories.—There were 31 applications received during the year of which 4 were granted unconditional licenses while the remaining 27 conditional licenses which demanded sanitary improvements within a specified time. Frequent and vigilant inspections were made during the year by the sanitary staff with a view to avoid as far as possible sale of impure and unwholesome water. Entire improvement in this direction caunot be achieved unless and until the proposed Chemical and Bacteriological laboratory is established and worked.

Bake-houses.—There were 63 bake houses in the City. Of these 8 were granted unconditional licenses while in 55 cases licenses were granted subject to the fulfilment of sanitary conditions. As one of the conditions of the license, it is quite essential that the employees of the bake houses should produce health certificates from a Registered Medical Practitioner. It is also a condition that chewing betel nut or tobacco or spitting on the floor or otherwise fouling the place is completely avoided by bakers while at work; the sanitary staff inspected these bakeries regularly and systematically.

Sweet-meat bazaars and coffee hotels.-261 applications were received during the year of which 5 were rejected. Licenses were granted unconditionally in 30 cases, while 226 cases were granted licenses subject to certain conditions. In majority of the cases it was found that these bazaars where sweet-meats were manufactured were also used as dwelling places and necessary steps were taken as far as possible to avoid places where sweetmeats were prepared, being used as dwelling places as well. It could not be said that the sweets and the articles prepared at the sweet-meat bazaars and coffee hotels are pure and unadulterated. A great difficulty is experienced in getting glass cases put up; and even where they are, a wide gap is left on one side with the result that flies and dust do get access. In some cases glass panes are broken. Legal enactments alone cannot be expected to achieve wholesome results in such cases where individual effort and good will are absolutely needed for the protection of food articles from contamination. The bylaws framed in respect of premises where articles of food are made and stored, were prepared and are under consideration of Government.

Ice factories.—There were only two Ice factories in the city run by private individuals. Conditional licenses were granted in both the cases.

Dhobikhana.—There are two dhobikhavas in the city maintained by the Corporation, one at Chetput and the other at Robinson Park each being supervised by the Divisional Sanitary Inspector in regard to sanitary arrangements of the same. The collection of rents and fees from the dhobies of the Chetput Dhobikhana was transferred to the Revenue Department during the early part of the year 1921. As the two dhobikhanas are quite inadequate to meet the demands of the city, Government has been requested for making over to the Corporation the big plot of Government land situated opposite to Purasawakam Pumping station for construction of a dhobikhana for the district covered by Perambur, Chulai, Purasawakam and Vepery and the matter is under consideration of Government.

Under Section 287 of the Act, 97 applications from dhobies were received during the year of which 2 were rejected, 30 were granted unconditional licenses and 66 conditional.

Bathing fountains.—In addition to the existing fountains in the city, 7 new bathing fountains were constructed in the places noted below, where their need was much felt thus improving the sanitary condition of the locality.

(1) A bathing fountain with four taps in Malayappen Street, 10th division.

(2) A bathing fountain with two taps in Audiappa Naick Street, 13th division.

(3) A bathing fountain with 4 taps in Chucklers' Hutting ground, Krishnampet, 28th division.

(4) A bathing fountain with four taps in Mylapore Burial ground, 28th division.

(5) A bathing fountain with one tap in Madava Perumal Coil Street, in 28th Division.

(6) A bathing fountain with four taps in Bheemanpet Village, 29th division, and,

(7) A bathing fountain with 8 taps in Linghi Chetty Street, 7th division.

Slaughter Houses .- In the slaughter houses maintained by the Corporation in Gantz Road, sheep, goats and cattle are slaughtered and pigs at the Pen at DeMellows Road. The Superintendent of Slaughter Houses with an assistant is in immediate charge of the slaughter houses. The number of sheep and goats slaughtered during the year was 370,101 and the number of cattle was 16,683 and pigs 1,673. The seven small bullock vans and the seven motor vans continued to work, but owing to their going out of order now and then much difficulty was experienced in the distribution of carcases etc, to the various markets and stalls within the city. It is proposed to replace the old motor vans by new ones. The total amount collected by way of fees for vans and baskets amounted to Rs 4,073-4-6; the right of collecting rents and fees for the use of slaughter houses was as usual leased out and the total fees under the various heads including that of delivery of carcases and removal of blood amounted to Rs. 80,398-4-6 for the year 1921-22 During the year permission was granted free for the slaughtering of sheep, goats, cattle and pigs in private houses on occasions of religious ceremonies and the number so slaughtered was 8 cows, 1334 sheep or goats and 4 pigs. During festive occasions 1,407 sheep were slaughtered by private parties at their residences and the amount collected at 2 as per head slaughtered was Rs. 175-14-0. To avoid sick animals being slaughtered for food, it was proposed to establish a sheep and cattle pen where sheep and goats brought for slaughter should be inspected and passed for slaughter and the proposal is under consideration. To ensure early and easy obtaining of meat for the southern and northern parts of the city proposals for the construction of additional slaughter houses were under consideration at the close of the year under report.

Illicit slaughtering. - The sanitary staff continued to inspect markets and meat stalls with a view to detect cases of illicit slaughter. There were applications from butchers from places outside the municipal limits for permission to bring the meat for sale in the city and they were told that there would be no objection to their doing so, provided the carcases for sale were made to bear the stamp of the moffussil municipality.

Milk trade .--- Under section 299 of the Act, it devolves on the sanitary staff to regulate the milk trade within the city and to issue licenses. Bye-laws

relating to this are under consideration and only after their sanction, adulteration of milk could be prevented. The Chamical laboratory is a *sine qua non* for the efficient control of the water supply in the city.

Markets, public and private, butchers' shops etc.—The Moore market and the Smithfield market are the only two public markets within the city. The right of collecting rents and fees from the latter was as usual leased for the year 1921-22 and the highest bid amounted to Rs. 2,450. The collection of rent from the Moore Market was, as usual, done by the Revenue Department.

These two markets were kept in a sanitary condition during the year.

There were 44 licensed private markets in the city and the amount collected by way of license fees was Rs. 4,100 during the year.

Conditional licenses were granted to all the 42 markets and the Sanitary Inspectors inspected the markets to avoid overcrowding of stalls and to prevent occupation of gang ways.

Vegetable markets.-In addition to the three vegetable markets in the city, viz: Macdonald market in the 7th division, Kothwal market in the Sth Division, and the Bashyam Iyengar market in the 29th division, proposals were made to construct as many vegetable markets in suitable places in the city and the matter is engaging the attention of the Development Committee of the Corporation. To prevent the sale of vegetables on the sides in Rasappa Chetty Street and in Wall Tax Road it was proposed to install a market in Wall-Tax Road near the cart-stand.

Inspection of places for sale of articles of food etc.--(Sections 311 to 317)--This work al o forms one of the duties of the Sanitary Inspectors. It cannot be believed that there could be under the existing conditions in the absence of sufficient statutory powers, much of control at goods stations. In fact, early experience has been that the two food inspectors once employed rendered little or no useful service for the Corporation in the absence of elaborate statutory powers.

The Divisional Sanitary Inspectors have been and are taking action runder Sections 311-315 of the Act.

Laboratory articles have been obtained from Messrs Baird & Tatlock & Co. Ltd., London and after erection of a gas plant the installation of a laboratory will be complete. The matter is still pending the decision of the Corporation Disposal of the dead. During the year under report, 87 licenses have been issued to Vettiyans or grave diggers at the various burial grounds in the city, the amount thus collected at Re. 1 per grave digger was Rs. 87. There were general complaints from the public in regard to the exorbitant price for cowdung cakes, firewood etc., demanded by Vettiyans attached to burial and burning grounds. To avoid such complaints and to systematise the sale of cow-dung cakes, firewood etc., a data was fixed, to be tried as an experimental measure at Washermanpet Burial Ground. The system has been found a success and is being extended to the other burial and burning grounds of the city as well. To improve the conditions of the burial and burning grounds it was resolved at an adjourned general meeting of the Council held on 21st October 1921 that the Health Committee be requested to submit proposals for effecting necessary improvements including facilities for bathing in the various cremation grounds in the city and the matter is receiving the attention of the Committee.

Disinfectants :--Hycol was the disinfectant contracted for during the year with Messrs. Alex Hussam & Co., Ltd., Madras. The stuff was very sparingly used, and while Chloreid powder that was also in stock was so rarely used in spite of several circulars, and until in fact some quantity of it deteriorated in quality.

Lethal Chamber.—In the two Lethal Chambers set apart for the destruction of stray dogs, 4 560 dogs, 4 056 bitches and 15 pups were caught and taken to the chambers for destruction during the year, inclusive of 207 dogs and 196 bitches that remained at the beginning of the year. The dogs are usually retained for 3 days so as to give an opportunity to the owners for claiming them. Of the number caught 424 dogs and 204 bitches were claimed back and 3,925 dogs, 3,663 bitches and 15 pups were killed during the year leaving a balance of 211 dogs, 189 bitches at the commencement of the year 1922. The amount recovered from the owners by way of feeding charges of the dogs while in dogs-house was Rs. 175-12-3.

The Zoo.—Owing to the retirement from May 1921 of Mr. Nicholas, the License Officer under whose direct control, the People's Park and the Zoo were placed, the supervision of the Zoo was transferred to the Health Officer while that of the People's Park to the Engineer. A report on the working of the Zoo and the expenditure incurred on that behalf is embodied in the Administration Report of the Corporation of Madras for 1921-22.

Hospitals and Dispensaries.-In addition to the 6 dispensaries maintained by the Corporation at the beginning of the year, another dispensary was opened about June 1921 for Vannia Teynampet where the need was much felt. As these Corporation dispensaries are of immense help to the public, both rich and poor, the Council was pleased to sanction a further allotment for opening in the succeeding year a dispensary where it is much required.

Infectious Diseases Hospitals :- There are two hospitals for the isolation and treatment of persons suffering from infectious diseases in the city, one situated at Royapuram and the other at Krishnampet. Each hospital is in charge of a subassistant surgeon with a staff consisting of two nurses, a compounder and the necessary attendants. The number of beds available is 60 in the Krishnampet Hospital and 80 in the one at Royapuram, but in times of epidemics, we are obliged to make provision for more beds even to the extent of overcrowding patients. The average daily number treated in these hospitals is 11.2

At times, especially when children are admitted, one or two contacts also are taken in for purposes of segregation and observation. The following table shows the total number of admissions ctc. during the year in each hospital and the chief diseases-treated as compared with the preceding year :--

	]	Krisł	namj	pet H	ospita	al.	6.91-	Roya	pura	n Ho	spita	l.	
Name of Diseases,	101	1921	L		192	0		192	1		1920	)	10
altP as but =	Potal No.	Total died.	Death rate.	Total No.	Total died.	Death rate.	Total No.	Total died.	Death rate.	Potal No.	Total died.	Death rate.	
Cholera	45	21	46.7	32	7	21.8	81	25	30.8	17	5	27.7	arve
Small-Pox	121	16	18.2	75	9	12.0	193	29	14•08	110	18	16•3	2.57
Chicken-Pox.	88			74			33			36			10
Measles	26			63			8			20			- ne
Plaguo	4	3	75-0	8	6	75.0							
nfluenza	15	1	6•7	17	1	5.8	2			9			
Dysentery	1			3									
Diarrhoea	6			4									
Pneumonia	6	2	38.3	2	2	••				4	1	25.0	
Mumps	8			3			5			6			
All other diseases	8			15	2	13.3	52			33	5	15•15	
l'etanus	1												
Total	829	43	13.07	296	27	9.12	374	54		235	29		

Improvement to buildings:-During the year under report, a masonry platform similar to those in existence at Chetput Dhobykhana was constructed at the Krishnampet Hospital for the use of the dhoby working there. Besides, two rooms for servants attached to the hospital were erected in continuation of the existing servants' quarters. The situation of these hospitals cannot be said to be ideal and the construction of the new up to-date hospital is not materialized yet. The Kishnampet Hospital needs however early extension. This hospital is under telephonic communication and there is further a motor ambulance for conveying cases of infectious diseases to the hospitals, for which no charge is levied.

Corporation Dispensaries.—In addition to the already existing Corporation free dispensaries at the various parts of the city viz., at Washermanpet, George Town, Vepery, Kilpauk, Chintadripet and Triplicane, the Corporation at the instance of M. R. Ry. Rao Bahadur (now Diwan Bahadur) G. Narayanaswami Chettiar Avargal sanctioned the installation of an additional dispensary and it was opened at Vaunia Teynampet during June 1921. Each dispensary is in charge of a Sub. Assistant Surgeon with the necessary attendants. As the Corporation proposed to appoint its own Sub Assistant Surgeons to the dispensaries at Washermanpet, Chintadripet and Vepery, the Sub Assistant Surgeons lent by Government to the Corporation to these dispensaries were taken back to Government service on 1st August 1921. The following table shows the total number of patients treated during the year as compared with the preceding year:—

231 143	11	Total No. of o	cases treated.	tions p	opera- erform- ed.	
Name of Dispensary.	150	1921.	1920	1921.	1920	Remarks.
Washerman pet <sup>a</sup>		36,059	34,587	1,159	1,111	in the second se
George Town		38,474	28,383	619	540	The Office of the Medical Registrar- Vaccinator also is held in this build-
Vepery (Baliah Nai in Dispensary)*		37,626	40,401	1,789	1,361	ingDo
Chintadripet*		40,066	36,468	1,220	1,083	Do.
Kilpask <sup>a</sup>		14,528	8,586	341	192	Do,
Triplicane		23,664	16,050	1,085	784	Do.
Teynampet	And a	10,400	· ····	152		B in marriell

N.D.-The dispensaries marked with asterisk are located in buildings vested in the Corporation, while the rest are in buildings rented for the purpose.

These dispensaries are very popular institutions and afford medical relief " to a large number of people in and about their respective location. The diseases ordinarily treated are fevers especially Malaria, Diarrhoea, Dysentery, Pyrexia of uncertain origin, diseases of the ear, diseases of the skin, Influenza, Ulcers, etc., Minor surgical assistance is also rendered. The number of cases of fever treated in Washermanpet and George Town dispensaries is comparatively large, and more than 60 per cent of these have had a palpable spleen—an index of these parts of the town continuing to be endemic spots of Malaria. The largest average daily attendance is at Chintadripet Dispensary, possibly on account of the large number of poorer residents in this area and in the neighbouring locality. A brief summary of the work done by the various institutions and organizations as reported by them referred to in the list attached to G. O. No. 653 P. H. Mis. dated 10th June 1921.

The Madras Council of Social Service.-This organisation is in charge of slum areas or Cherries and maintains Day and Night Schools and Co-operative Societies. Medical relief to the people in the slums is as far as possible afforded and weekly lectures delivered on health subjects. In addition to these functions, the objects of this organisation are to train social workers for the city and to hold conferences for social workers annually with a view to discuss social problems. A brief summary of the social work carried out by the various institutions affiliated to the Madras Council of Social Service is given below :---

(a) The Health Brigade:-The object of this Brigade is to impart instructions to the people in Vernacular language in regard to hygiene, sanitation, and the cause and prevention of contagious diseases by holding health exhibitions in Madras and organising lectures. This brigade is in charge of Big Paracheri, George Town and Konditope cheries and the sanitary needs of the localities are looked after.

(b) The Triplicane Sociologicial Brotherhood :- The chief purpose is to study social problems and render social service. The main activities are (1) Maintenance of a n ght school in Parthasarathy Kuppam, Triplicane (2) Sanitation work through a Sanitary Committee by visiting streets and lanes of Triplicane and (3) Temperance Propaganda. It is also the idea of this Brotherhood to start a workman's Institute in Parthasarathy Kuppam.

(c) The Madras Temperance League:-The object of this league is to promote unity and co-operation among the various temperance organisations in the cause of temperance work, by giving lectures, distribution of temperance literature, etc.

(d) The Depressed Classes Mission Society:—The members of this Society visit cheries in general and specially  $\nabla$  yasarpady cheri where a day and night school is maintained.

St. John's Ambulance Association :- The duties and functions of this association are recorded in the Health report of the year 1920 and no additional function or work of a novel nature was done during the year. United Free Church Mission Rainy Hospital:-This institution renders valuable help to pregnant women and treatment of puerperal septic cases that attend the hospital.

Sri Kanyaka Parameswari Devasthanam Managing Committee :-- The Devastanam maintains an Ayurvedic Despensary in George Town where free medical help is rendered to all Hindus who resort to it. The total number that attended the dispensary during the year was 59,025, of which 28,437 were new cases.

Chengalraya Naicker's Technical and Industrial Institute and Orphanage, Vepery:—An Ayurvedic Dispensary is maintained by this institute where medical help is rendered, free to all patients irrespective of caste or creed.

