

Annual report of the Medical Officer of Health / Nairobi Municipality.

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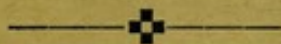
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CITY COUNCIL OF NAIROBI

Kenya

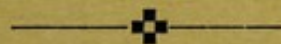


TWENTY-FIRST

ANNUAL REPORT

of the

Medical Officer of Health



1950





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MUNICIPALITY OF NAIROBI
Kenya Colony.

With the Compliments
of
The Medical Officer of Health.

*Public Health Department,
Town Hall,
Nairobi,
Kenya.*



MUNICIPALITY OF NAIROBI
Kenya Colony

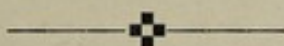
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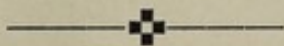


TWENTY-FIRST

ANNUAL REPORT

of the

Medical Officer of Health



1950

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**Town Hall,
NAIROBI.**

12 th June, 1951.

**The Worshipful the Mayor,
Aldermen and Councillors,
City Council of Nairobi.**

Your Worship, Aldermen and Councillors,

**I have the honour to present to you my Annual Report
on the sanitary circumstances, sanitary administration, vital
statistics and the state of the public health of the City of Nairobi
for the year 1950, as required by the "Municipalities Ordinance,
1948" "The Medical Officers of Health Rules Section 2 (12.d.)"**

**A. T. G. THOMAS,
M.D., B.S., D.P.H.,
Medical Officer of Health.**

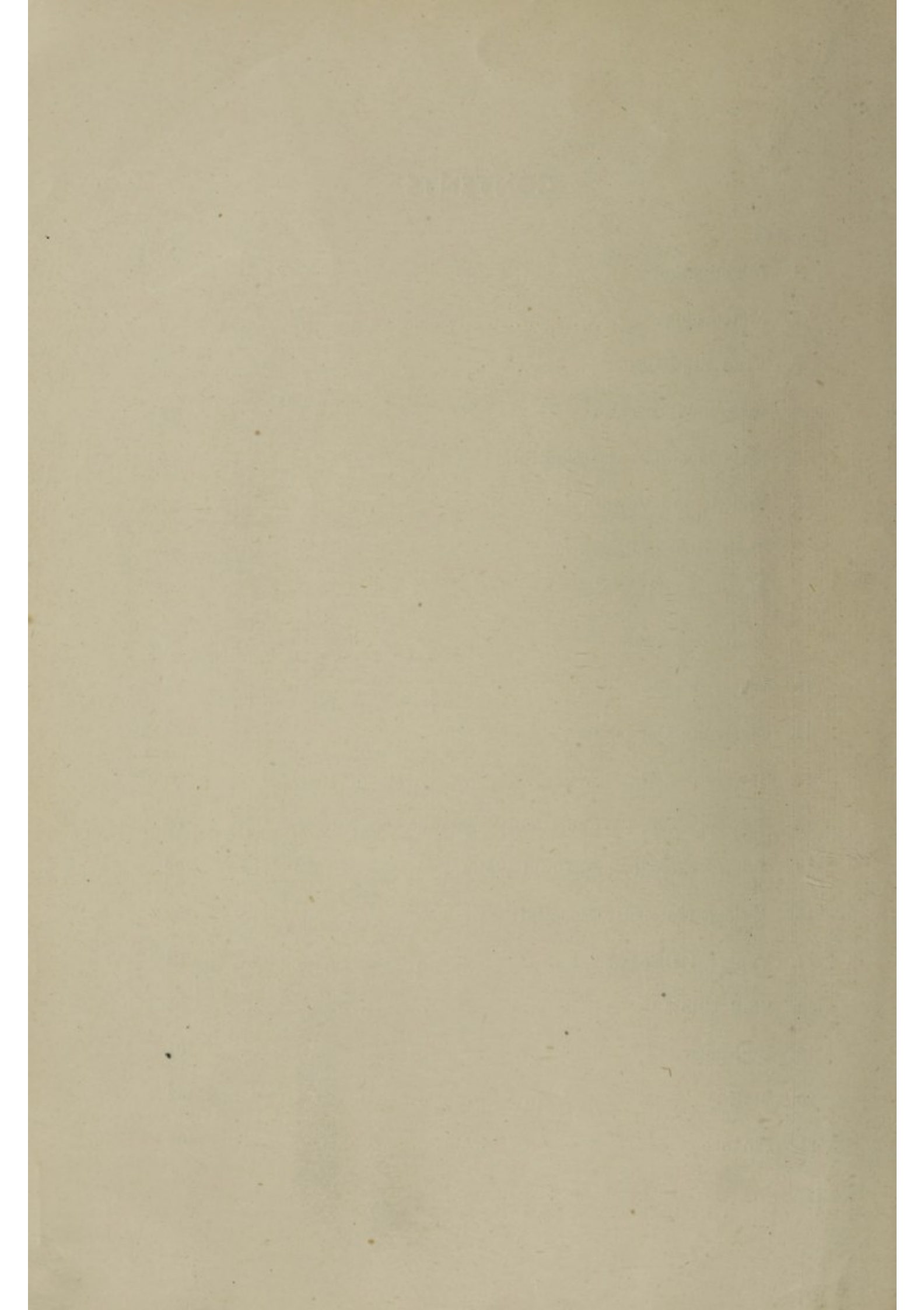
PUBLIC HEALTH COMMITTEE

DECEMBER 1950

Alderman J. R. Gregory, O.B.E.	...	(Chairman)
Councillor Mrs. Rayner	... ..	(Deputy Chairman)
H. W. The Mayor	... ..	(Councillor N. F. Harris)
The Deputy Mayor	... ..	(Alderman J. R. Maxwell)
Alderman Allah Ditta Qureshi, O.B.E.		
„ Udall, C.B.E.		
Councillor Alexander.		
„ Bakewell.		
„ Mrs. Khudabux.		
„ Ofafa.		
„ Pandit.		
„ Mrs. Small.		
„ Somen, M.B.E.		

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SECTION 1

INTRODUCTION

During 1950 Nairobi was raised to the status of a City. From the point of view of this department it is hoped that the accession of this status will act as a stimulus and as an encouragement to the ever-growing population to co-operate further in advancing towards a standard of decency, order and cleanliness in keeping with this dignity.

At the time of the Celebrations, many interesting and impressive examples of the dramatic advances between conditions here in 1900 and those in 1950 were presented to the public, and it seems appropriate that some reference to these should be included in this report inasmuch as Public Health is concerned.

Unfortunately, as in all reports dealing with public health and preventive medicine, the only means we have of making comparisons or assessing progress is by the analysis of vital statistics. By the study, in fact of columns of percentages and rates. If only these ranks of figures could be made to seem more "vital"!

Though they relate to living beings, their birth, their ailments and their passing, it is difficult to make them conjure up before the reader the atmosphere of the City as it really is — colourful, vigorous and growing — full of human problems and hopes and frustrations.