Calavala Cunnan Chettiar's Free Ayurvedic Dispensary:--This dispensary is situated at the southern end of Tholasingaperumal Coil Street, Triplicane, and it renders free medical aid to all classes of people that attend. The total number of patients treated was 113,124 with a daily average of 310, the expenditure on establishment and medical charges being Rs. 6,418-7-6. The Madras Corporation contributed this year Rs. 100 to this dispensary as usual.

The Ramakrishna Mission Students Home, Mylapore :-In this institution, about 100 poor students receive free boarding and lodging. A medical ward with provision for 12 beds is attached to the Home and it is mainly intended for its students. The Home maintains a dispensary of its own wherein poor people of the surrounding locality also, are rendered free medicalaid. Lectures on health and sanitary subjects are now and then delivered.

The Madras Society for the Protection of Children :- The aims and objects of this society are clearly defined in the Health Report for 1920.

The total number of boys and girls rescued during the year, through various agencies was 63.

The strength of the society stood at 82 as against 73 in 1920. The amount of subscriptions and donations received from the public during the year was Rs. 4,494-8-0 as against Rs. 2,200-8-0 in the previous year.

The amount expended during the year was Rs. 5629-11-8 as against Rs. 5,720-11-11 during 1920; the balance at the end of the year was Rs. 1,799-15-11 as against a debit balance of Rs. 36-12-5 at the end of 1920.

The number of children in the Society's Home at the end of the year was 45.

The Madras Corporation pays a grant and it was increased from Rs. 250 n 600 for the year 1921-22.

Friend-in-need Society :-- The Society renders necessary help for the deserving poor of the Europeans and Eurasian Christians of every denomination by providing them with an Asylum in the Friend-in-need Society's Home, wherein aged, infirm, and destitute are lodged, clothed and supplied with the necessaries for health and comfort.

Poor Schools Society :- This Society has been affiliated to the Madras Council of Social Service and the objects and aims of this latter organisation are defined clearly above.

San Thome Despensary:—This dispensary renders medical aid to the general public, irrespective of caste or creed. It has been so useful for the past 48 years. It is in charge of a Sub-Assistant Surgeon with a qualified Compounder. During the year under report, the total number of cases treated was 6706.

Raja Sir Ramaswamy Mudaliar's Lying-in-Hospital, Madras:-The Superintendent of the Institution has forwarded a copy of the Annual Clinical Report for 1921. The Report comprises statistical details presented in tabular forms.

The number of cases treated during the year was as shown hereunder .--

### Obstetric.

Remained from previous year		 33
Delivered in hospital (including abortions)		 1515
Delivered on the way to hospital		 9
	Total	 1557

### Diseases of pregnancy and Gynaecological cases.

Remained from ]	orevious year		 5
Admitted			 585
		Total	 540
		Grand Total	 2007

The following institutions viz., (1) The North Madras Branch Health Association and (2) The Madras and Chingleput District Boys Scouts Association bave not furnished their reports in spite of reminders.

Friend-In meed Society: - The Summy moders documents for any for an an deserving poor of the Hampson and Emodian Obresiant of avery devous-saves by proveding them with an Asyling in the Priord-formed Strikety's Hama wherein aged) influencent destination are indeeded with and supplied with the noteboories for headed with comfort.

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San Thoma Despensary -- This inpanenty coulors activat attato the general public, irrespective of date or croad. Is that been at useful inf. the past 25 years. It is in charge of a feat-regiment burgeon with a qualified transponder. Therein, the year on the report the total simultator of the total simultator of the total was

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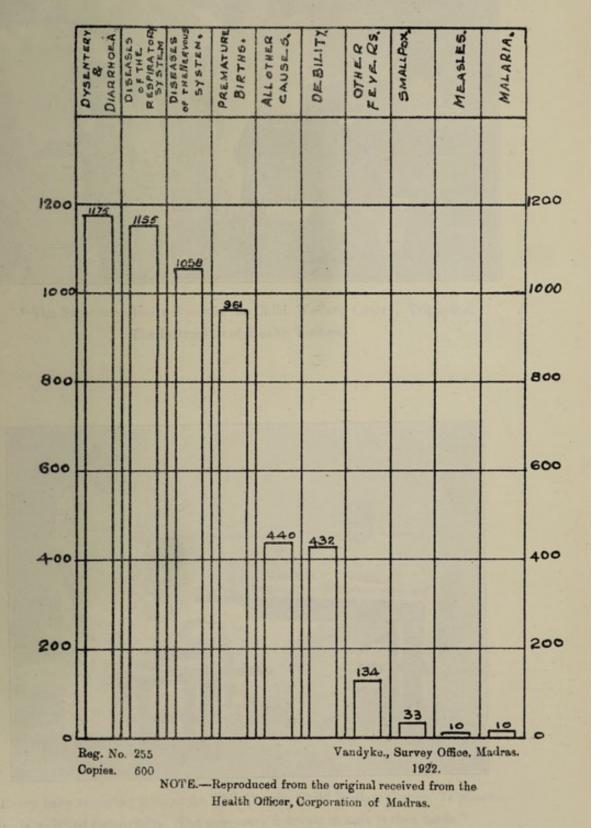
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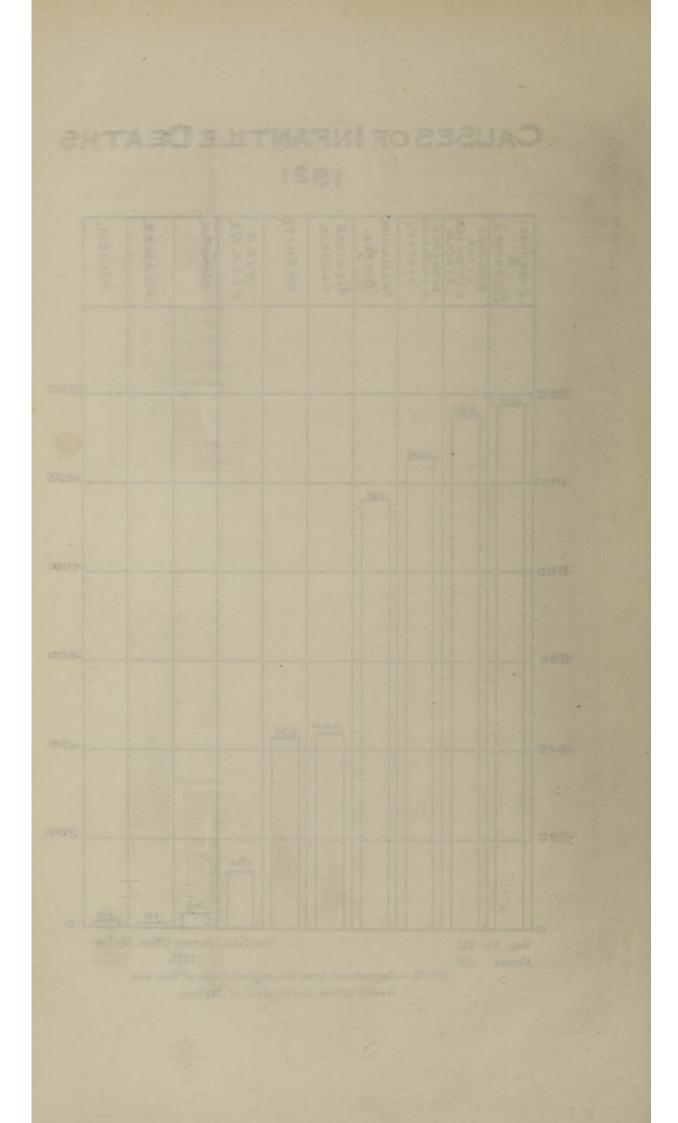
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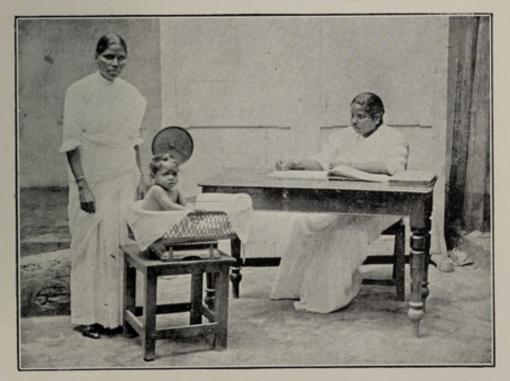
# CAUSES OF INFANTILE DEATHS







"The Superintendent's clinics at the Child Welfare Centre, Triplicane. The Instruction of Health Visitors."



" Every baby receivin; milk at the Milk Depots, Child Welfare Centre, Triplicane, is weighed fortnightly. The necessary increase in milk is then made."



## Annual Report of the Superintendent Child Welfare Scheme for the year 1921.

Review .- The year under review is one of great importance to the Child Welfare Scheme, since on the 16th of March 1921 the scheme, which was started as a temporary and experimental measure in September 1917, for a period of three years, was made a permanent institution of the Corporation, an act which bears ample testimony to the civic wisdom and far sighted policy of the Councillors, who took this great step to advance the welfare of the women and children of the City. The Scheme was first carried on in only a very limited area of the city, e.g., the old 16th 17th, 18th & 19th divisions. Since the work here was found to grow very popular, and to meet a real need of the mothers and children of the locality, new centres were opened in Washermanpet and Purasawakam, in May 1919 and October 1919 respectively. These centres served the new Municipal Divisions Nos. 1 to 4 and 16 to 21. Owing to financial difficulties, the Corporation was unable to open a new centre in George Town, which was already sanctioned in the Budget for 1920-21. Owing to difficulties of obtaining suitable houses in George Town, it was decided to have our own building on a plot of land belonging to the Corporation in Anna Fillai Street. The building of this centre in George Town, for which a cost of Rs. 20,000 had been sanctioned in 192) was not undertaken either. Although it did not happen during the year under reveiw, it may not be out of place here to mention that the long-looked for centre in George Town was opened in a rented building on the 17th May 1922. That the activities of the Child Welfare Scheme were much wanted in George Town is shown by the fact, that even during the first two months of its existence, nearly two hundred cases were conducted.

No new appointments to the staff were made in the year 1921, owing to the resolution of the Council that the expenses of the previous year were not to be exceeded in 1921. Miss. Kelandavelu, and Mrs. Rodrigues continued to be in charge of the Purasawakam and Washermanpet Centres respectively, and Health Visitor Gopi Bai, Resident Health Visitor in Friplicane Centre. I continued to be in medical charge of this centre till 5-1-1922 when Mrs. Fereiro, Lady Apothecary, was appointed. This step was found very necessary to efficiently cope with the rapidly growing work of the scheme in general, and of the Triplicane Centre in particular, which being the largest of all the centres, needed more than over a fulltimed medical woman to be in charge. The appointment of Mrs. Feriero was effected out of the savings of the scheme during the year, and entailed, in obedience to the resolution of the Ceuncil, no additional expenditure to the Corporation. This measure relieved me to a great extent for more efficient supervision and general working of the Scheme. The total number of infants (with, of course, their mothers) in the care of the Child Welfare Scheme, for supervision during the first year of their life, during the year 1921 was 4,112 as against 5,823 in 1920 and 1,173 in 1919. Of these 4,112 births, delivery hal been conducted in 3,060 by the staff of the Scheme, 256 were taken to the Hospital by the staff for various complications and 796 had been brought to us on account of complications, or for general oversight, after the barber woman had first conducted labour. The number of cases for each of the centres is as follows:

Triplicane	 1846	as against	1709 in	1920
Washermenpet	 1250		1053	,,
Furasawakam	 1016		1066	

The mill riots in the working area of the Purasawakam Centre during September 1921, necessitated the closing of the centre for the short period of eight days. This course had to be adopted because of the danger to which nurses were exposed in their rickshaws during the street affrays which were only too common then. It is worthy of note, and speaks for the popularity of the child welfare nurse, that more than once men from a mong the people involved in the riots volunteered to escort a timid nurse, and her still more frightened rickshaw man through a disturbed area to a woman in distress. I have myself personally paid visits to women, wives of mill labourers, in those times, and met with no trouble at all. The dispensaries opened in the centres have grown very popular indeed. Only children under 12 years of age and nursing and expectant mothers are treated in these. A total of 14774 new cases were admitted during the year (as against 10636 in 1920) of which 5474 were infants, 2533 were children under 5 years, 1203 children under 12, and 5564, expectant and nursing mothers.

Comparison of Infantile Mortality Rates.-The infantile mortality rate for the city for 1920 is 279.3 per mille as against 355.2 in 1918 and 329 in 1919. The rate for infants in the care of the Child Welfare Scheme is markedly lower, viz, 173.7 per mille, the rate for the working area of the scheme being 261.2. A word must be mentioned regarding the mortality rates of the different centres. While Washermanpet (a locality in which a great many poor people live under very insanitary conditions, e. g. Tiunevelly Settlement) the rate is 226.9 per mille; in Purasawakam (where the inhabitants are more enlightened) it is 169, in Triplicane it is only 137.9 for infants in the care of the Child Welfare Scheme. "What can possibly be the reason for this large difference when work is carried on in all these areas on the same lines" more than one reader may be tempted to ask. The reason is not far to seek, for Table 6 shows that while 22 and 14 children died in Washermanpet and Purasawakam respectively, of malnutrition, none died of malnutrition in Triplicane. Milk Depot.—Triplicane has been running a milk depot since October 1919. Maleutration without doubt is the chief cause of the larger number of deaths from all other causes in both Washermanpet and Purasawakam Centres. The infantile mortality rate for infants in the care of the Child Welfare Scheme, Triplicane, during 1919 i.e., when there was no milk depot, was 231.9. Can we have better proof of the great need there is for the better feeding of infants in this city? I have no doubt child welfare workers all the world over have wished as I have often wished that the Municipalities would rather cut down their grants for drugs for child welfare institutions than refuse to sarction the much-needed milk depot in the centre. A certain proportion of mothers is bound to be physically unfit to nurse their infants; some infants taken on our registers are motherless. 195 infants out of a total of 1846 were supplied with milk in 1921-a proportion of 10.1 per cent-by no means too large. Steps are being taken for the provision of milk in Washermanpet and Pursawakkam Centres.

The Health of our Mothers .- Talking of the death-rate and damage rate among infants, leads us naturally to think of the state of health of mothers in this city. Out of a total of 1,324 cases of labour conducted by the Triplicane Centre staff in 1920, 72 were still-born, 74 died during the first 10 days after birth. Out of the remaining 1,178 babies, 61 died during the first year of their hie from various causes such as Pneumonia Influenza etc., (Statement VI). More than twice as many babies therefore died before birth, and during the first ten days as after. In Washermanpet and Purasawakam, the number of deaths before birth, and during the first ten days, is just as high, although a great many deaths have also occurred during the later months, due to malnutrition and its ill-effects, i.e., susceptibility to all diseases as I have already pointed out. The figures for Triplicane centre therefore show more clearly how very low is the general standard of maternal health. Only infants inheriting a good amount of vitality can hope to survive the first few months of a new and difficult existence. But with so many of our mothers living in airless, sunless rooms, provided with one meal a day, as in a majority of cases, it is no wonder that our infantile death rate is so high. This rate would be more than halved, if the infants dying before birth, and during the first few days of their lives could be saved. And saved they may be, but only through the increased health and strength of their mothers. This is a large question; the social worker and the child welfare worker, the patriot and the statesman, all need to join hands to solve the problem.

The work of the Health Visitors.—Three trained health visitors and five probationary health visitors employed on the staff of the scheme in 1920 continued to work also in 1921. According to the resolution of the Corporation mentioned above, the number on the staff could not be increased although the growing number of infants and mothers on the visiting list demanded employment of extra staff. The

maximum number of houses that may be assigned to each health visitor according to the standard laid down by the Ministry of Health for England and Wales is 400. In Furasawalkam and Washermanpet centres, this number was stretched to 500 per health visitor, and in Triplicane it was stretched to nearly 600 per health visitor, these same health visitors each taking her turn daily either to assist me in the morning dispensary in the Triplicane centre, where the average daily attendance was 52, or to run the dispensary entirely by herself on days I inspected the other centres. An effort-but necessarily feeble owing to the great amount of work it involved-was made during the year to take on to the health visitors' visiting list, all infants born in the area of our work. This is bat right. For there seems to be no good reason why the infant at whose birth we were called to attend, in No. 22 X street should be privileged to receive monthly visits from the health visitor, while an infant, at whose birth a barber woman attended in No. 19 on the same street, should not have the same privilege. And yet how are the visits and instruction of the health visitor to be extended to the 20,000 (roughly) infants born yearly in this city, unless more health visitors were employed? The least number of health visitors needed for this city is at least 30, one for each municipal division. It may not be out of place to mention here that the women and children of the Fresidency are under a deep debt of gratitude to H. E. the Lady Willingdon, the President of the Madras Maternity and Child Welfare Association, for her gracious and understanding interest in their welfare, which has found expression among her other acts of kindness in the recent establishment by the Madras Maternity and Child Welfare Association of a Training School for Health Visitors in the city of Madras. Their thanks are also due, in no small measure, to the Councillors of the Corporation for their large-hearted policy in having made the Health School an accomplished fact by permitting the child welfare centres and the staff to be utilized for the training. The passing of this measure by the Corporation on 16th August 1922, after three years of anxious waiting and no less anxious correspondence, when the prospect for the improvement of the work and status of the health visitors in the city seemed dark and discouraging, is a landmark in the history of child welfare work in this part of the country. For it not only gives to the training we have given our own health visitors in the past the necessary official status and recognition, but also thereby serves to attract a good type of Indian women into the profession.

Dr. Balfour, Joint Secretary, Countess of Dufferin Fund, Viceregal Lodge, Simla, visited us in 1919 and wrote as follows:---

" This work would make a good centre for a training school for women health workers, which is much needed if the best results are to be attained."

She visited us again on 3-1-22 and wrote as follows:-"I visited the centre this morning with Dr. Vira Single and was very pleased to see the excellent and efficient manner in which the work is being carried on. The midwives' work, the mils centre, house to house visiting, and the baby-clinic are all in good order. I was very pleased to hear it is intended to open a health school in connection with these Corporation centres. This will make it possible to spread the good work being done here to the moffusil".

It is a good omen for the future of the Child Welfare Scheme of this city that the hope of so eminent an authority has been realised. The status and pay of Health Visitors is yet not all it ought to be; but we need to take only a step at a time and are deeply thankful for all encouragement received till now.

Mide-wifery-The midwifery service of the scheme has grown increasingly popular, as is shown by the fact that Triplicane has had 1,846 cases as against 1,324 in 1920, & Washermanpet 1,250 as against 1,066 in 1920. The staff of midwives is still too small. Experience has taught us that the average number of cases which may be left to each midwife for the year is 200. Although the staff strictly required according to the calculation has been employed, no provision for work has been made during the absence of nurses in times of sickness. Sickness has now and again interrupted the work of many of our midwives and more than once, we have been faced in all the centres, chiefly in Triplicaue, with the difficulty of having to answer more than one call (in Triplicane once as many as six) with no nurse at all available in the centre, all on duty having been out answering calls. In this connection, I may say that it is the duty of the authorities concerned to see that the health of nurses working for them is safe guarded. It is no light task which takes a nurse in sun and rain at all hours of the day and night, into the worst houses in the most insanitary parts of the city. Surely it is as much the object of the Child Welfare Scheme as it is of the Corporation in general, that the health and welfare of their women workers are in no way endangered in the carrying out of their duties. And yet, while a clerk of the lowest grade with no professional training, working in an airy room and under decent conditions, may look forward to earn a salary of Rs. 35 rising by annual increments of Rs. 3 to Rs. 50 and then by Rs. 5 to Rs. 75, a Nurse with a professional training (in the case of some of them, 3 years' training) working under trying conditions, in filthy ill-ventilated houses may look forward to only Rs. 35 p.m., no matter how long or how arduous her service in the Corporation may have been. There are only two places on the staff carrying salaries of Rs 40, and Rs. 45 p m. and these are usually held for health visitors under training. This salary of Rs. 35 needs to suffice for clean uniform, wholesome food and for part expenses of rickshaw, as the rickshaw allowance of Rs. 15 p.m., given to each nurse does not cover the total cost of rickshaw allowance for a month, the cost each nurse incurs being Rs 19-8-0 on an average. I would recommend very strongly that a uniform allowance of at least Rs. 30 per month be given to each nurse. It is gratifying to report that the educational and social

status of women recruited to the staff of the Scheme has been higher than in pastyears. The average educated Indian woman is beginning, no doubt, to look on nursing differently and it is hoped that the response from educated women will be even greater in future. Among our numbers at present we actually count one who has passed the School Fival Examination in English! Out of a total of 3856 puerperal cases altogether in the care of the child welfare staff, 26 died during the puerperium, and only one died from causes relating to child birth. In all other cases death was due to general disease, e.g., Tuberculosis Influenza, Heart Disease, Ankylostomiasis claiming 5, 6, 4 & 3 victims respectively.

We are very grateful to the Government Maternity, the Rainy, Victoria Gosha, Kalyani and Raja Sir Ramaswamy Mudaliar Hospitals for prompt admission and treatment of cases taken to them by the staff of the Child Welfare Scheme for treatment. 2925 cases were registered before labour by the Health Visitors. 1490 pregrant women were treated in all the centres for various ailments.

The Needs of the Scheme.—The needs of the scheme are many and varied. But first and foremost must be mentioned an ambulance car. Last year 256 cases of labour were taken to the various maternity hospitals and all of these at various hours of day and night in jolting carts. The difficulty of finding any conveyance at all at 1 A M. for a patient in danger and distress can quite well be imagined. Our next need in the establishment is telephonic communication between the doctors and the respective centres. In our early days we did boast of a cyclepeon. Yet now, but the memory remains in that we possess the old pump and lamp!

Stables for putting away the rickshaws of nurses on duty and of the dector during duty hours at the centres have been rented in Triplicane and George Town. Suitable stables are not available in Purasawakam and Washermanpet and the necessary accommodation needs to be put up at Corporation expense. It is very undesirable that nurses' rickshaws, about 8 to 10 of them, should be left on the high road as if it were for the double purpose of blocking traffic and of receiving all the rain in wet weather. Surely none envies the nurse who has night after night during the monsoon to find her way to the house of more than one patient, in a rickshaw soaking wet!

Last, but mentioned last purely for the sake of emphasis, is the need for additional staff. Any midwifery authority will testify to the fact that a staff of 9 nurses is by no means adequate for a centre which has already during eight months had the care of about 1500 mothers and infants. And these nurses are not always present either. Often and again as many as three are absent all at once owing to sickness. Nor is their work carried on in the limited area within the four walls of a hospital but over an area nearly 7 to 8 square miles. Once in a way urgent calls are also registered from outside this large working area and these have besides to be attended to.

The staff of the health visitors, as has been pointed out before, is still too small. The work of the health visitor has been proved to be as useful or more than that of the Sanitary Inspector and definite results have been shown to be due to her work, e. g., the rate of infantile mortality for all infants in the city is 279.3 per mille; but for infants visited regularly by us it is 173.7 and in Triplicane for infants visited by us as low as 137.9. Compare this with the rates for the municipal Divisions 6 to 11 (George Town) where the rate is all above 300 and in one above 500 per mille (Statement IX). Are the women and children of Madras who form much more than half the city's population, and by no means the less important members of the city, to be denied having at least one health visitor posted for each municipal division? Surely the duty of educating the mothers in our homes in healthy house-mar agement, in child welfare, and in mother craft generally is as important, and tends to improve the health of the city as much, as the varied duties of a Sanitary Inspector?

The George Town centre was opened on 17-5-22. The grant of Rs. 5000 per annum sanctioned for it does not permit of the appointment of a medical woman in charge. The need for such appointment is very great, owing to the large number of midwifery cases being attended to by this centre and owing to the high morbidity rate among women resident in George Town. The chief cause of morbidity seems to be malaria.

Our Visitors.—Among our visitors in 1921 were eminent authorities on child welfare. Dr. Balfour's remarks have already been mentioned above.

Dr. Wemyss Grant, M.D., Organising Secretary, Lady Chelmsford All India League for Maternity and Child Welfare visited the Triplicane centre on 28-2-21. Her remarks were as follows:---

"A visit to this centre would convince the most sceptical for the need of such work as is being carried out here, as the results of Dr. Virasinghe's and her assistants' work justify the money the Madras Corporation expend on such schemes and they are to be congratulated for being so advanced in a movement which is so recent all the world over. I have been greatly interested in all that I have seen."

Miss Gladys L. Broughton, Lady Advisor, Department of Industries, Delhi, visited us on the 5th March 1921 and said: --

"Dr. Virasinghe very kindly explained to me all the work that was being undertaken in the 3 centres which are now under her charge. I was very interested and feel convinced that she is doing work of the almost public utility." Dr. D. F. Cargel, M. D., D. P. H., W. M. S., Joint Secretary, V. M. Scholarship Fund, Viceregal Lodge, Simla, visited us on 13-1-21 and wrote as follows:--

" I am grateful to Dr. Virasinghe for all she has shown me this morning; it has interested me very much, and I have been much impressed with the progress I have seen." The encouragement given to the child Welfare Scheme, considered perhaps to be the least of the many and great undertakings of the Corporation (time will show that it is not so), by Councillors of the Corporation has been generous indeed. Several busy C uncillors have been interested enough not merely to visit but to spend a good long while in the centres, studying the working of the Child Welfare Scheme. Our visitors among these were:—

Rao Bahadur Dr. C. Natesan, Khan Bahadur Md. Usman Sahib, M.R.Ry. R. Madanagopal Naidu M. R. Ry. S. Venkatachalam Chettiar The Hon'ble Mr. T. Rangachariar, M.L. A., M.R.Ry. V Tirumalai Pillai, Md.Sadulla Badsha Sabib Esq & Dewan Bahadur G. Narayanasamy Chetty. Many an infant now in the care of the Child.Welfare Scheme will stand up in future years as no mean citizen of the city to thank the present Corporation for all they have done to make their Child Welfare Scheme. "So advanced is a movement which is so recent all the world over", as Dr. Wemyss Grant says.

Aid from Voluntary Workers.—The aid we have received to our official work has been much greater than in the early years of the Scheme. Even before the Visit of Dr. Wemyss Grant for the purpose of establishing a branch of the Lady Cheln sford All India League here in Madras, the ground had all been prepared and some work done already as stated in my report for last year, under the capable and distinguished leadership of H. E. Lady Willingdon and with the willing assistance of Mrs. Richards, Mrs. Lloyd, Mrs. Symons, and Mrs. Devadoss and many other ladies. Very valuable educative work is being done by the different "Baby Welcomes" opened in the city by the Madras Maternity and Child Welfare Association. The work of this Association in this city is carried on lines and in are shid out by an Informal Conference of Health Workers convened by Government on 24th October 1921.

It was agreed that attention in the first instance should be concentrated on child welfare work and that the operations of other agencies should be coordinated with that of the municipal centres, each agency carrying on its operation as an independent entity while at the same time giving to and receiving from the Corporation centres such help as occasion may require. The conference considered that the municipal centres working in co-ordination with other agencies might well be utilised as a school for training health visitors. It was proposed that with the consent of the Corporation, the Corporation Health centres should be used as a training school and that at the close of each year'straining, an examination should be held by a Board appointed for the purpose and certificates granted.

It was largely due to the efforts of this Association and of H. E. Lady-Willingdon, President of the Madras Maternity and Child Welfare Association, that the training school for Health Visitors has at last been opened. "The Baby. Welcome" (run by a band of public spirited women) is a splendid example of what voluntary effort, with the least possible assistance, from trained workers, can achieve for the women and children of our land. I say for all women, for she who gives in this cause benefits as much as she who receives as I have no doubt many of our voluntary workers will testify. The Child Welfare Scheme is also grateful to the Association for baby clothes supplied for needy infants through Mrs. Richards. It is also very gratifying to report that an Arya Vysia Maternity Centre for the benefit of women of the Vysia community resident in George Town has also been opened with voluntary subscriptions by M. R. Ry. S. Venkatachalam Chetty, Municipal Councillor. This Centre ought to be a great means of educating the women of this community in matters relating to child welfare and in making trained and skilled attendance during child birth and at other times of sickness more popular. Over and over again are we made to realise that it is not only poverty that lead to a high infantile death-rate, but ignorance, and in the 11th division, where a large number of Vysias live and whose women folk owing to strict caste customs are yet backward in education, the rate is highest of all divisions in the city, e.g., 522.5 per mille, 81 children having died in the first year of life out of 155 born. We wish the promoters of this centre all success in their laudable effort. At the request of Rai Bahadar B. Mopurappa Garu, Secretary Society for the Protection of Children, both the lady sub-assistant surgeon incharge of the Child Welfare Centre, Washermanpet, and I have paid regular visits to Dr. Varadappa Naidu's, Home for Children. Children from the home have also been treated in the centre for minor, ailments. This home deserves the support of every citizen of Madras.

Conclusion .- In conclusion, I would first wish to state that notwithstanding any financial stress the Corporation may have, our outlook for the future is hopeful. The permanency of the Scheme sanctioned in March 1921 was a great step, results of which will be reaped in no small measure hereafter. The total cost of the Child Welfare Scheme for 1921, was Rs. 48313-15-2. Taking this total cost for calculation on midwifery cases alone gives us Rs. 11-11-11per head. But this cost includes that of a milk depot, and of attendance on 14,774 mothers and children treated in the dispensaries attached to the centres; it includes the cost of visiting babies and instructing mothers for a year after birth. The cost per head is therefore much less, and it cannot be that any objection can be raised to the further extension of such cheap but efficient service to every mother and babe otherwise uncared for in the city. It is earnestly hoped that the two new centres yet reeded, i.e., an additional one for George Town and one for the southern end of the city will be opened before another official year is closed.

> L. N. Virasinghe-Chinnappa, M. B. B. S.

Superintendent, Child Welfare Scheme, Corporation of Madras.

STATEMENT I. Showing the cases of labour conducted by the Staff of the Child Welfare Scheme from January to December 1921 with 

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te.	.saabsaa Yon Maho.	614 1,232	1,140	606	3,281	tund edit	612	
Caste.	Mahomed.	614	110	107	831		561	in section of the
stia.	Total Cases.	1,846	1.250	1,016	4,112	3,828	1,178	681
l.	Taken over after barber women.	400	240	156	964	672	108	12
How Conducted.	Taken to Hospital.	122	92	42	256	203	87	54
Ho	By Nurses of the C. W. S.	1,324	918	818	3,060	2 953	826	550
	Al well a server				1921	1920	1919	1918
	Centres.	Triplicane	Washermanpet	Purasawalkam	Total			:
	Period.	From January to December 1921	and	Line P Slats 2 101 2 101 1 101 101	e alla della	A contraction A cont	and a second a second and a second a	A makes and a mak

### STATEMENT II.

### Maternal Morbidity (Puerperal) 1921.

-	Belimpaia.	Forceps.	A P H.	P. P. H.	in C. W. S. 5	After Barter	Sapracoemin.	Abn	Sent to state	Malaria.	Influenza.	Anaemia	Dysentery.	V. D H.	Pn=nmenia.	Bronchitis.	Unberculos is Diarrhoea.	T. P.	Lymphangitis.	Small-pox	Gonorrhees	Fuerperal Mania.	Adherent Placenta.	Placenta Praevia.	Retained placents.	Albuminuria.	Hae morrhoid.	Syphilis.	Filuriasis	Breast Ahscess	Prois psouterus
Triplicane	14	1 by	13	7		15		49	122	9	8	57	9	2	1	12		7		22	2		3	5	2	16	2	4	1	1	1
Washermanpet	5	LA 4	2	10		6	5	50	92	50	10	25	20	2	6	24	7	5	4	2	3	2	6	5	1(			-			
Purasawalkam	2		1	2	1	7	1	18	43	14	3	11	18	2	1	14	7	1	3		-	140	1	1	1				• • •		1
Total	7	5	16	19	1	28	6	117	256	72	31	93	47	6	8	53	14	- 13	17	4	- * .	2	10			16		14	1	 1	1

### STATEMENT III.

### Maternal Mortality (Puerperal) 1921.

g farfach ste se ges san	P. P. H.	Influenza.	V. D. H.	Tuberculosis Diarrhoea.	Tuberculosis	Pneumonia.	Small pox.	Ankylo Stomiasis,	Total.
Triplicane			2	2		1			5
Washermanpet		4	1	1	2	2	1	2	13
Purasawalkam	1		1			17		1	3
Total	-		4	3	2	3	1		2!

Note-Out of 4112 cases to which the Nurses of the. Scheme were called

256 were taken to Hospitals.

Deaths among remaining 3,856

13

21.

Percentage of maternal mortality for  $5^{\circ}/_{\circ}$ 

STATEMENT IV.