Annual Health Reports run no risk of becoming best sellers to the public — they carry no startling headlines, but they can repay study a good deal more than their sober form suggests, if the reader remembers that they are about real people and events which can often affect them personally in the future.

Records between 1900 and 1930 are of such a kind that comparisons with the present day are hardly possible. Moreover, it is not practicable to make any comparison before the introduction of the Local Government (Municipalities) Ordinance at the end of 1928, which became fully effective in 1930. This was the year in which the first Annual Report of the Medical Officer of Health of the Nairobi Municipality was produced.

In comparing its contents with this report for 1950 it must be borne in mind that the auxiliary services such as child welfare, V.D. treatment, and some others remained in Government hands, and this is of course reflected in the expenditure. Even so, it is interesting to note that in 1930, the cost of the Public Health Department excluding cleansing, was £6,993 of which £6,118 was defrayed by Government, leaving £875 to be borne by the Council. For 1950 the total cost of the Public Health services was £70,862, (to October), excluding cleansing. In 1930 the estimated population was 49,000, whereas in 1950 it was 136,500.

Expenditure of course, while necessarily related to the total population, also depends upon the extent and standard of the services provided.

Unfortunately, in those days, the infant mortality rate was not calculated by our present methods and it is difficult to compare it with that of today. It is noted, however, from the report, that plague caused 11.4% of all deaths and malaria 5%. Tuberculosis caused 4.8%. In 1950 there were no deaths from plague. There were 36 deaths from malaria out of a total of 1,466 deaths of all races and there were 151 Tuberculosis deaths out of this total. The general death rate was 16.20 for all races in 1930 and the outstanding figures in the Infectious Diseases Control columns are malaria 789 cases, and plague 112.

When the increase of the population is borne in mind the proportionate decrease in infectious disease is significant but it will be noticed that our present rate for tuberculosis shows a disturbing increase. This matter will be dealt with in detail later in the report.

It is interesting to see that many of the problems which are mentioned in the report are still with us to-day, though some of them in modified form. Reference is frequently made to staff difficulties in the Public Health Department which then possessed 3 District Sanitary Inspectors to cover an area of 34 square miles.

So much for the past!

THE YEAR'S PROGRESS

Housing :

As befitted the Jubilee year 1950 has been one of good progress in the operation and development of the Public Health Department. The preliminary work, begun in 1949, for attacking overcrowding and slum conditions bore more and more fruit and a total of 102 buildings were demolished. These were, and are, rapidly being replaced by new, clean and well designed premises. The work continues but its tempo is still regulated by the speed at which legal requirements can be fulfilled. Sometimes our attempts to obtain the demolition of even a worthless hovel give rise to a spate of flatulent and profitless advocacy which is time consuming to the staff and inimical to progress.

As had been stressed in previous Annual Reports there is one outstanding difference between Nairobi and most English cities.

The majority of the population in the latter is disciplined and law abiding, whereas in Nairobi the majority seek first to disregard or evade it. This means that those whose duty it is to enforce the law here have an uphill task since cases which in England could be dealt with by a simple request or notice so often have to be taken to Court, a tedious and time consuming process.

At the same time the face of the City shows steady improvement by the work of the City Engineer in paving of the streets.

Epidemic Disease :

The year passed without any epidemic capable of causing any anxiety, and in this connection it is interesting to note that we are at the

end of a 7-year plague cycle which began in 1916. If there is any truth in the cyclical nature of this disease, it is possible that it might appear in 1951, and this is a hint for extra attention to be given to rat control.

As regards malaria, the long rains were heavier than usual and a sudden increased demand for mosquito control was made. This was successful, and, while the malaria increased to some extent, it did not reach serious proportions.

Infectious Diseases Control Department :

The present policy of the operation of this department as regards malaria control is to adjust it as far as possible reducing use of oil and insecticides during dry periods and keeping a reserve in case of heavy rains.

While the incidence of malaria has been low for the past 5 or 6 years, it must be borne in mind that far from decreasing the risk of an epidemic, this risk is in fact, increased because natural immunity of the population of all races has fallen by now to a very low level owing to the absence of infection. It is to be noted that there were 613 cases in 1950 with 36 deaths against 302 cases with 14 deaths in 1949.

Drainage conditions are very little better in the City than they were at the time when malaria used to assume serious proportions during the rainy seasons and it is therefore desirable to take every precaution to see that an unexpected heavy rainfall at any time will not find us unprepared.

To help to meet this contingency the purchase of a mobile Todd Insecticidal Fog apparatus has been recommended.

Propaganda :

During the year, several new forms of propaganda were brought into operation, including the distribution of health leaflets, the designing of posters and publicity in the cinemas. These will have greater effect in the forthcoming year. The multi-lingual character of the City's population makes propaganda a somewhat difficult undertaking but it is felt that this is a most important branch of the Department's responsibilities.

Films were shown by Mr. Beechey at Kaloleni and Kariokor Clinics to about 100 women and children each week. Health Films have also been shown in some African and Indian day schools. There is a great demand for an extension of this service. Leaflets are distributed to the population of Nairobi in the water accounts. These leaflets deal very simply with various menaces which are responsible for the spread of disease and the means to get rid of them.

Slides are on show in the local cinemas to publicise the Public Health Department and sufficient are available for the next six months.

The Maternity Hospital :

The long awaited reconstruction of the Pumwani Maternity Hospital is now in sight and the preliminary work has been completed. It is hoped that building will start early in 1951.

The year under review has been a very difficult one as far as staff for the hospital has been concerned. In addition to the resignation of two of the European Sisters, the post of Welfare Worker fell vacant and it was some time before a suitable applicant could be found. The resignations were due to a contingency which is so apt to arise when recruiting female staff from the United Kingdom and that is, marriage; Recruitment for these posts is also not an easy matter since the work entails residence in the hospital and is much less popular than posts which enable people to live out.

Finally, at the end of the year, the Hospital lost the services of its Superintendent, Dr. Williams, who had been there for seven years. Dr. Williams had given of her best during a very difficult time in the history of the hospital. During her service there the work increased enormously, reaching in fact, a record of 289 births in one month in the latter part of 1950. The increase in work combined with inadequate accommodation and staff difficulties make it the more creditable to her that she succeeded in maintaining a very high standard of efficiency. By her departure to another appointment this department will lose a very valued and efficient worker.

Staff Clinic :

Early in the year a staff clinic was established at the Town Hall for the betterment of Asian and African members of the Council's staff. The object of this was to provide facilities for the treatment of ailments without having recourse to the general dispensary (with consequent delay) and to see if the amount of absenteeism from duty owing to sickness could be reduced. The results have been very satisfactory indeed. Unfortunately, records capable of showing previous degree of absenteeism are not available but the general impression is that there has been a very substantial reduction. The services of the clinic are also appreciated by the staff. Supervision is given by Dr. Cruickshank, who also deals with the Inoculation Centre.