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

Triplicane, Washermanpet and Purasawalkam.

and the second		00								
Pregrant wor treated at th Centre.	10 T 45 (P 11 4)	826	232	43.2	100	1,490	1,040	522	116	10
аргартара антеризар		52	, 15	17	-	84	78	24.1	18	
Total attendation for the year		14,464	5,366	6,089	-	25,919	18,616	8,442	1,558	
Other causes.		3,650	194	1,808		5,652	5,715	253	37	alland.
Syphilis.		24	9	4	-	34	29	12	4	
Ear and eye disease.		273	20	90		433	308	87	8	
.nz reuftal		414	60	19		493	583	31	14	
Skin affection.	11 7%	604	220	263		1,087	874	250	55	
Alimemary	(Part)	1,283	1,160	690		3,133	1,160	139	27	
Respiratory.		1,515	710	494		2,719	1,912	295	22	
Yotal attendance (New cases.)		7,906	3,500	3,363		14,774	10,636	3,865	716	
.aəmoW	1	2,279	1,880	1,405		5 564	3,934	1,174	235	[ Int
ersey 21 of 5		624	390	189	-	1 203	1,855	316	52	in all
I to 5 years.		1 655	450	428			1,762	858	207	
Under one year.		3,348	780	1,346		5,474	4,079	1,017	222	1
		:	:	:		:	100	:	:	
1921						r 1921	1920	1919	1918	
anuary to mber 1:		:		:		<b>Potal</b> for	Do	Do	Do	1
From 1st J 31st Dece		Triplicane	Washermanpet	Purasawalkam			80			
	уеат. уеат. 1 to 5 years. 5 to 12 years. 5 to 12 years. (Yotal аttendance (Xew cases.) Везрітатог. Кеурійія. Сићет саизев. Варітатог. Сићет саизев. Сићет саизев. Сиће уса Сиће уса Сиће уса Сиће уса Сиће уса Сиће уса Сиће уса Саја саја Сиће уса Сиће уса	Сонструпти и сонструктий и сонствии и сонст	i. <sup>(1)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup> <sup>(2)</sup>	t. January 1921       t. January 1921       t. January 1921       to t	t January 1921     t January 1921       t January 1921     t January 1921       t Cember 1921.     t Under one       t Comber 1921.     t to 5 years.       t Conal     t to 5 years.       t t to 5 years.     t to 112 years.       t to 5 years.     t to 113 years.       t to 113 list.     t to 113 years.       t to 113 list.     t to 113 years.       t to 113 list.     t to 12 years.       t 1,346     t 1,353     604       t 1,346     t 1,363     t 1,464       t 1,346     t 1,465     t 1,533       t 1,346     t 1,563     t 1,533       t 1,346     t 1,563     t 1,533       t 1,346     t 1,563     t 1,533       t 1,346      t 1,464<	t. January 1921     t. January 1921       t. January 1921     to ber 1021.       cent to     to       to     to       time     time       t	t January 1921       te damary       te damary <tht damary<="" th=""></tht>	t January 1921       ee       t January 1921       t January 1921       t January 1921         t b       b       t January 1921       to 5 years.       year.         t b       year.       Total attendance.       Syphilis.       Junder one.         t b       5 year.       Syphilis.       Momen.       Syphilis.         t b       3348       1555       624       2.279       7.906       1,515       1,233       604       414       273       24       5,790       Syphilis.         t i.       780       450       330       1,360       7,106       1,515       1,233       604       414       273       24       5,650       14,464       5,5         t i.       780       450       3,934       1,965       3,363       494       690       203       60       414       273       24       3,565       1,464       5,5       3,565       1,464       5,5       3,565       1,464       5,5       25       3,565       1,464       5,5       25       3,565       1,44       1,5       25       25       25       25       3,556       1,456       1,5       25       25       25       25       25       3,556	t. January 1921       te definition       te definition       te definition       te definition         t. January 1921       te definition       te definition       te definition       te definition         t. Downeer       Under one       Total area       Total area       Total area         t. Downeer       3348       1535       624       2.270       7,906       1,515       1,283       604       414       273       24       3,650       14,464       550       414       573       24       3,650       14,464       52       82         mineusry       mineusry       1300       1,515       1,293       604       414       273       24       3,650       14,464       53         mineusry       780       4,30       3,506       7,10       1,160       220       60       70       6       194       53       6       <	Linnary 1921       ne       Nomen       No       No

			adje il hol pecar	No. of Street		-
		-	Number of living children traceable.	1025 685 801	2511	
	20.	-	Not traceable.	63 140 65	268	
	1g 19	-11	Total. deaths (excl ding still ding still. dirths.)	164 201 163	528	
	durin	1000	6 to 12 months.	20 78 41	184	
	born	ithin	8 to 6 months.	25 46 41	112	11
NT V.	ants	Deaths within	I to 3 months.	-45 60 47	152	T VI.
STATEMENT V.	ng inf		.szab 01	22 22 34	180	STATEMENT VI.
82	s amo		rutamər¶ nrod-llita	22 15 84	71	LS
	Ages of deaths among infants born during 1920.	-	rrod-ffing	50 25 	75	
	Ages o	3	Total Number o Cases taken.	1,324 1,066 1,063	8,458	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	T-4 1000	December 1920.	Triplicane Washermanpet Purasawalkem	Total	

# Causes of deaths among infants born in 1920.

			-
Number of living ohildren.	1025 685 801	2511	
Total deaths. (excluding (.sultified)	164 201 163	528	
N <sub>ot</sub> traceable.	63 140 65	268	
.aoitirtuulaM	14 22	36	
Bronchitis.		42	
Burns.	- 50	00	
Canses Canses	51 82 54	137	
Small-pox.	e 9 :	11	
Pyæmia.	:9:	10	
Syphilis.	2 14 6	22	
Enteritis:	18 6 28	52	
.nangara.	4 10 	14	
Pnenmonis.	10 35 26	12	
Died within 10 days.	22 23 4	130	and the second
Premature .nrod-llita	22 34	71	
Still-born.	50 25	75	
Number of cases taken.	1,824 1,066 1,063	3,453	
abur -	111	ц (,	
Lasterna and	Triplicane Washermanpet Purasawalkam	Total	

Triplicane, Purasawalkam Washerman-Centre, centre, pet. centre, 137-9 per 169-0 per 226-9 per mille, mille, 1921 ł Infantile Mortality in the City of Madras, Working area of C. W. Scheme For Infants in the care of C. W.S.1920280.4280.5329.01919355.21918355.41918355.41918355.419181918191819181919191919181919191819101910191119121913191419141915191519161917191819 528 Total live births in Scheme (infants traceable in the first year of life) 3039 : ... : .... ... ... Deaths among

STATEMENT VII

•

Visits paid by the staff of the Child-Welfare Scheme from January to December 1921.

Centre.	.co Ar whiter	Haalth Visitore	Lady Doctors	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		in non-	
Triplicane	19,576 15,087	16,685 16,160	483	
Purasawalkam	12,490	15,337	538	
Total	47,153	45,182	1,021	04
Visits paid to abnormal and difficult cases Superintendent (in all centres)	cases by the 338	131 131 1 252 208	Trate Inte	
F	Triplicane	Washermanpet	Purasawalkam	
Forceps 1 (By S	uperintendent) 4 (by La	1 (By Superintendent) 4 (by Lady Sub assistant Surgeon	liN	
Extraction of after coming head	Nil 2	(Do.) In cnarge.)	liN	
Manual removal of Adherent placenta	Nil [ 1 (by S	[ 1 (by Superintendent.)	1 (by Lady Apothecray in charge)	
	14 (by I	14 (by Lady Sub assistant Surgeon	0	

STATEMENT VIII.

Table showing details of all births in the Municipal Divisions in which the Scheme was working for one year ending with 31st December 1921.

1	T	total	8161	-	1	-	1	11	1	-	**	1	1							16-9
10		Percentage to total bircha.	6161	(1-		728.7	-	ed	in	n.t	T	-	F	12		1	1	10	-	
	-	bir	0261	9351		24.027	0.11	2.4	2.61	\$.00°	2.00	26-4	27-21	16-4	29-5	12.6	19-7	50.0	2445	21.3
	0	Perc	1261	419351	212	29.81	14.5	12.0	18.8	1.18	02.00	28 11	10 01	16.0	22.6	13.3	188	24.6		23.2 21.3 19.2
6	.Ie	oliqeo <b>H</b> ai b	No. delivere	373	-	764					652				130				-	1,334
	000	otal	8161		1						1		T		10	1			1	
	200	hs.	6161	140	-	8.80									112					53-9 56-0
8	0.0	ntage to births.	0261	57.8	0.19	R.Le	2.72	66.2	6.40	2.00	91.19	6-99	5.40	41-5	38.3	62.5	50.7	28-1	60-1	53-9
	1010	Percentage to total births.		41-2		44.1	7.99	80.8	00 0	1 20	835.9	54-7			1-14-				- 1	50.4
2		ed by barbe omen.		350	898	1,126	619	653	423	476	460	3.019 1	653	430	237	321	358	436	469	2,904
	800	tal	8161	02								-	T			1				
	200	to to	6161	1.6)		11							-		80	1	C	•		-9-9
0	30	birtha	0761	4		-14	4.	1-2	29.	20.0	4.4	2.41	14.6	3.0	0.1	8-6	1.6	6.4	4.4	3.8
	00	Percentage to total birtha.	1261	1-1-	100	1 2.	? <sup>1</sup>	2	60 c	24 -	4.1	2.1	4.01	6 03	5.2	13.16	1.86	3.1	5.4	4.6 .
5	11	ifang ya bel ndi vedio se seviwbim na	numpin pau	0.40	3	171	21		2	18	64	1151	46	25	32	08 .	13	24	47	267
	1	total	8161		1	-	-	-					1		-	10			-	11-9
-		5. to	6161		-	1 2.9							1				-			16-4 11-9
		births	036T	20-9	19.02	116-715	15.61	18.4	20-5	10-3	0.01	14.11	19-9	42.0	28.5	16-3	51.9	14-9	11-0	21.3
		Percentage birth		35-8		25.2	18.6	26.7	247	20	8 a	_			30.7			-		21-7
00		ended by arriwbian ar	No, att O orporatio	358	146	644	191	287	188	20	5	1 818			177		_		-	1,252
6	•	f births fro 31-12-1921.	Votal No. o. oi 1291-1-1	1,001	660	2,551	1,025	1,074	762	212	1,182	5.516	11.47	1.086	579	909	200	222	863	5,757
		į.		54 65	4 7		C16	117	118	1 19	1 20	2	100	Pe I	1 67	26	27	28	(29	
1		Municipal Divisions and work-	ing area.	tet Centre,					Contract	n Centre						antre.	5			
-		Municipal D	-	Washermanpet Centre.					0	I BIRGRWAKAID CODIFO.						Trinlicane Centre.				

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Note. (1) Total births in working area of Child Welfare Scheme 13,814

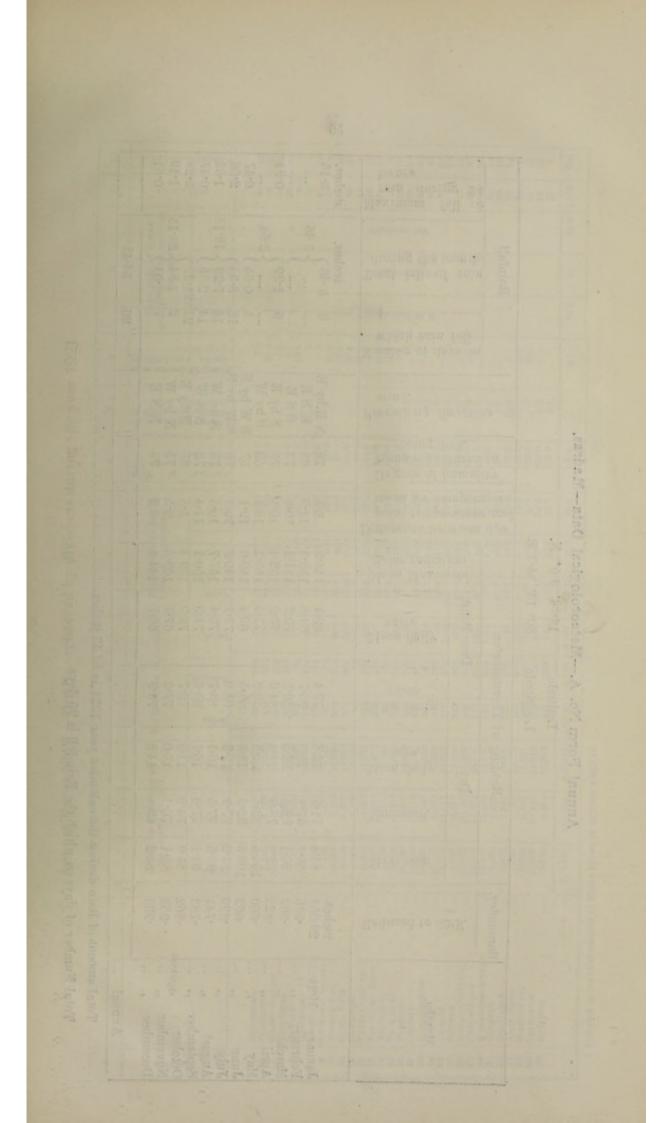
Cases brought to care of Child Welfare Scheme in this area 4 112.

Percentage in care of Child Welfare Scheme 29-3

(2) List does not include 678 cases conducted by Child Welwfare Sche ne Staff outside working area of Scheme.

Division No.	Live births registered.	Deaths under 1 year.	Infantile Mortality.
1	756	233	308.2
1 2 3	795	227	285.5
	947	271	286-1
4 5 6 7 8 9	637	211	331.2
5	232	106	456.9
6	301	105	348.8
7	346	135	390.1
8	126	60	476.2
	602	203	337-2
10	610	205	336.0
11	155	81	522.6
12	657	210	3196
13	537	202	376-2
14	103	35	339.8
15	522	155	296.9
16	935	206	220.3
17	1,007	291	289-0
18	715	150	209-8
19	783	211	269-5
20	1,109	254 1	229.03
21	626	150	239.6
22	659	169	256.4
23	1.090	291	267.0
24	1,032	257	249.0
25	547	113	206.6
26	572	132	230.8
27	676	180	266.3
28	729	216	296.3
29	815	205	251.5
30	566	144	254.4

STATEMENT IX.



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		nimum fa rain durin surod	inches. 3·13			16.0		0.47			0.47			18.0	
		do Ilad latoT u out znirub	inches. 5.46)	2546	(	1.99)	2.64	0-65)	-	7.29 / 18.18	2.55)	-	1.84 28.15	( +0.3	54-43
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	ide und	d fo eerged anglete sa Deing I	28	68	73	75									
pue e	enture	Difference bet point tempe mean air te	8.3	6.11	10.6	10.1	18.4	19.1	10.8	10.3	11.4	5.8	6.6	9.2	
		Mean Maxim Solar radiat	144-9	150.3	151.2	152.4	155-2	150.6	146.8	147.7	150.1	1394	149.6	144-4	
aeter	Dew Point.	Mean daily Valce	1.69	64-8	70-2	73-9	71-4	69-4	. 73.1	78-4	6-12	73-9	67.7	2.99	
Thermometer		Mean daily value.	4-77	2.92	80.8	84-0	8.68	88.5	83.9	83.7	83.3	2-64	77-2	75-9	
Reading of	Dry.	Mean daily range.	12.8	18.9	17.8	14.4 I	21.8	18.3	15.8	16.1	16.1	11-0	15-0	14-8	
B	I	.muminilli	71-6	67-4	72.3	78.0	82.8	82.2	6-22	2.22	0-22	74.9	1.02	69-4	
		.anmixsM	84.4	86.3	1.06	92.4	104.6	100.5	93.2	93.6	93.1	85.9	85.1	84.2	
Barometer.	Reduced to \$2°F.		inches.	-035	-862	.828	.660	-662	669.	147.	-783	-862	-983	-993	
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1000		Months.	1001	Zohmary 102	March	(i linu	ie	Inne "	Inly 31	Anomet. "	antember "	Atohar "	Vovember "	December ,.	Annual

Total amount of Rain during the calender year 1921 is 54 43 inches.

Total Number of days on which the Rain fell is 96 days.

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10	l-Livths.	ns	23 23 23 24 25 25 25 25 25 25 25 25 25 25	1.136
	irths revious	.feioT	Net available.	0.02
6	Mean ratio of births r 1,000 during previous five years.	Females.	Nit available.	11.17
	Mean ter 1,000	.sofaid	,eidelieva io N	0.00
œ	tere 1,000 of teres of the other of the other of the other of the other	Excess of addrift falugo T	259 113 113 113 113 116 116 116 116 116 116	1.0
1-	birebs over ter 1,000 of ion.			
9		Yamber born to gemeles	85.9 1265.5 1265.5 1265.5 1265.5 1265.6 1265.6 117.5 117.5 117.5 1107.5 10000.5	0.001
	per tion.	TatoT	362 873 873 873 874 874 881 881 874 817 817 817 817 817 817 817 817 817 817	
12	Ratio of Births per 1,000 of Population.	Formales.	262 267 285 287 287 287 287 290 286 290 286 286 286 286 287 417 287 417 287 417 287 417 287 417 287 417 287 417 287 417 287 417 287 287 287 287 287 287 287 287 287 28	0.00
	Ratio 1,000 o	Males.	362 3762 4125 264 179 337 337 337 337 347 337 367 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 457 357 56 56 56 56 56 56 56 56 56 56 56 56 56	000
	stered.	AstoT	7766 947 947 947 947 947 946 957 946 957 946 957 946 957 946 957 957 1000 7715 957 715 957 1000 1000 1000 1000 1000 1000 1000 10	
4	Births registered	Females.	2850 2959 2959 2959 2959 2959 2959 2959 29	101
	No, of B	Males.	257 257 257 257 257 257 257 257 257 257	00000
	g to	.fatoT	$\begin{array}{c} 20,891\\ 16,940\\ 23,777\\ 16,946\\ 7,789\\ 7,631\\ 18,066\\ 5,117\\ 18,066\\ 5,117\\ 15,646\\ 17,676\\ 17,676\\ 17,676\\ 17,676\\ 17,676\\ 17,676\\ 29,679\\ 29,679\\ 29,679\\ 20,666\\ 19,299\\ 20,666\\ 10,299\\ 20,666\\ 10,299\\ 20,666\\ 10,299\\ 20,681\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,682\\ 10,299\\ 20,$	# 00 0+1
3	Population according to the Census of 1921.	Femalos.	10,491 8,768 11,786 7,978 5,969 5,969 5,969 7,972 5,969 3,177 8,622 8,622 8,622 8,622 1,116 1,715 8,622 8,622 1,7725 7,966 13,967 11,716 10,186 10,186 10,183 10,10	0 20 000
	Population the Cen	Males.	10,400 8,536 11,922 8,536 7,032 9,970 7,102 8,953 8,953 8,953 10,075	
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\* Included in the total number of Births shown in columns 4 and 10

-Statement of Deaths by divisions during the year 1921. NI II L

	Mean ratio of Deathsper1,000	previous years.	.InioT	.eldeliava toX	44-7
6	a rat	g previo	Females.	lidaliaya toN	144
	Mean	five	.solaM	Not available.	424
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		Causes.	Females.	821002000000000000000000000000000000000	38.6
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	hs		Total.	1,207 978 978 865 885 885 874 772 815 865 865 865 865 865 865 865 865 865 86	90.908
9	o. of Deaths	registered	Fe- males.	414 475 509 475 509 218 218 218 218 218 218 218 218 218 218	0.660
	No. c	Loi	Males	408 408 608 608 508 348 198 347 447 447 444 444 444 444 444 444 390 303 525 504 451 303 525 504 451 303 2555 504 451 2505 2505 2505 2505 2505 2505 2505 25	18
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	rdin	f 192	Total.	20, 23, 16, 16, 16, 16, 16, 16, 16, 16, 16, 16	100 1
	Population accordi	to the census of 1921.	ales	10,491 8,363 7,755 59,61 59,61 59,63 1,7297 7,7297 7,7297 7,7297 7,7297 1,116 1,116 1,116 1,116 1,755 8,610 1,116 1,755 8,510 11,510 11,755 8,510 11,5100 11,5100 11,5100 11,5100 11,5100 11,5100 11,5100 11,5100 11,510000000000	
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4	Total Deaths registered during the year.	817 1,207	978 665	333	451 238	857 815	274	132	412	883	854 585	747	568	169	1,000	478	493	206	132	510	00000
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	July.	48 93	2.22	18	29	52	18	27 GF	83 0	59	20 20 20	45	40 20 20 20	36	20	322	34	24	00	36	
00	.eant	51 80	49	83 83	25 12	88	8	33	65	56	53	39	38	33	63	06	101	25	10	1 88	
	May.	56 101	649	50 FC	18 53	19	. 63	2.5	31	84	51	69	52	88	283	67	39	58	00	41	
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ALL DAY	February.	96 142	82	02.50	57	123	3	70	41	104	89 63	12	10	67	110	104	14	22	68	20	
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61	Districts.	Royaparam Tondiarpet	Washermanpet Kornkupet	Harbour Muthialpet	Katchaleswaranpet Kothawal Razaar	Ammen Kovil	Sowcarpet	Peddunaickenpet Trevelvan Basin	Esplanade	Perambur	Chulai Purasawakam	Vepery	Egmore Kilnank	Nungambakam	Chintadripet	Chonarteeswaranpet	Triplicane	Amir Mahal	Rovenstitt	Mylapore	
		- ME	₽M	HN	NX	100	5 00	2 H	2 a	202	04		a M	Z	OF	10	F	₹;	2 2	N	

Annual Form No. 1V .- Deaths registered according to age by divisions during the year 1921.

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030	10181	eelal	Semales.	Males.	Fenales.	Males.	Females	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	.səlamə'l	Males.	Females.	Males.	Females.
I Rayapuram		132	101 8	59	1 26	13 27	26	12	11 12	11 27	13	88 88	34	28	49	25	30.88	27	31	127	107
3 Washermanpet		143	128	88	87	18	24	14	15	13	17	33	39	88	34	22 SS	31	32	18	90	22
4 Korakupat 5 Harbour	::	124	54	18	283	10	00 ;	0.00.	000			14	17	18	13	12	1-0	101	000	25	01 4
6 Muthialpet 7 Katchaleswarannet	mannet	56	64 es	33	5 53	<u>s</u> ∞	2 10	000	0 W	6 x0	0 10	10 20	2 62	121	19	14	18	24	17	53	
8 Kothaval bazaar	Ar	38	24	17 81	13	7	17		- 1	m 00	915	10	38	39	36	36	18	16	28	12	13 91
10 Seven Wells	10	102	102	59	36	16	16	11	H	10	- 23	66	4	23.0	88	52	8	36	8	64	28
11 Sowearpet		44	37	65	9 44	4	20 e	00 ×0	14	2011	12 5	9 50	49 F	° 81	20	30	2 23	39	19	62 0	88
13 Trevelyan Basin	asin	121	18	.8.	12	14	12	6.	8 -	-	60	62	40	36	24	25	12	18	22	6.6	78
15 Park Town		28	9 22	14	51	° 21	. 8I	a ro	* *	10	10	20	58 F	. 89	187	35	35	38	10	20	63
16 Perambur		111	68	2	88	12	82	2	12	90	13	94 94	39	48	660	26	26	31	020	83	
17 Chalai 18 Parasawalkam		160	151	3 34	54	96	10	0 0	0 -P	x 4	P 00	101	20	54	16	212	17	32	18	64	69
19 Vepery	:	121	06	22	20	12	II	00 0	œ ;	00	18	100	22	29	26	28	53	8	61	55	69
20 Egmore 21 Kilpank	: :	133	121	88	46	10	202	0.04	11	n 19	10	5 81	8.8	8.08	28	3 %	51	51 4	61 63	21	43
22 Nungambakam	W	82	87	45	51	13	12	10.	1-0	10	10	18	22	80.00	6	21		87	18	59	60
23 Chintadripet		161	130	106	86	200	20	II X	13	01	10	122	45	38	34	38	220	41	186	40 40	91
25 Chepank	tenpet	121	141	41	22	24	13	0 10	9	15	12	18	25	17	15	14	15	212	22	42	
26 Tiriplicane	-	11	19	20	43	6,	80,	00 0	9	10 1	00 0	15	18	18	81	22	17	13	5 80	45	
27 Amir Mahal		109	12	60	11	120	21	ha	0 10	~α	0 TO	31	8.00	30	55	288	10	30	15	9.9	
29 Rovapettah		121	101	26	67	18	10	16	-	-	16	37	31	29	14	53		25	55	19	
Mylapore		13	11	41	32	12	-	-	2	6	2	18	18	17	18	53	12	14	14	46	
	Total	2,983	2,425	1,619	1,654	431	429	235	235	261	347	813	892	869	662	800	550	788	528	1,809	1938
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Annual Form No. V :-- Deaths registered according to class by divisions during the year 1921.

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	tion.	Total.		39-1	411	40.0	457	20.0	46.5	54.2	41.5	2.98	40.0	154-3	37.6	30.0	9.98	1.00	001	30.6	8.12	42.0	40.0	36-0	20-0	46'3	39.7	34.6	38.5
100	population.	Others.						17.0	-								-	50	16	2	7.6	1.2				100	99.00	12.7	4.2
5	er 1,000 of	.susbomodak		68-1	55.4	47.6	65.7	2320	17-9	9.99	80.00	2.10	35.7	180.0	15.3	30.4	8.0P	19.95	29-0	1.19	7-28	64-6	1-12	6-09	49-6	48.6	04.0	49-3	47-9
-	Ratio of decths per 1,000 of	.subaill	100	40.0	41.0	39-2	8.98	87.0	553	57-0	342	44.4	42.6	1440	39-5	30.8	00-00-0	80.08	32.0	32.0	0.87	40.9	0.00	20.2	0.52	40.8	200	28.0	38.3
	Ratio	.saaiteirdD		33-1	176	01.00	0 00	22.1	158	9.82	0.46	1	87.0		16.5	20.0	1974	222	29.7	13-8	8.22	443	10.8	1.6	0000	1.0	0.10	29.6	29-2
-		.IntoT		817	978	665	308	451	238	867	874	772	732	412	629	020	585	747	800	503	201	1,000	606	478	400	100	100	210	20,268
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	ensus of 1921.)	Othors.	11	111	10 7	104		28	100	3 98	303	37	102	202	200	2-	40	62	125	101	TOY	8 18	-		10	45	73	19	1,890
90		susbomodals		896	1,427	7×0 6	2,179	879	951	186	41	247	- 112	100	5.722	487	382	1,408	50212	144	0000	8 115	2004	383	5.752	3,452	1.464	528	53,163
	Population (according to 0	.subniH		14,266 15,183	21,148	3.875	12,349	10,259	5545	17.207	7,056	17,261	17,032	2,430	220,022	22,167	17,146	14,245	18,082	10,009	2001200	16.249	0.861	16.060	8.956	13,988	17,893	14,640	4,27,722
	Popul	.saaitsirdO		5,612	1,197	2255	1,103	1,859	190	CITT	10	30	60 S	12	1085	1,410	3,085	3,684	4,582	2,604	120'0	2011	011	09	536	1.146	1.883	2,671	44,136
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69		Districts.			bet			"Fanpe	Taus.	=		apot	asin							1	THE	a to the to the	INCOME						
		Dis		Royapuram	Washermanpet	Kornkupet	Muthialpet	Katchaleswaranpet	Kothawal Baziar	Savan Wells	Sowcarpet	Peddunaickenpet	Trevelyan Basin	Esplanade	Passmhur	Chulsi	wak	Vepery	Egmore	Kilpank	Nungam bakam	Chintauripet	TITU Vauge war an provident	Trinlines	Avoir Mahal	Mirashibnet	Rovenettah	Mylapore	
1		Divisions.		10				-		60	-	-		-	-	-	-	-	-	-	-			-	-	-	-	100	
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Annual Form No. VIII.--Deaths registered from "Measles" by divisions during each month of the year 1921.

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	per 1,0 tion.	Total.	6	6 1	-					-		-		-						1	2	1
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	Ratio of deaths per 1,000 of population.	Males.	:	¥.0	1.0	11	0.6	10			0.3	0.00		0.01		0-0	4	0.3			; 1	20-0
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10	deaths	Females.	233 230 110 113 114 114 114 114 110 110 110 110 110 110	1.2
	Ratio of a	Males.	256 453 112 114 114 114 114 114 114 114 114 114	1.3
		.fatoT		665
4	Total.	Females.	25 11 1 4 2 6 0 0 0 0 1 9 1 9 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	295
		Males.	6 6 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	198.
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	1	November.	**	8
		October,	100 100 1 400 400 10 1 1 1 1 1 00 1 1 1 1	64
	11	September.	41 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	90
		August.	11111 1000 m 1000 m 100 11 100 m 100 11 11	45
		July.	012 01 01 01 01 01 00 01 01 00 01 01 01 01	38
00		.ount	0101 1 1 1 0101 00 1 1 1 0 00 0 1 1 1 1	26
		May.	1111	43
		April.	0.4 1-0100010141-1-10.40101	45
	3.40	March,		20
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	2	Jonuory.	1111 - 1004 - 1 1000 + 010 10 10 10 1	54
61		Districts.	Royapuram Tondiarpet Washtermenpet Korukupet Korukupet Korukupet Katabalgewaran pet. Katabalgewaran pet. Katabalgewaran pet. Katabalgewaran pet. Kothawal Basia Sowen Wella Sowen Peta Rowen pet Trevolyan Basia Sowen yan Basia Fedduaickon pet Trevolyan kan Peranaharan Veper Parasawakan Veper Ranahalakan Chulai Parasawakan Veper Barak Tow Feranaha Chulai Chenak Kilpauk Kulaal Chenak Kulaal Kilpauk Kulaal Kul	Total
1		Divisions.		

Annual Form No. XI.-Deaths registered from "Enteric Fever" by divisions during each month of the year 1921.

02          01           01         01         01         01           01         01         01         01           01         01         01         01           01         01         01         01           01         01         01         01           01         01         01         01           01         01         02         03           01         02         01         01           01         02         03         04           02         03         04         01           03         04         01         01           03         04         01         01           03         04         01         01           04         01         02         04           03         04         01         02           04         03         04         04           04         03         04         02           04         03         04         03           04         03         04         03           04         03         04         03	0.1 0.2
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Annual Form No. XII.-Deaths registered from 'other fevers'' by divisions during each month of the year 1921.

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	per 1000 on.	Total.	08 14 14 14 14 14 14 14 14 14 14	8.6
10	deaths per Population.	Females,	000 114 425 425 426 420 420 125 125 125 125 125 125 125 125	3-0
	Rat'o of of	Males.	258 258 258 258 259 259 251 251 251 251 251 251 251 251 251 251	2.1
		Total.	76 16 16 16 16 16 16 16 16 16 1	1.475
4	Total.	Females.	200 200 200 200 200 200 200 200	742
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	5	December.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	115
		November		81
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		May.	1004481 :: 1 .: 2 .: 2 .: 2 .: 2 .: 2 .: 2 .:	139
		.fiad.A	2000	103
		March.		146
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		January.	44000000000000000000000000000000000000	148
				Total
•		Districts		
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-1		Divisions.	-4004000011992122222323333553888888888888888888888888	

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	2	of deaths per l	Fe-	146 146 146 146 146 146 146 146 146 146	
	2.44	Ratio of o	Malqs.	200 200 200 200 201 201 201 201 201 201	0.0
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	1.00		Jujy.	00000000000000000000000000000000000000	298
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	-	No.	March	200 200 200 200 200 200 200 200 200 200	407
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	-		Divisi	80055450011024500555555555555555555555555	

Annual Form No. XIV.-Deaths registered from "Tubercle" including Tubercle of the Lung by divisions during each month of the year 1921.