African Maternity & Child Welfare :

During the year the work of the African Maternity and Child Welfare Clinics continued to grow. The preliminary moves were made in the important re-orientation of policy which had become necessary owing to increasing demands on these services. Briefly, the new policy is to meet any increase in the services by the employment of well trained African Assistants under the supervision of European Health Visitors. Coincidentally, expansion of accommodation will be by the development of small units — in fact, modified dwelling houses. This will avoid over-provision of accommodation since each unit can only deal with a certain area around it.

Asian Maternity & Child Welfare :

In October the new and attractive Indian Child Welfare Centre in Bohra Street was formally opened. This marks another step forward in the development of this important service and provides a type design which we hope can be used as a basis for replacing the existing unsatisfactory clinic at Pangani.

During the year the training of Asian Health Visitors proceeded with a view to their obtaining the Government Certificate.

Municipal Market — Stewart Street :

At first sight it might seem that the administrative control of the Municipal Market would hardly come appropriately under the Public Health Department. In fact, however, two of the most important aspects of its conduct are very much the concern of the department. One is as regards its cleansing service and the other in respect of the handling of food. When, therefore, complaints regarding the condition of the market were made to the Public Health Committee it was decided to place it under the department's control. As soon as possible a vigorous campaign of cleaning up was started and the results are evident. Quite a lot remains to be done and the work continues.

By-laws :

During 1950 further useful steps were taken towards improvement of the legal armament available to the public health department. This included the production of by-laws regarding Nursing Homes, the amendment of the By-laws relating to Ice-Cream, and the preparation of by-laws for the control of day nurseries. It is probable that such extensions as these will continue to be necessary for a number of years to come in order to keep pace with the steady development of the City.

It is very gratifying to record that by co-operation with the Town Clerk and the District Commissioner, the removal was at last secured of the herds of cattle, which have for a number of years caused great disorder and inconvenience in certain parts of the Municipal area.

Cleansing Services :

The equipment of the cleansing services generally still lags behind the rapid development of the City, and it is as yet not possible to give the services which might be regarded as entirely adequate. The gap is, however, narrowing. Vehicles and equipment which have been awaited for some time are now coming to hand and financial provision has been made for forward ordering. It can be said with confidence that the time can now definitely be foreseen when a really satisfactory degree of public cleansing can be maintained.

As regards the actual disposal of refuse, a modest experiment in composting carried out at the refuse tip during the year proved satisfactory and an analyst's report on the resulting product justified an expansion of the scheme, which might well ultimately embrace all the City's refuse enabling us to provide a valuable agricultural aid to local farmers, a service which is of particular importance in this area where soil enrichment is so urgently needed.

Staff :

During the year in addition to the resignation of Dr. Williams already referred to, Dr. L. S. Anderson the Deputy Medical Officer of Health and Mr. Van Someren, the City Entomological Officer, also resign-

ed. We also lost the services of a number of other members of the staff. By the end of the year the advertisements circulated to obtain recruits for these posts had produced very unsatisfactory results. This is a matter of considerable anxiety.

Complaints :

The Public Health Department has three channels by which it becomes aware of any delay or deficiency in the operation of its branches, or of any nuisance needing attention. The first is by complaints made directly by the public; the second by the public through their representatives on the Council, and thirdly by routine inspections. In view of the very large area of the City and the natural limitations of staff, the department particularly welcomes co-operation from the public in using the first two channels. Nuisances which may not be discovered for some time by routine inspections can be much more speedily dealt with if reported direct by telephone or in writing.

During the period covered by this report, as in past years, frequent consultations have been held with the Hon. Director of Medical Services and his staff and acknowledgement is made of the high degree of helpful co-operation which has been accorded to us.

It is once again a pleasure to pay tribute to the loyalty and industry of the Staff and to the co-operation of the Public Health Committee with its Chairman, Dr. J. R. Gregory, O.B.E.

SECTION 2

METEOROLOGY

SOME METEOROLOGICAL DETAILS — EASTLEIGH AERODROME 1950.

(From E. A. Meteorological Department)

1950	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Mean Maximum	81.0	83.3	78.9	76.1	75.1	73.5	71.2	73.2	75.7	80.4	77.0	77.6	
Mean Minimum	56.4	56.2	59.2	59.4	58.2	55.8	54.3	54.8	55.5	56.4	57.6	56.4	
Mean	68.7	69.8	69.1	67.8	66.7	64.7	62.8	64.0	65.6	68.4	67.3	67.0	
RAINFALL (inches)	28.23	0.51	4.42	7.57	2.12	0.97	0.16	2.34	0.05	4.59	3.27	0.29	
DAYS OF RAIN	5	2	11	19	10	7	3	11	3	3	14	5	
AVERAGE RAINFALL OVER 35 YEARS.	33.59	1.49	1.98	5.04	7.65	4.83	1.57	0.56	0.98	0.92	2.09	3.88	2.60
RELATIVE HUMIDITY % 0830 (E.A.S.T.)	71	68	87	90	87	85	85	84	80	77	83	79	
1430	38	30	48	58	56	55	55	51	44	35	48	45	
MEAN ATMOSPHERIC	0830 E.A.S.T.	838.5	839.3	839.1	838.9	840.4	841.1	841.5	841.2	842.0	840.7	839.7	839.6
PRESSURE (mbs)	1430	835.2	835.9	836.2	836.4	838.1	838.8	839.4	838.7	839.0	836.8	836.4	836.4

SOME FIGURES OF NAIROBI RAINFALL — 1897—1950

Readings taken at Nairobi Railway Station

Average yearly rainfall 1897 — 1950	...	...	35.1 inches.
Average yearly rainfall 1901 to 1925	...	...	37.81 inches.
Average yearly rainfall 1926 to 1950	...	...	32.33 inches.

Average yearly rainfall 10 year periods.

1901 to 1910	...	...	37.16 inches.
1911 to 1920	...	...	40.71 inches.
1921 to 1930	...	...	34.90 inches.
1931 to 1940	...	...	31.98 inches.
1941 to 1950	...	...	30.60 inches.

NOTE ON THE CLIMATE OF NAIROBI CITY

The City of Nairobi, situated at an altitude of about 5,500 feet above sea level and some 300 miles from the Coast enjoys what may be described as a continental tropical climate. The characteristic features of such a climate in the tropics are (1) a very small seasonable change of temperature (2) a considerable daily range of temperature and humidity and (3) a rainfall dependent on the sun's declination. At an altitude of 5,500 feet the influence of the monsoon air current is slight except in so far as they modify or determine the seasonal rainfall.

The mean yearly temperature corresponds approximately to the mean maximum temperature in spring at Kew, but it gives no idea of the actual conditions in the town as, superimposed on this almost unvarying mean temperature is a large daily range which, in the mean, amounts to 15°F in May and 21°F in February.