Total         Difference         Concise         Sector         Sec	-			B-	
2         2	9	antique	0001	Act available.	04
Batterieta         Batteri	-	er 1,000 cn.	Total.		8.1
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2         2         2         2         2         2         2         2         3         4         1         3         4	-	Ratio of of	Males.		1-9
Late         Lat         Late         Lat         Late         Late         L				857 55 55 55 55 55 55 55 55 55 55 55 55 5	967
Distriction.         Distriction.<		Total	Females		437
A         A			Males.	6400128 828292921716252888989989989989989989989989989989989989	520
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Districtes         Districtes <thdistrictes< th="">         Districtes         District</thdistrictes<>		ber.	meiqea	41-H0 H0 H0 H H H H H H H H H H H H H H H	11
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1     Districte.       1     Roympurtum       2     Conditarpot       2     Conditarpot       3     Washertumsrpet       4     Kornstrupot       4     Kornstrupot       5     Soven Wells       5     Soven Wells       5     Soven Wells       6     Farshunt       7     Chulki       8     Farshunt       9     Soven Wells       1     Soven Wells       2 <td>1</td> <td>·1.52</td> <td>Februa</td> <td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>115</td>	1	·1.52	Februa	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	115
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1     Roynpuram       2     Tondfarpot       2     Tondfarpot       3     Washermarpet       4     Kornkupet       5     Kornkupet       6     Muthialpet       7     Kachavallanaa       8     Muthialpet       7     Kachavallanaa       8     Muthialpet       7     Farabaleanaickenpe       8     Farabaleanaickenpe       8     Farabaleanaickenpe       8     Farabaleanaickenpe       8     Farabaleanaickenpe       8     Farabaleanaickenpe       8     Farabaleana       8     Farabaleana       8     Kilpauk       0     Kilpauk       0     Mylapore       0     Mylapore	-				
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Annual Form No. XV .-- Deaths registered from "Respiratory Diseases" excluding unbercle of the Lung by divisions

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100	er 1,000 on,	Total.	766 102 102 102 102 102 102 102 102 102 102	67
5	f deaths per Population.	Females.	488 886 101 101 101 101 101 101 101 101 101 10	6-6
1en	Ratio of of	Males.	64 64 106 106 106 106 106 106 106 106 106 106	6-7
	24ZP	Total,	100 100 100 100 100 100 100 100 100 100	3.510
4	Total,	Fe males.	88558888888888888888888888888888888888	1,660
1	-	Males.	***************************************	1,850
		December		327
-		November	82222222222222222222222222222222222222	201
	1.11	October.		296
	'.	simeiqez	000100100100100000000000000000000000000	321
	31	JenSuV	8541897************************************	203
65		July		203
	1	.sant		0 238
		May.	10         12           111         12           118         11           118         11           118         12           119         15           110         15           111         12           111         12           111         12           111         12           111         13           111         13           111         13           111         13           111         13           111         13           111         13           111         13           111         13           111         14           111         14           111         14           111         14           111         14           111         14           111         14           111         14           111         14           111         14           111         14           111         14           14         14           15         14 <tr< td=""><td>2 330</td></tr<>	2 330
	1	April.		292
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	11 1	February		301 33
	114	January.		00
Append 2	point of the second sec	Districts.	Boyaparam Toudiarpet Washermarpet Korakupet Korakupet Korakupet Kachaleswaranpet Kachaleswaranpet Kachaleswaranpet Kachaleswar Bazaar Amunon Koll Seven Wella Sowearpot Amunon Koll Seven Wella Bowearpot Fordunaickenpet Trevelyan Basin Eghande Park Town Lark Town Fordunaickenpet Park Town Formiur Chalai Purasu haka Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kilpauk Kirakhibpet Kirakhibpet Kirakhibpet	Total
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Annual Form No. XVI.-Deaths registered from 'injuries' by divisions during each month of the year 1921.

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12	s per tion.	Total.	06 14 14 14 02 02 02 02 02 02 02 02 02 02	0.5
22	Ratio of deaths 1,000 of Populati	'emales.	0.4 0.4 0.03 0.03 0.03 0.03 0.03 0.03 0.	03
-	Ratio 1,000 c	Males. Females.	0.9 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.5
0		Total.	64440408 408648555698000000000000000000000000000000000	241
4	Toini.	Females.	1 1 1 484-48 - 4884-88845-4848 884-5-888884	84
100	02.9.8	Males.		157
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		Novembe		20
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-		March.		24
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	Disarias	1 Deter		Total
21			Royaparam Fondiarpet Vaahorunapet Korakupet Kachabuar Kachabuar Kachabuan Kachabuar Kachabuar Sowaryet Peddunaickonpet Park Town Perk To	
1		Division		

Annual Form No. XVII,-Deaths registered froin 'Child-Birth' by divisions during each month of the year 1921.

9	ratio per during s 6 years.	1'000	Xos a⊤ailable,	1.1%
	of	Total.	000 00 00 00 00 00 00 00 00 00 00 00 00	9.0
2	Ratio of Deaths per 1000 of Population.	Females.	002 002 003 003 003 003 003 003 003 003	6.0
100	Rai	Males.		I.
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+	Total.	Females.	その下ののものののなどのの「ない」、 ない下ののののです。	216
1000	52.031	Males.		area a
	set.	Decemb		53
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		Матор.		18
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1.14	۵.	Tennel		19
				Total
63	Districts.			Ch an
delare	Dis	the state of the s	Royapuram Toudiarpet Washermanpet Korukupet Harbour Muthialpet Koshawal Bazaar Koshawal Bazaar Koshawal Bazaar Koshawal Bazaar Trevelyan Bazia Foddurai ekenpei Trevelyan Bazia Foddurai ekenpei Trevelyan Bazia Foddurai ekenpei Perta Part Peta Mati Purasawakam Purasawakam Purasawakam Purasa wakkam Chepauk Triplicane Kilpauk Nungan bakkan Chepauk Triplicane Kilpauk Triplicane Kilpauk	in al form
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Annual form No. XVIII.-Deaths registered from "Other causes" by divisions during each month of the year 1921.

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	rr 1,000 n.	Total.	16.0 1775 1775 1775 1775 1674 1674 1674 1675 1675 1675 1675 1675 1675 1675 1675	16-4
10	Denths per Population.	Femalas.	38°8           31°0           31°0           31°0           31°0           31°0           31°0           31°0           31°0           31°0           31°1           31°1           31°1           32°1	16.3
	Eatio of of	Males.	18°5 19°5 178°5 178°5 178°5 178°5 16°5 117	16.5
-	21.54	Total.	2000 2002 2002 2004 1145 1145 1145 2005 2005 2005 2005 2005 2005 2005 20	8,623
4	Total.	Females.	197 259 259 198 198 199 198 198 198 198 198 198 19	190%
		Males.	192 227 227 227 227 227 227 228 228 156 146 158 158 158 158 158 158 158 158 158 158	4,560
		December.	25 25 25 25 25 25 25 25 25 25 25 25 25 2	824
		Nevember		101
	1-75	Octoper.	220 220 220 220 220 220 220 220 220 220	169
		September	288 288 288 288 288 288 288 288 288 288	645
	No.1	.tsuyaA	22 23 23 23 23 23 23 23 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	2002
80		Juja.	80 11 11 11 12 12 12 12 12 12 12	553
		.eant	24 24 24 24 24 24 24 24 25 26 26 26 26 26 26 26 26 26 26	581
		A sy.	12 12 12 12 12 12 12 12 12 12 12 12 12 1	682
	100	'Had A	200 200 200 200 200 200 200 200 200 200	605
		March.	88 88 88 88 88 88 88 88 88 88 88 88 88	775
	1	Fol runry.		925
	-	January.	- 48 - 48	980
			111111111111111111111111111111111111111	Total
61		Digtricts.	Raynfoursan Trondiarpet Weahermenpet Korahermenpet Korahanget Barbone Barbone Kadahiswaantyet Kadahiswaantyet Kadahiswaantyet Kadahiswaantyet Seven Wella Seven Wella Seven Wella Seven Wella Seven Wella Sowcarpet Peddu an ckmpet Feddu an ckmpet Feddu an ckmpet Park Town Peranbu Trevel yan Basin Feranbu Trevel yan Basin Feranbu Trevel fow Kilyank Kilyank Chajai Kunada ipet Chajai Kunada ipet Chajai Kunada ipet Chajai Kunada ipet Borspetta Mylapore	
1	1989	Divisions.	88888888888888888888888888888888888888	

Annual Form No. XIX :--Comparing the Deaths from some of the principal diseases during the

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_		Ratio per 1,000.		34.5	38.4	0-3	4	41-3	44.7	38-5
Trates	i he	0001 and 01104		00	7 36	00	7 52			
d.	Deaths.	Deaths.		17,87	19,91	31,26	27,187	21,418	23,531	20,268
	10 %	Ratio per 1,000		15-9	18.1	23-0	8.12	18.2	1.61	16.4
11. 11.	All other causes.	Deaths.		8,246 15.9 17,872	9,384 1841 19,917	11,927 23-0 31,262 60-3	11,310 21.8	9,443	10,062 19-1	8,621
	1	Ratio per 1,000.				oldaliav	u 20N			0.4
Death	child birth.	Deaths.	22			oldaliav				216
	es-	Ratio per 1,000.	1	0-3	0-4	03	0.4	9-0	0.4	0.5
	Injuries	Deaths.		145	203	177	209	296	206	241
		Ratio per 1,000.	-	5.2	6.4	10-6	4-1-	9.9	1.00	6-7
Respiratory System.	Other Res- piratory Diseases.	Deaths.		2,851	3,293	5,518 1	3,839	3,431	3,786	3,510
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oirat	er- 10-	Ratio per 1,000.	-	1.5	1.9	00 00	00 63	1.8	5.0	1.7
ResI	Taber- culosis (Pulmo- nary.)	Deaths.		799	976	1,431	0-3 1,178	920	1,061	905
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Tuher-	other than Fulmo- nary.	Desths.		12	16	22	131	22	- 55	52
Allo	. aa	Ratio per I,000.	198	ŀĿ	7-9	10-7	11-3	9-0	9-0	6.2
Dreenterv	nnd Diarrhœa.	Deaths.		3,664	4,131	5,533	5,835	4,671	4,767	4,149
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	Other Fevers.	Deaths.		479	575	192	2522	1774	2028	1475
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	Malaria.	Deaths.	1	763	859	881	736	560	760	652
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	Measles.	Deaths.	E	282	79	104	108	41	123	40
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	Small- pox.	Deaths.	-	476 0-9	195	272	611	109	333 0-6	180 0-3
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	Cholera.	Deaths.		30	78	503	642	63	255	139
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Annual Form No. XX showing a complete classification of diseases arranged in the order adopted in the

Nomenclature of Diseases.

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-Annual Form No. XX-Showing a Complete Classification of diseases arranged in the order adopted in the Nomenclature of Diseases - (Continued)

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Annual Form No. XX-Showing a Complete Classification of diseases arranged in the order adopted in the

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Annual Form No. XX showing a complete classification of Diseases arrnged in the order adopted in the

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Annual Form No XX showing a complete classification of Diseases arranged in the order adopted in the Nomenclature of Diseases:-(Contd)

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	E T	Diseases of the Tunica Vaginalis. Hydrocele	STINCT OF REPAR	Dis	Inflamation-(1) Orchitis	Deserves on ser	TT IN STAVASTO	Diseases of th	Metritis	(a) Fibromyotaa	Rapture of Uterns
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Affections connected with Pregnancy.		Affections connected with Parturition.	hage 6	Asphyxia of child	Premature Birth	Difficult Labour	Affections consequent on Parturition.	Post-partum Hæmorrhage	Puerperal causes	" Sapræmia	Pelvic Abseess	Sudden death after delivery.	(9) From Shock after Delivery	Diseases of the Bones exclusive of the Spine.	Inllammation	(b) Periostitis	Diseases of the Spine.	
- for	icotion S34 Abortion	H HV	n d Hemorrhage	ectioner 850 Asphy	852 601	,		858	855	and t	861	anbə	870		885	esses orrenio	anta 10 anta 1	U 916 Caries

Annual Form No. XX showing a complete classification of Diseases arranged in the order adopted in the Nomenclature of Diseases.-(Contd).

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Comenciature Scomenciature Stath.	and a Num Stork dies Delivery	Diseases of the Connective Tissue.	952 Cellulitis	953 Abscess	Diseases of the Skin.	962 Eczema	965 Boil	966 Carbunche	General Injuries.	102: Effects of Heat (a) Burns and scalds	(c) Sun-stroke	1029 Effects of Electricity
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tion	by Dre	R	by Hangi	by Judicial Han	tion	:	Due to carriage accident	», Train	" Motor	" Tram	after operation			a la resta	Inj	Fracture of the Skull	Gun-shot wound		
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Annual Form No XX Showing a complete Classification of Diseases arranged in the order adopted in the

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es.	February.		1	T		-	c)		:				94	304	00
seas	January.					:			:				95	282	
Nomenclature of Diseases,Conta,	Causes of Deaths.	Injuries of the Neck (Exclusive of the Vertebral column.)	Fracture of Larynx	Wound of Neck	Injuries of the Chest.	Fracture of Ribs	Multiple Injuries	Injuries of the Back (Iucluding the whole Vertebral column.)	Fracture of Spine	Injuries of the Lower extremities.	Fracture of Fernur	Ill-defined and non-Specified Causes.	Debility	Old age	Natural Causes
	Nc. in the Womenalatare of Diseases		1133	1185.	uțaI .	1145	1156	Gen	1160	No. of the second secon	1227				and all and a second

TABLE A.

Comparative Statement of deaths from some of the principal diseases during the past 12 years.

	Births.		Deaths.	hs.	Small- pox.	·IT ·	Malaria.	, é	Other Fevers,	4 ×	Other Infectious Diseases.	r tous tes.	Plague.		Diarrhoea, and Dysentery	ery	Respira- tory Diseases		Infantile Mortality under 1 year	utile ality I year.	beat bety 1 to 1	Deaths of children between 1 to 5 years.	Still- Births.
Years.	No. of Births registered exclusive of Still-births.	Birth-rate.	No. of Deaths registered exclusive of Still-births.	Death-rate.	Desths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Denths.	Raie.	Deaths.	Rate.	Desths.	Rate,	Deaths.
1910	19,340	87-9	20,312	39-8	116	02	2,376	9.4	2,742	5.4	1,066	2.1	54 0	0.009	3,635	11	2,173	4.0	5,687	294.1	3,059	67-5	673
1161	19,735	38.3	21,771	42.0	480	0-3	2,884	5.6 ]	1,163	F0 F0	1,482	5.9	3	0.005	4,854	₹.6	3,011	5.9	6,027	305.4	3,233	73-7	665
1912	20,099	38.8	20,132	38-8	106	02	2,934	5.2	666	6.1	927	1.8	1	0.002	4,897	9-4	2,671	5. 20	5,628	280.4	2,951	67-2	674
1913	19,470	37-5	20,675	39-9	34	90-0	2,788	5.4	1,043	5.0	1,232	4.5	3	0-005	5,193	10.0	2,700	01 20	5,713	293.4	3,296	75-1	642
1914	18,241	35-5	24,174	46-6	99	01	2,658	5.1	786	1.5	2,306	4.4	03	0.004	5,508	10.6	3,762	7.3	5.635	308-9	3,740	85-2	606
1915	18,331	35-3	18,688	36-0	92	0.5	1,686	3:3	644	1.5	555	11	:	:	4,208	8.1	3,062	6.9	5,244	286.1	2,748	62.6	650
1916	21,675	41-8	17,872	34.5	476	6-0	763	1.5	528	1.0	443	0.9	п	0-02	3,664	1.2	3,727	1.5	5,746	265-1	2,742	62.5	975
1917	23,296	44.9	19,917	38.4	195	0-4	829	1.7	575	1:1	654	1.3	9	10.0	4,131	6-2	4,360	8.4	6,460	277-3	2,945	1.49	1,077
1918	19,897	38.4	31,262	60-3	272	0-5	188	1.7	4,837	9.3	542	1.0	55	0.04	5,533	10.7	7,006	13-5	7,068	355-2	4,914	112.0	834
1919	18,936	36-5	27,187	52.4	611	1.2	736	12	2,574	2.0	1,288	2.2	14	0.03	5,835	11.3	5,148	6.6	6,230	329.0	4,595	104.7	887
1920	21,396	41.3	21,418	41-3	109	02	560	1·1	1,780	3.4	1,995	3.8	00	0.02	4,671	9.0	4,428	8.2	5,976	279.3	3,654	88.3	1,172
1921	19,187	36.4	20,268	38-5	180	0-3	652	1.2	1,475	80. 80. 80.	708	1.3	3 0	0.006	4,1 49	6-2	4,467	8.2	5,408	281-9	3,273	6.64	1,136
													-										

## TABLE B.

#### Rainfall.

	1	st Quarter.	2nd Quarter	Srd Quarter.	4th Quarter	
Years.	J	anuary to March.	April to June.	July to September.	October to December.	Total.
		Inches.	Inches.	Inchos,	Inches.	Inches.
1916		0.04	4.27	8.78	33-38	46.47
1917		0.44	6*15	15.90	28.57	51.06
1918		10.25	7.60	6.96	50.19	75.00
1919		2.33	2.52	16.06	29.87	50.78
1920		5.66	1.92	4.75	51.56	63.89
1921		5.46	2.64	18.18	28.15	54-43

## TABLE C.

# Table of Births, Deaths and Infantile Death-rates for the different races in the City for 1920 and 1921.

1 2 8 4 1	-	-9-			193	0-			Dum		19	21.		
Race or Caste.	and sold and	Population according to Census 1921.	Total No. of Births.	Birth-rates.	Total No. of Deaths.	Death-rates.	Infantile Denths.	Infantile Death-rate.	Total No. of Births.	Birth-rates.	Total No. of Deaths.	Death-rates.	Infantile Douths.	Infantile Death-rates.
Europeans		2,938	86	20.5	51	12-2	10	1	79	26.9	57	19.4	6	75-9
Anglo-Indians		9,002	385	37.3	812	80-2	57	148.1	378	42.0	887	37.4	84	249.3
Indian-Christians		32,196	985	36.1	963	85.2	140	142.1	. 908	28.2	895	27.8	215	236.8
Hindus		4,27,722	17,420	41.9	17,412	41.9	5409	310.5	15,676	36-6	16,422	38.4	4,498	240-2
Mahomedans		53,163	2,518	42.6	2,669	45.1	360	143.0	2,144	40'3	2,549	47.9	- 605	292 1
Others		1,890	- 2	1.1	11	6.5			2	1.1	8	4.2		
Total		5,26,911	21,396	41.8	21,419	41.3	5976	279-3	19,187	36.4	20,268	38.5	5,408	281.9

## TABLE D.

## Total of Birth and Death rates of Principal Sub-divisions of the Hindu Community for 1920 and 1921.

Dender Ratio of Dentin	120	ion.		19	20.	7101-	8-10100	192	21.	
5-010	-	Population.	Total Births.	Birth rates.	Total Deaths.	Death rates.	Total Births.	Birth rates.	Total Deaths.	Death rates.
Brahmins		47,969	1,039	31.7	1,063	32.5	1,244	25.9	1,058	22.1
Chetty		4,018	1,050	28.8	1,034	28.4	1,190	296.2	1,187	295-4
Vallalah or Mudaliar		69,617	2,454	36.9	2,865	85.5	2,320	33.3	2,492	35-8
Balijah or Naidu		49,885	1,319	33.9	1,696	35.5	1,482	29.7	1,699	84.1
Vanniah or Naicker		50,058	2,508	50.0	2,202	43.9	2,193	43.8	2,332	46.6
Adi-Dravida	2	58,568	2,803	47.0	2,497	41.9	2,408	41.1	2,417	41.3
Patnavar		10,456	517	52.8	525	58.6	354	33.8	486	46.5
Yadaval or Idayar		15,269	623	43.5	557	38-9	456	29.8	539	35-8
Viswa Brahmin or Kammalar	3	13,806	648	41.5	588	38-3	555	40.2	557	40.3

#### TABLE E.

Table of Births, Deaths and Infantile Death-rates by months for 1920 and 1921.