The effect of the climatic conditions upon new European arrivals is to create the idea that the climate is similar to that in England. This is not true however, because, as can be seen, warm sunny days are quickly followed by cold nights and precautions should be taken against these sudden alterations in temperature. It is interesting to note in this connection that pneumonia ranks high as a cause of death in all races.

Relative Humidity also has a very marked daily range. In the early morning it frequently reaches saturation and may fall to 10% in the middle of the day on clear sunny days in February or March.

The mean number of hours of bright sunshine is shown by the following figures which give the mean of the totals for each month.

	Hrs.		Hrs.		Hrs.
January	286	May	176	September	156
February	238	June	140	October	203
March	256	July	141	November	210
April	210	August	118	December	257

There is about 30% more sunshine in the afternoon than in the morning and it follows that Westerly slopes receive more sunshine than Easterly. Not only is the amount of sunshine considerable but the quality in short wave radiation has been shown to be very high.

The seasonal variation of rainfall is partly due to the sun's position — intense instability rain (thunderstorm type) occurring shortly after the equinoxes — and partly due to the seasonal wind currents. Although they do not reach high velocities at the altitude of Nairobi, nevertheless they produce a marked effect on the seasonal rainfall which reaches a first maximum when the S.E. monsoon sets in (in April) and a second maximum at the time of the N.E. monsoon (in November).

During the months of June to September, while the S.E. monsoon prevails in the Coastal regions, a cloud cap forms over the Kenya Highlands: rain is generally light and falls mainly during the early morning hours. During this period the night and morning temperatures may fall to 45°F and even to 42°F on the ground.

The most trying season of the year is during the hot dry period, about 6 weeks before the rains break in March. At this time the midday temperatures rise to nearly 90°F., the relative humidity may fall to 10% and a moderately strong Easterly or East North East wind prevails.

SECTION 3

VITAL STATISTICS

GENERAL

Area of City	...	...	...	...	20,480 acres or 32 sq. miles.
Population (Estimate)	...	...	...	...	136,500
Birth Rate (per 1000 population)	...	...	...	...	36
Still-birth Rate (per 1000 live and still-births)	...	...	...	...	41.8
Maternal Mortality Rate (per 1000 live and Still-births)	...	...	...	...	1.4
Infant Mortality Rate (Deaths under one year per 1,000 live births)	...	...	...	...	97.2
Death Rate (Corrected) (per 1000 population)	...	...	...	...	10.7
Death Rate (per 1000 population) from :—					
(a) Diseases of Heart & Circulatory System	...	...	...	...	0.32
(b) Cancer (all forms)	...	...	...	...	.31
(c) Respiratory Diseases	...	...	...	...	2.3
(d) Tuberculosis	...	...	...	...	1.16
(e) Violence	...	...	...	...	1.04
(f) Disease of Nutrition	...	...	...	...	.24

The figures which follow are based upon the estimate of population by the East African Statistical Department and, as such, must be taken as approximate only. The figures show that the population of Nairobi has increased by some 8,500 people, or 6.5% over 1949. This total is made up of an increase of 2,500 or 20.8% in the European population, 2,000 or 4% increase in Asian population and 4,000 or 6.5% increase in African population. It is interesting in passing to compare the present day population with that in 1929, the year following the passing of the Local Government Ordinance. In that year Nairobi's population numbered 47,000 souls. Thus in 21 years the population as a whole has trebled. Race by race the European population has trebled, the Asians have increased five-fold and the African more than doubled. The sex distribution in the European population is equal, among the Asians the ratio of males to females is 3 to 2 whereas the African ratio is 4 to 1 in favour of the males. This fact is understandable since there is a drift of African males into Nairobi for employment while the females stay behind to till the shambas.

In considering the vital returns in more detail among the European section of the population, a few words of caution are necessary. We are dealing here with very small numbers and a slight variation of one or two in the returns during the year may produce a considerable variation in the rates. The European births are down by 40 over the 1949 figures, representing a decrease of about 12.5%. This decrease has come after a 4-year increase in rate which was apparent throughout the world in the

post war era. Thus it appears that the post war boom may have come to an end. The Asiatic birth rate shows a general upward trend whereas the African rate has remained more or less static.

Expressing these figures in relation to the Mean rate over the previous 5 years we find the following :—

1950 European birth rates show a 9% decrease over the 5 year Mean.

1950 Asian birth rates show a 19% increase over the 5 year Mean.

1950 African birth rates show a 20% increase over the 5 year Mean.

There has been a general increase in the year of infant deaths among all races during 1950 as shown in table 1.

This fact is regrettable since there was in 1949 a considerable improvement in the figures over the previous years.

A glance at death rate figures for 1950 show an overall rate of 10.7. This figure is identical with the 1949 figure and, incidentally, identical with the figure for the City of Oxford, in the year 1949; a City comparable in population with Nairobi. However, the Nairobi death rate is 2 points lower than the average death rate of 5 English boroughs of comparable size in 1949 and one point lower than the death rate for the whole of England in 1949. When we compare the Nairobi European death rate (8.6 per 1,000) with that of (a) the average death rate of 5 English boroughs and (b) the whole of England, there is a larger display in favour of Nairobi. The difference between the European births and death rates in Nairobi appears sufficient to produce an appreciable increase in population over 20 or 30 years even when these comparatively small figures are taken into consideration.

Asian and African death rates have remained fairly constant.

Table 1

Rates per 1000 except where stated.			Average of 5 English Boroughs 1949		Whole of England 1949
		Nairobi Overall	Nairobi Europeans		
Birth Rate	... ..	36	19.7	17.58	16.7
Still-birth Rate	... ..	1.6	.2	.45	.39
Death rate	... ..	10.7	8.6	12.10	11.7
Infant Mortality Rate	...	97.2	39	38.56	32.0
T.B. Death Rate per 10,000		11.6	1.4	5.8	4.5

Comparative Death Rates.

The study of the death rates of the commoner diseases show some interesting facts.

The rate for diseases of the heart and circulatory system for Nairobi are approximately one tenth of the English rates, while the rates for cancer are about one fifth.

It appears that the stresses and strains of modern life are much less exacting on the resident of Nairobi than on residents in the United Kingdom. On the other hand the death rate from respiratory diseases is considerably higher in Nairobi (2.3 per 1,000, England 1.13 per 1,000). It is well known that among Africans the rate of severity of respiratory diseases is high and this fact has modified the overall death rate for Nairobi. Deaths from violence are three times commoner than in England, largely due to the part played by traffic accidents which again are confined mostly to the African population. Tuberculosis will be commented upon in the Infectious Diseases Section, but suffice it to say here that it is $2\frac{1}{2}$ times more prevalent than in England.

Table 2
Summary of Vital Statistics
(crude figures only)

	Estimated Population	Deaths	Death Rate per 1000	Live births	Birth Rate per 1000	Infant deaths	Infant Mor- tality	Live & Still births	Mater- nal deaths	Rate per 1000 births
Europeans	14,500	124	8.6	286	19.7	11	38.5	289	2	6.6
Asians	52,000	360	7.0	2891	55.6	168	57.7	3003	3	1.0
Africans	70,000	982	14.0	1794	25.6	304	169.5	1896	2	.9
TOTALS	136,500	1466	10.7	4971	36.0	483	97.2	5188	7	1.4

Table 3
Population of Nairobi 1950
(Estimated by the E.A. Statistical Department)

	Male			Female		Total
Europeans	7,250	7,250	14,500
Asians	31,200	20,800	52,000
Africans & Others	56,000	14,000	70,000
TOTAL	94,450	42,050	136,500

Table 4
Population Figures 1929 and 1947 to 1950

	1929	1947	1948	1949	1950
Europeans	...	4,479	10,500	10,830	12,000
Asians	...	10,978	39,000	41,810	50,000
Africans & Others	...	32,000	64,000	65,939	66,000
TOTALS	...	47,457	113,500	118,579	128,000

Table 5
Number of Births Notified in 1950.

RACE	RESIDENTS			NON-RESIDENTS			TOTALS		
	S. Births	L. Births	Total	S. Births	L. Births	Total	S. Births	L. Births	Total
Europeans	3	286	289	5	151	156	8	437	445
Asians	112	2891	3003	1	21	22	113	2912	3025
Africans & Others	102	1794	1896	86	810	896	188	2604	2792
TOTALS	217	4971	5188	92	982	1074	309	5953	6262

Table 6
Still-Births

Race			RESIDENTS			NON-RESIDENTS		
			Male	Female	Total	Male	Female	Total
Europeans	...		2	1	3	3	2	5
Asians	...	...	63	39	112	1	—	1
Africans	...	...	50	52	102	54	32	86
TOTALS :—					217	92		

Table 7
Live Births for Preceding 5 years

Race	1945	1946	1947	1948	1949 &	1929
Europeans ...	211	168	236	226	326	152
Asians ...	1515	1566	1668	2250	2656	136
Africans & Others ...	1276	1351	1346	1554	1703	26
TOTALS	3002	3085	3250	4070	4685	314

Table 8
Birth Rates

Live Births per 1000 of population (corrected)

Europeans	19.7
Asians	55.6
Africans	25.6

Table 9**Birth Rates for Preceding Five Years.**

Race		1945	1946	1947	1948	1949	1950	Mean
European	...	20.5	15.9	17.5	24.6	27.2	19.7	21.6
Asian	...	41.5	41.3	43.9	53.9	53.1	55.1	46.7
African & Others		19.3	20.4	17.5	23.6	25.8	25.6	21.3

1950 European Birth Rates show 5% decrease in 5 year Mean

„ Asian „ „ 19% increase over 5 year Mean

„ African „ „ 20% increase over 5 year Mean

Table 10**Infant Deaths**

Race			RESIDENTS			NON-RESIDENTS			
			Male	Female	Total	Male	Female	Total	
Europeans	...		2	9	11	—	—	—	
Asians	...	...	111	57	168	—	1	1
Africans	...	...	181	123	304	114	78	192
TOTALS			...	294	189	483	114	79	193

Table 11**Infant Mortality Rate**

European	...	...	...	38.5	per 1000 live births.
Asian	...	...	...	57.7	per 1000 live births.
African & Others			...	169.5	per 1000 live births.

Table 12**Infant Mortality Rate**

(Deaths of Infants under one year per 1,000 live births)

(Corrected for Outward Transfer)

Comparative rates for preceding 5 years.

Race		1945	1946	1947	1948	1949	1950
European	...	33	48	64	75	25	39
Asian	...	56	60	98	67	57	58
African & Others		131	148	224	187	168	170

Table 13
Maternal Mortality

Race	Live & Still-births		Maternal Deaths	Rate per 1000 Births
Europeans	289	2	6.6
Asians	3003	3	1.0
Africans	1896	2	.9
TOTALS	5188	7	1.4

Table 14

Deaths

Race	RESIDENTS			NON-RESIDENTS		
	Male	Female	Total	Male	Female	Total
Europeans ...	71	53	124	13	6	19
Asians ...	221	139	360	11	1	12
Africans ...	555	327	982	650	287	937
TOTALS ...	847	519	1466	674	294	968

Table 15

Death Rates

(Rate per 1,000 of population)

	Deaths	Rate	Ratio	
			Male	Female
European ...	124	8.6	7	5
Asian ...	360	7.0	3	2
African & Others	982	14.0	8	5

Table 16

Death Rates

Comparative rates for the preceding 5 years.

Race	1945	1946	1947	1948	1949	1950
Europeans ...	7.5	7.5	7.0	10.0	9.8	8.6
Asians ...	5.9	6.3	9.0	8.2	6.6	7.0
Africans & Others	9.6	10.9	11.8	12.0	13.8	14.0

Table 17

Summary of the Causes of Death

		Europeans	Asians	Africans and Others	Totals	Percentage of all Deaths in 1950	Percentage of all Deaths in 1949	Death Rate 1950	Death Rate 1949
1. Infectious & Parasitic Diseases	...	6	15	259	280	19.10	16.5	2.05	1.75
2. Cancer and other Tumours		16	11	15	42	2.9	2.5	0.31	0.27
3. Rheumatism & Diseases of Nutrition, etc.	...	2	6	25	33	2.35	2.4	0.24	0.25
4. Diseases of the Blood, etc.		2	8	6	16	1.1	1.3	0.12	0.13
5. Chronic Poisoning	...	—	—	3	3	0.2	0.4	0.03	0.05
6. Diseases of the Nervous System	...	15	18	40	73	5.0	4.4	0.54	0.55
7. Diseases of the Circulatory System	...	23	11	10	44	3.0	4.0	0.32	0.42
8. Diseases of the Respiratory System	...	15	82	220	317	21.6	22.5	2.3	2.39
9. Diseases of the Digestive System	...	13	38	81	132	9.0	12.8	0.97	1.36
10. Non-venereal diseases of the genito-urinary system	...	2	4	13	19	1.3	2.3	0.14	0.24
11. Diseases of pregnancy, childbirth and the puerperal state	...	2	3	2	7	0.5	0.4	0.05	0.05
12. Diseases of the Skin	...	—	—	2	2	0.1	—	0.01	—
13. Diseases of the Bones and Joints	...	—	—	—	—	—	—	—	—
14. Congenital Malformations		—	8	6	14	1.0	0.7	0.10	0.08
15. Diseases peculiar to the first year of life	...	6	83	94	183	12.5	12.7	1.35	1.39
16. Senility, old age	...	2	1	1	4	0.3	0.7	0.03	0.08
17. Deaths from violence	...	11	35	98	140	9.6	7.8	1.04	0.83
18. Ill-defined causes	...	9	37	108	154	10.5	8.6	1.13	0.91
Total of all deaths :—		124	360	982	1466	100	100	10.7	10.7