		Ren Ca		1920			1			1921			
Months	A toront	Total No. of Firths.	Birth-rates.	Total No. of Deaths	Donth-rates.	Infantile Death.	Infantile Death rates on 1000 Live Births.	Total No. of Births.	Birth-rates.	Tetal No. of Deaths.	Denth-rates.	Infantile Death.	Innfantile Death rates on 1000
lanuary		1,709	39-5	2,254	52.1	570	333.5	1,572	35.8	2,119	48.2	577	367-1
February		1,403	32.2	1,863	43.1	491	350-0	1,322	30-1	2,235	50.9	480	363.1
March	-	1,586	36-7	1,928	44.6	437	275.5	1,569	35.7	1,830	41.6	420	267-7
pril		1,588	35.6	1,629	37-7	369	239.9	1,531	84.8	1,475	33.2	370	240.1
lay		1,711	39-6	1,616	87.4	454	265 3	1,599	86.4	1,700	38.7	432	2714
une		1,715	39.7	1,518	35.1	419	244'3	1,508	34-2	1,270	28.9	893	231.5
uly		1,953	45.2	1,471	34.0	483	221-2	1,622	86-9	1,312	29.8	409	252-0
August		2,028	46.9	1,514	35.0	465	229'3	1,615	36.7	1,814	41.3	559	346
September		2,063	47-7	1,511	34-9	457	221.2	1,661	37.8	1,658	37-7	439	264
Detoher		2,027	46-9	1,662	38.4	517	255,1	1,765	40.1	1,525	34.7	408	231.2
November		1,912	44.2	2,066	47-8	686	358.8	1,762	40'1	1,529	34'8	403	2.28-7
December		1,751	40.5	2,386	55-2	679	387.7	1,686	37.9	1,801	41.0	516	310'8
Te	tal	21,396	41.8	21,418	41.3	5,976	279'8	19,187	86.4	20,268	38'5	5,408	281

TA	B	L	E	F

Ratio of deaths among Children under one year per 1,000 live births registered in each Division for 1920 and 1921.

	Municip	al Divis	nons.	200	Ratio of Deaths 1920.	Ratio of Death 1921
1	A REAL				\$28·5	810.7
2					277.7	285.5
3					277.7	286.2
4			0.0 1 2.50 000	1.	260.4	331.8
5					414.4	456.9
6					312.5	348.8
7					814.6	390.2
8			2002 (000 Tros	]	405.8	476.2
9			101 g		327.1	337.2
10					349.6	336-1
11					508.4	522.6
12			10 1000 000		333.9	319.6
13					863.5	877.1
14					500 0	339-8
15					888.9	296.9
16					211.7	220.3
17					262.3	289.0
18					248.6	260.1
19					233.0	269.5
20					288.5	229.0
21					260-9	239.6
22					234-3	256.4
23			A a series a se		278.5	267.0
24		·	and the state		249.6	249 0
25			a statistica and		272.7	206.6
26					232.3	280.8
27					260.0	264.8
28			and the second		280.7	296 3
29					240.1	251.5
30			6-112-1120 (PAD		293.8	254.4
		- Inter	Total		279.3	281.9

Total of	all causes for 1920	24-72 00	570	491	437	369	454	419	432	405	4.57	517	686	629		5,976
	Total.	100	577	480	420	370	484	398	409	559	439	408	403	516		5,408
Total.	Females.	1000	264	196	199	162	194	175	183	262	187	180	181	242		2,425
	Males.	STEL ST	313	284	221	208	240	218	226	297	252	228	222	274		2,983
'səsîneo	All other	1	53	52	18	26	26	. 35	37	34	28	45	39	47		440
ry Sys-	Respirato tem.	110	93	100	86	84	110	61	86	123	94	78	101	103		1,155
mətem	snovi9N		110	72	78	64	96	68	75	36	106	92	292	120		1,058
lity.	Debility.		59	40	22	55	28	37	19	34	37	12	37	40		432
	Prema	an ac	129	85	85	29	00	49	72	80	68	87	86	98	100	106
	Diarrhœn	S.P.S.	128	112	100	73	110	88	100	181	66	16	58	68	1	1,170
Fever.	ted iO	15	2	16	12	6	- 12	13	17	19	12	10		4	101	104
.sir	Small-pox. Measles. Malaria.				1			-	erJ		4++	1		-	0	[0]
səles.			1								1		c1		01	10
.xoq-			- 0	21	00 0	53 .		0		c1 (		53 1	1	11		
0 H 1	tom 1	in the second													-	
Monthe	within the sta		January	rebruary	arch	pril	ay	em	uy	ngust	eptember	October	ovember	Jecember	Total	TOTA

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TABLE G.

IT'L

TABLE H.

1001 m Delucing Deaths for

			_						
	Total.	.orteA	1365 25-24	15.03	17-92	15-09	14-57	12.15	281-9
	Ē	.[stoT		813	969	816	788	657	5408
	All other Causes.	.oiteЯ	7-33	11-07	9-08	5.88	12-9	10-50 657	8.14 5408
		Total.	100	90	88	48	45	69	440
1701	Respiratory System.	.oiteA	5-27	8-49	25.49	33-82	33-63	34.40	7-99 1058 19-56 1155 21.36 440
ycar	Reep Sys	TetoT	72	69	247	276	265	226	1155
Infant Deaths Irom Frincipal causes in the year 1921	Nervous System.	Ratio.	13.92	69-7-8	29.62	17.71	10.15	11-26	92.61
102	Sys	.IntoT	190	282	287	145	80	74	1058
I caus	Debility.	Ratio.	12-53	13-90	8-15	2.94	4.19	1.83	66-2
Icipa	De	.IntoT	171	113	64	24	600	12	432
	Premature Births.	.orteH	58-02	18-33	1.75	0 25	0-13	1.1	22-21
ILOI	Prei Bi	.IntoT	792	149	17	63	1	÷	961
cauns	Diarrhœa and Dysentery.	.oitsa	2.49	12.30	22.50	32.97	39-85	36-53	134 2.48 1175 21.73
וח	Dia Dyse	Total.	34	-23 100	158218	269	.08 314	240	1175
Inta	Other Fever.	.oitsH	28.0	1.23	2.58	3-92 269	5.08	3.35240	2.48
10	Per	.IntoT		10	25	32	40	22	134
Lable of Percentages of	Mala- ria.	Ratio.		:	2 0.21	4 0.49	1 0.13	2 0.30 3 0.46	33 0.61 10 0.18 10 0.18
Cen		.IstoT			0			0	810
ere	Meas- les.	Ratio.			1 0.10	5 0.61	2 0-25	0.3	1.0
		Total.			1	01 01			110
e 0	Small- pox.	Ratio.	20.0		5 0-52	1.3	2 0.89	9 1-37	9-0
abi	N d	.latoT		100		11.	and a start of the		33
				7 days and under 1 month	1 month & under 4 months.	4 months & under 7 months. [1] 1.35	7 months & under 10 months.	10 months & under 1 year	Total.
	spoi		0	er ]	r 4	er 7	br 10	ler	F
	Age periods.		zó.	ande	inde	pund	unde	oun	
	03		day	1 pu	le u	e.	5	<b>%</b>	
	A		~ 1	16 a)	ith	nths	aths	onth	
-			Under 7 days.	day	Iom	tottu	Iom	0 m	
			Б	~		4-	~	I	

Statement No. I showing the number of births (Divisional and Hospital) verified during the calendar year 1921 and the number of vaccination of infants under one year of age.

centage of vaccination to births registered.	Ho-pital.	13	57-3	44.3	20-7	26-3	34.3	16.0	11.8	27-0	20.7	33-5		30-7	30.8	0.21	10.0	38.8	36-0	55.2	28.7	20-7	16-5	37-5	51.6	27-0	214	20-9	47.2	67.5	46-7	35-2
Percentage to births	Divisional.	12	58.4	49-7	40.3	43.5	21.8	24-3	7-14	42.0	23-9	6.01	34.0	22.1	7.10 7.10	1.10	56.7	67-3	9.99	9-12	6-29	52-2	36.3	58.3	56.3	57.8	51-2	40.8	74.0	60.8	71.0	53.8
f infants der one year.	Hospital.	11	164	139	46	39	53	8	16	10	39	58		27	33 °	0 10	81 81	47	50	174	167	30	41	133	98	37	18	27	50	141	2.	1,723
Number of infants vaccinated under one year.	Divisional.	10	323	308	349	266	41	99	118	42	120	204	22	290	240	906	663	654	460	393	326	252	155	465	527	277	284	256	595	356	421	8,749
nts surviving.	Hospital.	6	267	288	200	129	61	45	120	. 28	165	147	210	18	12	12	III	88	111	261	513	131	230	305	167	113	12	90	76	182	50	4,208
Number of infants surviving.	Divisional.	8	460	494	101	476	132	205	214	64	364	362	25	429	200	039	883	773	590	453	463	401	348	662	833	400	463	481	104	476	503	13,186
	Hospital.	7	19	26	22	19	9	5	15	6	23	26	10	10	13	0 21	41	32	28	54	68	14	14	50	23	24	13 .	32	30	27	10	680
Deaths under one year.	Divisional	9	83	126	164	135	56	99	69	36	138	136	63	137	116	50	112	200	101	96	100	82	64	136	98	79	92	147	100	109	06	3,066
rths.	Hospital.	5	11 11	36	28	12	59	9	10	9	14	17	~		10		-	16	2	19	14	15	12	33	16	19	18	13	11	14	2	445
Still-births.	Divisional.	4	24	29	27	14	9	2	9	~	16	22	00 0	19	10	10	107	45	24	12	16	16	19	25	50	19	15	27	48	29	37	714
xcluding still hs.	Hospital.	8	186	314	222	148	67	20	135	37	188	173	17	200	16 1	100	152	121	139	315	182	145	244	355	1 190	137	84	129	106	209	60	4,888
Total births excluding still births.	Divisional.	50	553	620	865	611	188	112	283	100	203	498	150	000	402 60	433	994	973	691	549	563	483	427	798	936	479	555	628	801	582	.593	16,21,52
Indiaia .oN no	Divisi	1	1	04	00	4	N.	9	1	8	6	10	11	R	13	15	16	17	18	19	20	57	55	23	24	25	26	27	28	29	30	

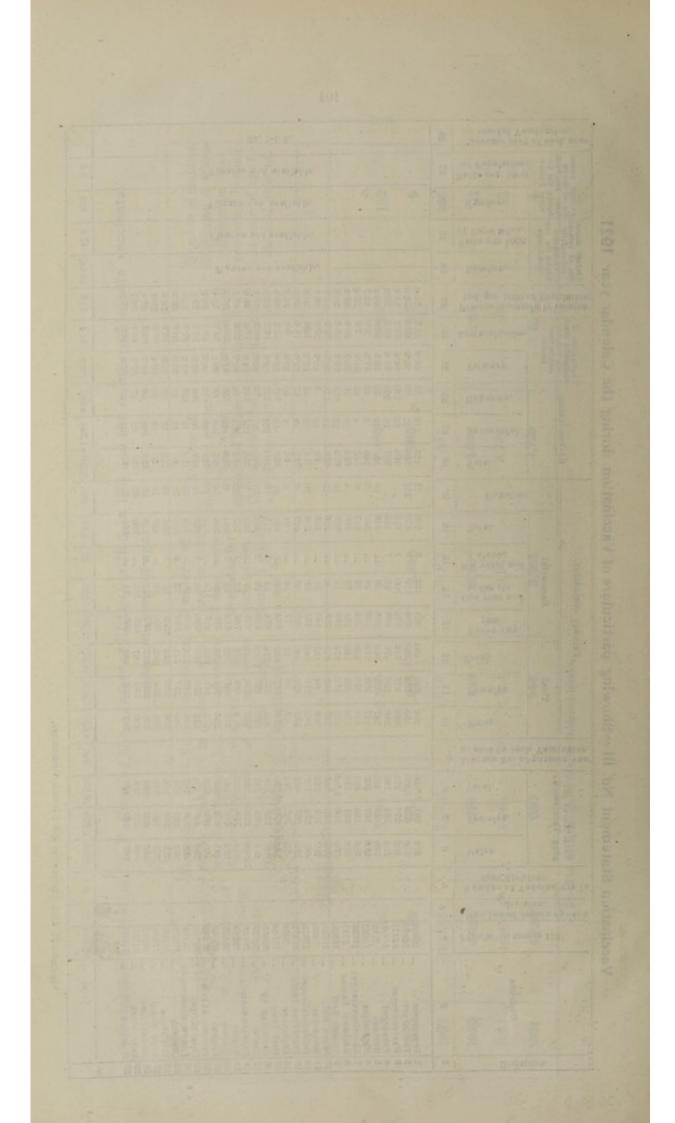
Vaccination Statement No. II. showing the number of Births verified in 1921 and the number of Infants vaccinate.