Table 18
Causes of Infant Deaths.
(Under One Month)

Cause		Europeans	Asians	Africans & Others	Total
International List No.					
12.	Tetanus	...	—	1	1
24.	Septicaemia	...	—	3	3
25.	Gonococcal Infection	...	—	2	2
30.	Congenital Syphilis	...	—	20	20
28.	Malaria	...	—	1	1
106.	Bronchitis	...	1	—	1
107.	Broncho-pneumonia	...	5	5	10
108.	Lobar Pneumonia	...	—	1	1
109.	Pneumonia — undefined	...	9	2	11
115.	Stomatitis	...	—	1	1
119.	Enteritis	...	—	3	3
119.	Gastro-enteritis	...	5	2	7
157.	Congenital malformation	...	1	—	1
157.	Spina Bifida	...	—	1	1
157.	Hydrocephalus	...	1	3	4
157.	Micro-cephalic monster	...	—	1	1
157.	Congenital heart disease	...	3	1	4
158.	Malnutrition	...	1	4	5
158.	Congenital Debility	...	1	1	2
159.	Prematurity	...	2	51	62
160.	Birth injury	...	1	6	13
161.	Asphyxia, atelectasis	...	2	7	7
161.	Jaundice	...	—	1	1
161.	Icterus Neonatorum	...	1	7	—
161.	Maternal toxæmia	...	—	2	—
200.	Undefined	...	—	1	13
Totals		...	6	101	148
					255

Table 19
Causes of Infant Deaths
(From One Month to One Year)

Cause		Europeans	Asians	Africans & Others	Total	
International List No.						
9.	Whooping Cough	...	—	1	1	
13.	Pulmonary tuberculosis	...	—	3	3	
14.	Tuberculous meningitis	...	1	4	5	
24.	Pneumococcal pyaemia	...	—	1	1	
27.	Bacillary Dysentery	...	1	1	2	
28.	Malaria	...	—	6	6	
30.	Congenital Syphilis	...	—	5	5	
73.	Anaemia	...	1	1	2	
73.	Sickle-celled anaemia	...	—	1	1	
81.	Pneumonoccal meningitis	...	—	5	5	
81.	Meningitis, unspecified	...	1	—	2	
106.	Bronchitis	...	—	2	2	
107.	Broncho-pneumonia	...	19	55	78	
108.	Lobar pneumonia	...	1	1	2	
109.	Pneumonia undefined	...	11	10	21	
110.	Pleural effusion	...	1	—	1	
113.	Emphysema	...	1	—	1	
119.	Diarrhoea	...	8	6	14	
119.	Enteritis	...	1	3	4	
119.	Gastro enteritis	...	7	20	28	
122.	Intussusception	...	1	—	1	
122.	Intestinal obstruction	...	2	—	3	
129.	Peritoneal abscess	...	—	1	1	
130.	Acute nephritis	...	—	1	1	
157.	Congenital heart disease	...	1	—	1	
157.	Spina bifida	...	2	—	2	
158.	Marasmus	...	5	3	8	
158.	Congenital debility	...	2	—	2	
159.	Prematurity	...	—	3	3	
160.	Intra-cranial haemorrhage	...	1	—	1	
181.	Burns	...	—	1	1	
200.	Pyrexia of unknown origin	...	—	—	1	
200.	Undefined	...	1	22	23	
Totals		...	5	67	156	228

Table 20
Causes of Death
(Corrected for Outward Transfer only)
International List 1938

GROUP 1.—Infectious and Parasitic Diseases.

		Europeans	Asians	Africans & Others	Total
1. Typhoid	...	—	1	10	11
6. Cerebro Spinal Meningitis	...	—	—	1	1
9. Whooping Cough	...	—	—	6	6
10. Diphtheria	...	—	2	1	3
12. Tetanus	...	—	—	7	7
13. Pulmonary Tuberculosis	...	2	2	108	112
14. Tuberculous meningitis	...	—	3	10	13
15. Tuberculous abdomen	...	—	—	1	1
15. Tuberculous peritonitis	...	—	—	3	3
19. Tuberculous adenitis	...	—	—	1	1
21. Tuberculous pericarditis	...	—	—	7	7
22. Miliary Tuberculosis	...	—	—	14	14
24. Pneumococcal pyaemia	...	—	—	1	1
24. Septicaemia	...	—	1	7	8
25. Gonococcal arthritis	...	—	—	1	1
25. Gonococcal infection	...	—	—	2	2
27. Amoebic dysentery	...	—	—	1	1
27. Bacillary dysentery	...	—	2	8	10
28. Malaria	...	2	2	32	36
29. Trypanosomiasis	...	—	—	1	1
30. Syphilis	...	—	1	12	13
30. Congenital syphilis	...	—	—	20	20
33. Influenza	...	1	1	—	2
36. Poliomyelitis	...	1	—	1	2
37. Encephalitis Lethargica	...	—	—	1	1
42. Schistosomiasis	...	—	—	1	1
43. Actinomycosis	...	—	—	1	1
44. Glandular fever	...	—	—	1	1
Totals	...	6	15	259	280

GROUP 2.—Cancer and Other Tumours.

	Europeans	Asians	Africans & Others	Total
45. Cancer of the pharynx	...	1	—	1
46. Cancer of the liver	...	2	4	6
46. Cancer of the oesophagus	...	2	4	6
46. Cancer of the rectum	...	—	—	3
46. Cancer of the pancreas	...	—	—	1
46. Cancer of the stomach	...	2	1	4
47. Cancer of the lung	...	—	1	4
50. Cancer of the breast	...	1	1	6
51. Cancer of the prostate	...	—	—	1
52. Cancer of the bladder	...	—	—	1
54. Sarcoma of the spine	...	—	1	1
55. Cancer of the thyroid	...	—	—	1
55. Cancer of the throat	...	—	—	1
55. Cancer, unspecified	...	3	3	6
Totals	...	16	15	42

GROUP 3.—Rheumatism, Diseases of Nutrition.

	Europeans	Asians	Africans & Others	Total
58. Rheumatic carditis	...	1	3	4
61. Diabetes mellitus	...	5	—	6
66. Toxaemia	...	—	1	2
68. Beri-beri	...	—	1	1
69. Kwashiokor	...	—	20	20
Totals	...	6	25	33

GROUP 4.—Diseases of the Blood.

	Europeans	Asians	Africans & Others	Total
14. Tuberculous meningitis	...	3	10	13
73. Sickie-celled anaemia	...	—	1	1
73. Anaemia	...	6	4	10
74. Myeloid leukaemia	...	2	1	5
Totals	...	8	6	16

GROUP 5.—Chronic Poisoning.

	Europeans	Asians	Africans & Others	Total
77. Alcohol poisoning	...	—	2	2
79. Believed antimony poisoning	...	—	1	1
Totals	...	—	3	3

GROUP 6.—Diseases of the Nervous System.

	Europeans	Asians	Africans & Others	Total
80. Encephalitis	... 1	1	1	3
81. Meningitis	... 1	3	28	32
83. Apoplexy	... —	—	2	2
83. Cerebral haemorrhage, thrombosis	13	11	6	30
84. Insanity, general debility	... —	—	3	3
84. Schizophrenia	... —	—	1	1
85. Epilepsy	... —	1	4	5
86. Convulsions (under 5)	... —	2	—	2
87. Convulsions (over 5)	... —	1	—	1
Totals	... 15	18	40	73

GROUP 7.—Diseases of the Circulatory System.

	Europeans	Asians	Africans & Others	Total
90. Pericardial adhesions	... —	—	1	1
92. Mitral valve disease	... —	1	5	6
93. Myocarditis	... 3	—	4	7
94. Coronary Thrombosis	... 16	3	—	19
95. Heart disease, undefined	... 1	3	—	4
97. Arteriosclerosis	... 2	—	—	2
98. Gangrene	... —	1	—	1
99. Mesenteric thrombosis	... 1	—	—	1
102. Hypertension	... —	3	—	3
Totals	... 23	11	10	44

GROUP 8.—Diseases of the Respiratory System.

	Europeans	Asians	Africans & Others	Total
106. Bronchitis	... 5	2	9	16
107. Broncho-pneumonia	... 1	35	115	151
108. Lobar pneumonia	... 2	1	34	37
109. Pneumonia, unspecified	... 3	31	58	92
110. Pleurisy	... —	1	—	1
110. Pleural effusion	... —	1	—	1
111. Pulmonary oedema, embolism	... 2	6	3	11
112. Asthma	... 2	3	—	5
113. Emphysema	... —	1	—	1
114. Lung abscess	... —	1	1	2
Totals	... 15	82	220	317

GROUP 9.—Diseases of the Digestive System.

	Europeans	Asians	Africans & Others	Total
115. Stomatitis	...	—	1	1
118. Gastric Erosion	...	—	1	1
119. Diarrhoea (under 2 yrs)	...	8	6	14
119. Enteritis (under 2 yrs)	...	1	6	7
119. Gastro-enteritis (under 2)	...	12	22	35
120. Gastro-enteritis (over 2)	...	6	24	32
120. Colitis	...	—	—	1
121. Appendicitis	...	1	—	1
121. Paralytic ileus	...	—	—	3
122. Intussusception	...	1	—	1
122. Intestinal obstruction	...	2	4	8
123. Intestinal haemorrhage	...	—	1	1
124. Cirrhosis of the liver	...	3	7	12
125. Hepatitis	...	4	5	9
126. Cholecystitis	...	—	—	1
129. Peritonitis	...	—	3	4
129. Peritoneal abscess	...	—	1	1
Totals	...	13	81	132

GROUP 10.—Non-Venereal Diseases of the Genito-Urinary System.

	Europeans	Asians	Africans & Others	Total
130. Acute nephritis	...	1	4	5
131. Chronic nephritis	...	1	6	7
132. Uraemia	...	2	1	5
133. Hydronephrosis	...	—	2	2
Totals	...	4	13	19

GROUP 11.—Diseases of Pregnancy, Child-birth & the Puerperium.

	Europeans	Asians	Africans & Others	Total
143. Ante-partum haemorrhage	...	1	—	1
146. Retained placenta	...	1	1	2
147. Puerperal embolism	...	1	—	1
149. Obstetric shock following Caesarean Section	...	—	—	1
149. Obstetric shock	...	—	1	2
Totals	...	3	2	7

GROUP 13.—Diseases of the Skin.

	Europeans	Asians	Africans & Others	Total
153. Dermatitis	...	—	2	2
Totals	...	—	2	2

GROUP 14.—Congenital Malformations.

		Europeans	Asians	Africans & Others	Total
157. Congenital malformations, unspecified	...	—	1	—	1
157. Spina bifida	...	—	2	1	3
157. Hydro-cephalus	...	—	1	3	4
157. Micro-cephalic monster	...	—	—	1	1
157. Congenital heart disease	...	—	4	1	5
Totals	...	—	8	6	14

GROUP 15.—Diseases Peculiar to the First Year of Life.

		Europeans	Asians	Africans & Others	Total
158. Malnutrition	...	—	1	4	5
158. Congenital debility	...	—	3	1	4
158. Marasmus	...	—	5	3	8
159. Prematurity	...	2	51	65	118
160. Intra-cranial haemorrhage	...	—	1	—	1
160. Birth injuries	...	1	6	13	20
161. Asphyxia, atelectasis	...	2	7	7	16
161. Jaundice	...	—	—	1	1
161. Icterus Neonatorum	...	1	7	—	8
161. Maternal toxæmia	...	—	2	—	2
Totals	...	6	83	94	183

GROUP 16.—Senility, Old Age.

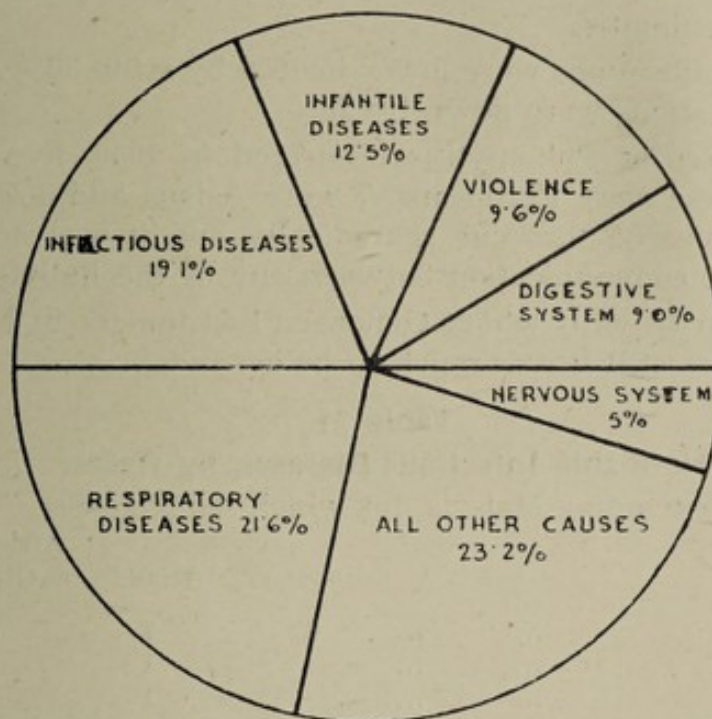
		Europeans	Asians	Africans & Others	Total
162. Senility, old age	...	2	1	1	4
Totals	...	2	1	1	4

GROUP 17.—Deaths from Violence.