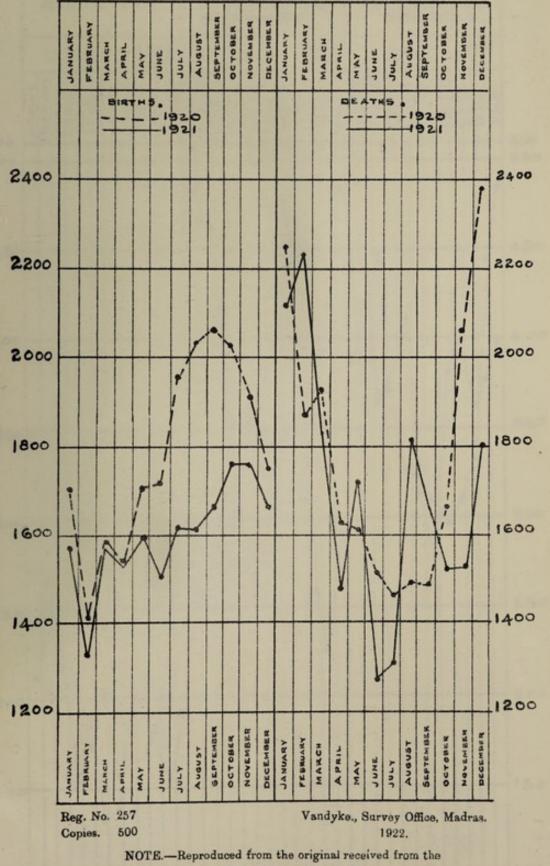
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Number of children in column 5 whose vaccination was postponed beyond one year of age for medical reasons.	8	ENTER STATE	182	0	136	п	82	4	and the second second
Percentage of column 6 to column 5.	2	14 : V	86-03	51.84	85-35	51.82	89	52.8	de sur l'est
Number of children in column 5 who were vaccinated before they attained the age of one year.	9		7,489	1,385	7,881	1,662	8,749	1,723	And a state of the
Number of childrenNumber of n column 2 whoNumber of children in columnleft the city before attaining the age of one year with- out being vaccinated.Number of a who were 5 who were available for vaccination.Number of 5 who were 5 who were 	5		8,705	2,690	9,234	3.207	9,832	3,264	
further of child-Number of children ren in column 2 in column 2 who who died before attaining the age of one year with- out being vaccinated.	4	298	2.520	845	3.018	948	3,354	944	in Unsuital binths
Number of child-Number of children ren in column 2 in column 2 who who died before attaining the age of one year with- out being vaccinated.	3	2.01	3 791	664	3,284	679	3 066	680	V D The solidith famous damate Hamilton binches
Total number of births excluding still-births.	2	18 24 18 24 18 24	15,016	4,199	15,536	4,834	16,252	4,888	E Q N
Year.	1		1919	1919	1920	1920	1321	1921	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

of each and	Average cost Average cost aV luissoo	28	Re. 1-1-9.	
Average anneal No. of deatbs from seall-pex during the pre- vious 5 scats-	Ratio net 1000	21	Pigning ton source!	0.0
vorage to. of da rom su virus 1 vious 5	Namber.	26	Figures not available.	333
f persons essfully cinated t the pre- d 5 years.	Estio per 1000.	25	Figures not available.	47-5
Average No. of p success Vaccin during th vious 5 ;	Nomber.	24	Figures not available.	24 645
Populatio	Persons success	23	24 4 22 4 46 4 46 4 46 4 46 4 15 7 15 7 16 7 16 7 26 5 26 5 26 5 26 5 26 5 26 5 26 5 26 5	976
	noissaioosv-oS	22	32.7 259.5 21.1 60.2 25.9 25.9 25.9 25.9 25.9 25.9 25.9 25	18
Percentinge of successful case in which the results were know n.	Prinery.	21	91.4 91.4	0.00
	Unknown,	20	$\begin{array}{c} 71\\ 70\\ 70\\ 70\\ 80\\ 80\\ 80\\ 80\\ 80\\ 80\\ 80\\ 80\\ 70\\ 70\\ 70\\ 70\\ 70\\ 100\\ 100\\ 100\\ 10$	1000
Re-Vaccination	.Inlassoon2	19	116 67 69 69 69 69 69 61 10 10 10 10 10 10 10 10 10 10 10 10 10	1
Re-Vn	Totol.	18	426 306 306 307 121 121 249 670 670 670 670 670 670 670 670 670 670	
	.awondaD	17	$\begin{smallmatrix} & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & $	1
-	TatoT	16	3995 8125 6755 8165 3165 3165 3165 327 827 810 427 7119 7119 7119 7119 7119 7119 7119 71	1
ul II	Six years and above.	16	New Provide Land Land Land Land Land Land Land Land	1
vaccination. Successful	One year and noder six.		117 117 117 117 117 158 158 158 144 144 144 144 144 144 144 144 144 14	-
10	Under one year.	13	269 694 574 574 286 294 288 286 294 288 288 288 288 268 148 676 576 576 576 576 576 576 576 576 576	
Primary	Total.	12	454 476 7716 876 876 826 828 828 828 828 828 828 828 828 187 774 446 633 7774 1,0774 446 828 828 828 828 828 828 828 828 642 642 642 642 642 642 642 642 640 642 640 642 640 642 640 642 640 642 640 640 640 640 640 640 640 640 640 640	1
Total.	Ferrades.	11	240 5240 5240 5240 1112 1112 1112 1112 1112 1112 1112 1	Î
F	Jiales.	10	2564 2564 2565 2565 247 147 147 147 147 198 218 218 2282 2822 475 477 472 2805 5325 5325 5325 5325 5325 5325 5325 53	Ì
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	.IatoT	00	920 979 9795 19795 19795 19795 19795 19795 1946 1046 1046 1046 1046 1046 1046 1046 10	İ
io. of p accins	Females.	1-	887 877 877 877 877 877 861 1112 1165 1165 1165 861 1198 1198 1198 861 1198 861 1198 877 108 830 830 830 830 830 830 830 830 830 8	1
Total No. of per- gons Vaccinsted.	Males.	0	523 523 523 523 523 523 523 523 523 523	-
	aoisivib dasa	10		
dono ni m	oqeb to redmuN noisivib	•   •		
	sususo uoijaludo	1	20801 16599 23777 23777 23777 23777 16531 196540 19625 19625 19625 24021 17574 294540 24021 192995 192955 192955 24021 192955 24021 192955 24021 192955 24021 192955 24021 192555 192555 192555 192555 1955555 195555 195555 195555 195555 1955555 1955555 1955555 1955555 19555555 1955555 1955555 1955555555	
	Districts	61	Royapuram Towal structure Vasi structure Korukurpet Harbour Korukural pet Kochalosvarn pet Kachalosvarn Basar Ammen Koil Ammen Koil Ammen Koil Sovearpet Esplanade Esplanade Perahiur Chulai Perahiur Chulai Purs savakam Vers avakam Vers avakam Vers avakam Vers Manal Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk Kilpeuk	

\*luolades 31 Asst. Vaccinators and 2 female Vaccinators.



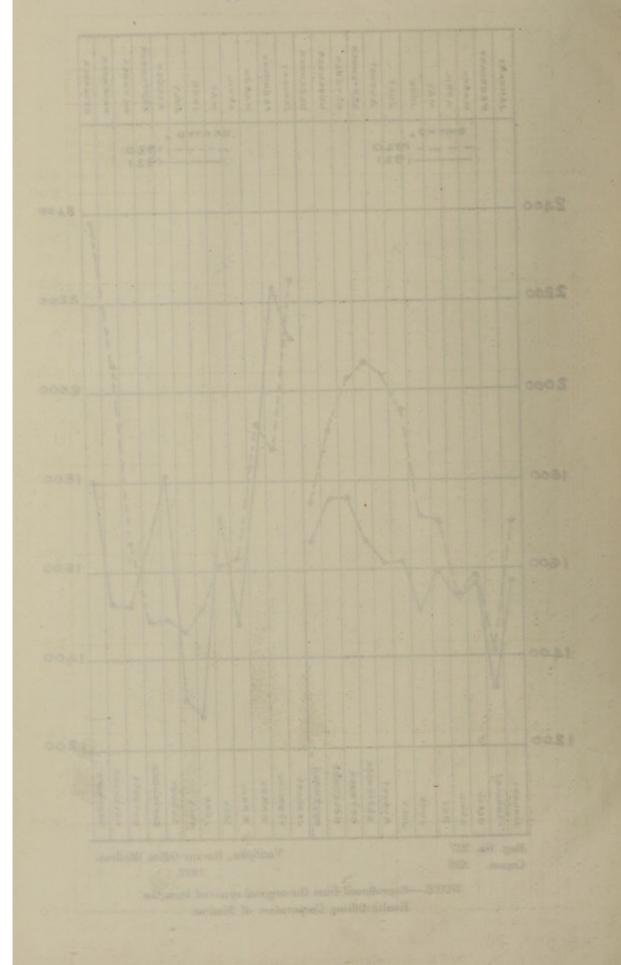


#### GRAPH SHOWING BIRTHS AND DEATHS BY MONTHS.

Health Officer, Corporation of Madras.

#### GRAPH SHOWING BERTHS AND DEATHS

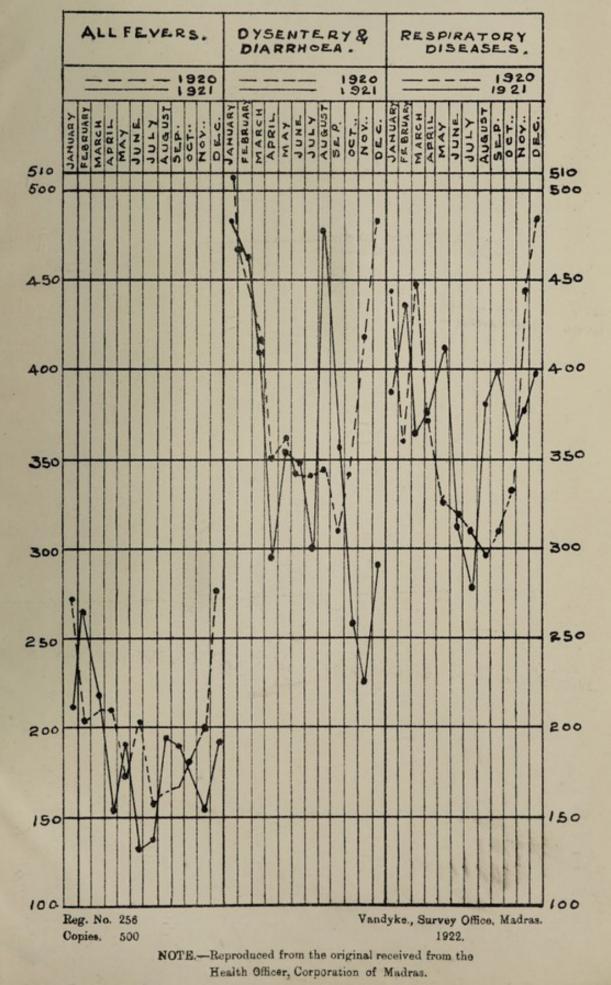
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#### GRAPH SHOWING THE TOTAL DEATHS

#### BY MONTHS

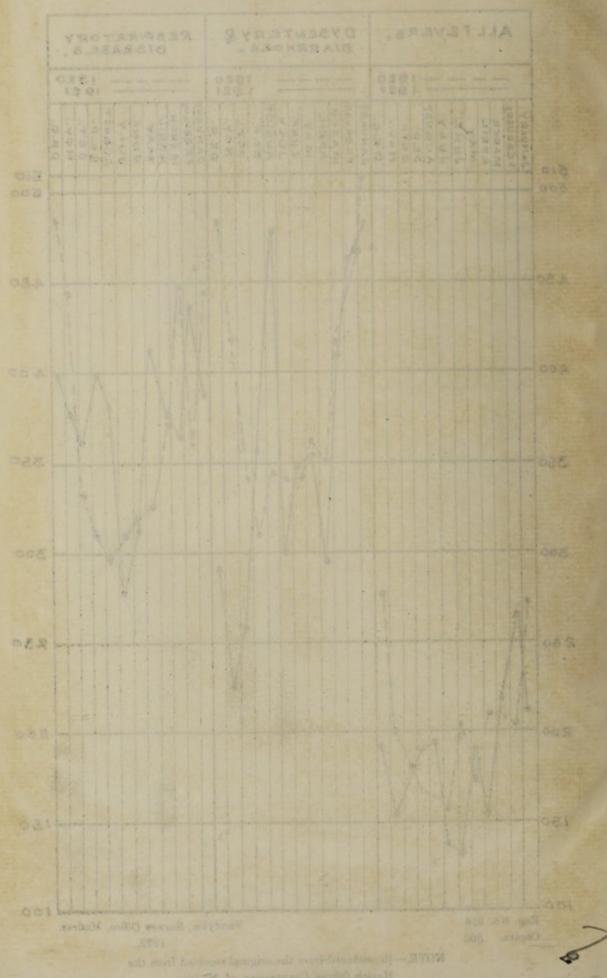
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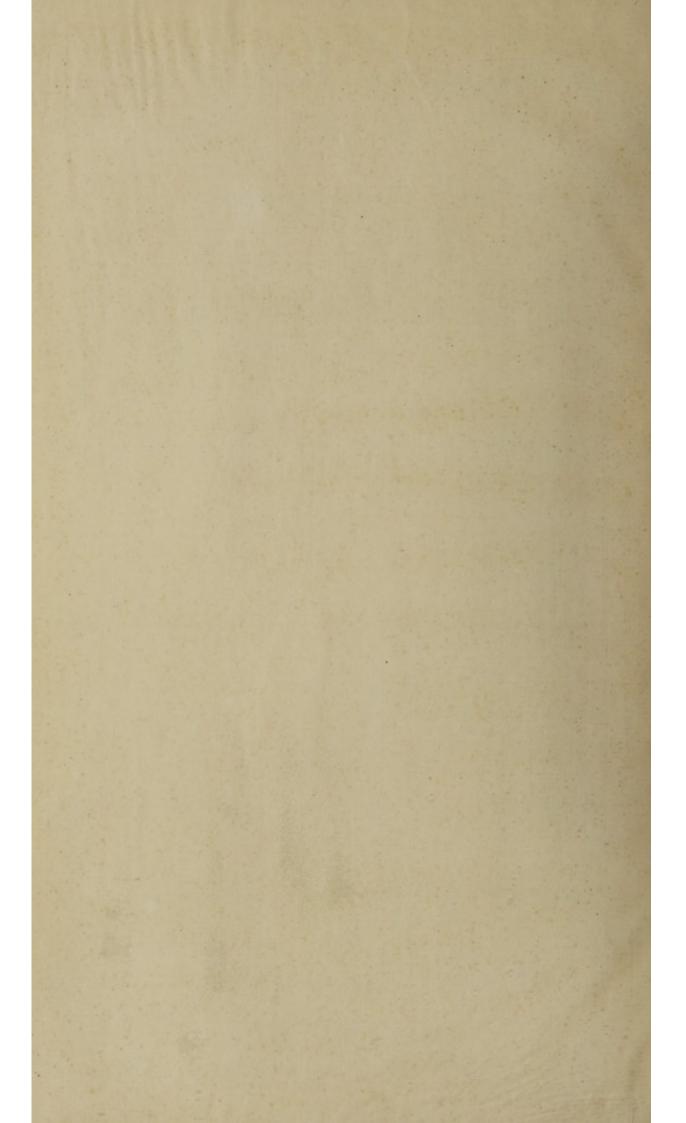
### GRAPH SHOWING THE TOTAL DEATHS

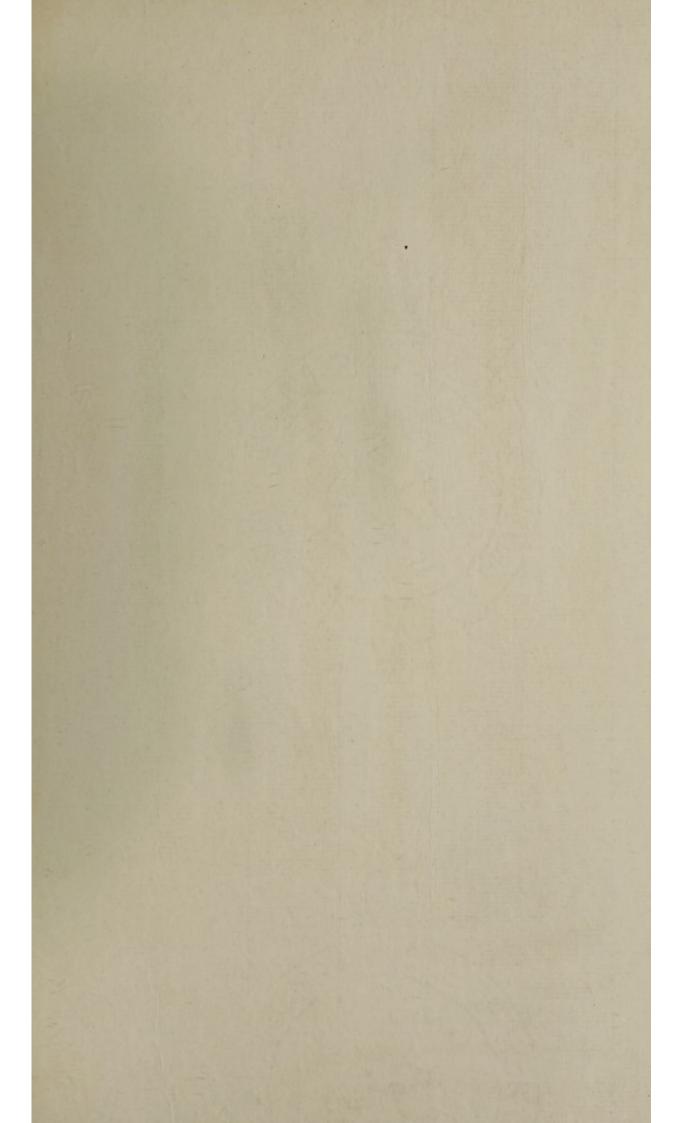
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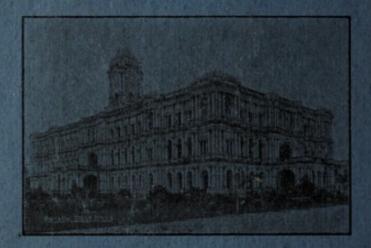








## CORPORATION OF MADRAS



(RIPON BUILDINGS)

# ANNUAL REPORT

#### OF THE

[Health Officer] Health Department. of the City of Madras

FOR THE YEAR

# 1921.

MADRAS : PRINTED BY S. MURTHY & CO., AT THE "KAPALEE PRESS." 305, THAMBE CHETTY STREET.