	Europeans	Asians	Africans & Others	Total
163. Suicide by poisoning ...	1	2	—	3
164. Suicide by hanging ...	—	—	5	5
164. Suicide by firearms ...	1	—	—	1
164. Suicide by explosives ...	—	1	—	1
166. Homicide by firearms ...	—	1	2	3
167. Homicide by stab-wounds ...	—	2	10	12
168. Homicide by unspecified means ...	—	—	2	2
169. Railway accidents ...	—	—	4	4
170. Motor vehicle accidents ...	3	7	18	28
171. Other road accidents ...	3	9	34	46
178. Accidental absorption of carbon monoxide gas ...	—	1	—	1
179. Accidental poisoning by carbon tetra- chloride & oil of chenopodium ...	—	—	1	1
181. Accidental burns ...	—	9	7	16
182. Asphyxia by inhaling vomit ...	1	—	2	3
182. Other accidental mechanical suffoca- tion, unspecified ...	—	1	1	2
183. Accidental drowning ...	1	1	4	6
184. Accidental gun-shot wounds ...	1	—	—	1
186. Accidental injuries by falls ...	—	1	4	5
195. Accidental explosion ...	—	—	1	1
198. Judicial hanging ...	—	—	3	3
Totals ...	11	35	98	144

GROUP 17.—III-defined Causes of Death.

	Europeans	Asians	Africans & Others	Total
200. "Natural Causes" ...	1	5	78	84
200. Malnutrition ...	—	1	10	11
200. Heart failure ...	6	31	20	57
200. Post-operative shock ...	1	—	—	1
200. Pyrexia of unknown origin ...	1	—	—	1
Totals ...	9	37	108	154

CAUSES OF DEATH**Main Groups Per Cent.**

SECTION 4

INFECTIOUS DISEASES

In general there has been a noticeable reduction in the number of cases of infectious disease notified during the year 1950, within the Municipality. This is especially so with regard to the infectious diseases of a more serious nature. A marked exception is, of course, Tuberculosis; comments on this appear later.

The actual number of infectious diseases notified was 1101, a reduction of 120 over the 1949 figures. However, there was a 25% increase in the notifications of Tuberculosis these cases mounting from 305 to 387. Chickenpox was largely confined to Africans in 1950 and the number of cases reported showed a 25% decrease.

Diphtheria notifications were happily low (12) as were those of Cerebrospinal Meningitis.

Typhoid notifications were lower in 1950 by some 30% and Bacillary Dysentery notifications were down by 25%.

Sixteen cases of Poliomyelitis occurred in 1950, five less than in 1949. Six of these were Europeans, 7 were Asians and 3 were Africans. All the cases appeared to occur sporadically and it was not possible to trace any definite communication between any of the individual cases.

The regularity with which General Practitioners in Nairobi notify Infectious Diseases still leaves much to be desired.

Table 21
Notifiable Infectious Diseases, by Races.
(excluding Malaria, for which see page 30)

		Europeans	Asians	Africans & Others	Total
Acute poliomyelitis	...	6	7	3	16
Anthrax	...	—	1	9	10
Blackwater Fever	...	—	1	—	1
Cerebro-spinal Fever	...	—	—	1	1
Diphtheria	...	3	4	5	12
Encephalitis Lethargica	...	—	—	1	1
Erysipelas	...	4	1	—	5
Leprosy	...	—	3	16	19
Malta Fever	...	1	—	—	1
Ophthalmia neonatorum	...	—	—	20	20
Puerperal Fever	...	—	4	—	4
Relapsing Fever	...	—	—	1	1
Scarlet Fever	...	2	—	—	2
Tuberculosis	...	7	28	352	387
Typhoid Fever	...	4	16	77	97
Tick typhus	...	16	1	1	18
Chicken pox	...	26	7	246	279
Para-typhoid	...	1	—	3	4
Bacillary Dysentery	...	19	24	155	198
Amoebic dysentery	...	4	2	19	25
Totals	...	93	99	909	1101

Table 22
Monthly Table of Notifiable Infectious Diseases
(excluding Malaria, for which see page)

	January	February	March	April	May	June	July	August	September	October	November	December	TOTALS
Acute Poliomyelitis	...	2	—	1	3	2	1	2	4	—	—	1	16
Anthrax	...	1	—	—	2	—	—	—	1	1	4	1	10
Blackwater Fever	...	—	—	1	—	—	—	—	—	—	—	—	1
Diphtheria	...	4	2	1	1	—	1	—	1	—	1	—	12
Cerebro-spinal Fever	...	—	—	—	—	1	—	—	—	—	—	—	1
Encephalitis Leth.	...	—	—	—	—	—	—	1	—	—	—	—	1
Erysipelas	...	3	—	—	1	—	—	1	—	—	—	—	5
Leprosy	...	—	2	1	3	3	2	1	1	2	2	1	19
Malta Fever	...	—	—	—	—	—	—	—	—	—	1	—	1
Ophthalmia Neonat.	...	4	2	9	1	—	—	—	—	1	3	1	20
Puerperal Fever	...	—	—	2	—	—	—	1	—	1	—	—	4
Relapsing Fever	...	—	—	—	—	—	—	1	—	—	—	—	1
Scarlet Fever	...	1	—	—	—	1	—	—	—	—	—	—	2
Tuberculosis	...	28	32	30	39	31	31	34	35	45	24	37	387
Typhoid Fever	...	7	9	9	6	7	16	10	8	5	7	7	97
Tick Typhus	...	2	1	—	—	—	2	2	—	2	—	7	18
Chicken-Pox	...	19	19	19	23	11	9	18	24	35	28	42	279
Para-typhoid	...	—	—	—	1	1	—	—	—	1	1	—	4
Bacillary Dysentery	...	32	32	24	20	29	15	5	5	4	6	16	198
Amoebic Dysentery	...	4	2	2	4	2	1	3	3	1	1	1	25
1101													

TUBERCULOSIS

This disease looms even larger as a cause of morbidity and death among Africans. Tuberculosis was responsible for more than a third of all the notifiable diseases among Africans in 1950. From 1945 when 13 in every 10,000 of the African population contracted tuberculosis and 7.5 per 10,000 died, the incidence has progressively increased till in 1950, 53 Africans per 10,000 population contracted the disease and 27 in every 10,000 died, thus producing a case mortality of approximately 50%. These figures are shown in table 23.

The African population as a whole is a very fertile soil for the dissemination of the seed of tuberculosis. The inherent resistance of the African is exceedingly low and a susceptible population is constantly maintained in Nairobi by the arrival of fresh batches from the reserves in search of employment. A further study of the figures shows that notifications have increased fourfold since 1945 and the death rate has increased threefold. A proportion of this increase may be more apparent than real due to better notification, but even taking this into consideration, we have a very real increase in severity of an already serious problem. It is therefore of great importance to try all reasonable methods to improve the situation. It is in this light that B.C.G. may be used in the near future in Nairobi. This vaccine has already had an extensive trial in East Africa recently, but results cannot be assessed yet.

B.C.G. vaccine has been in use in Scandinavian countries for many years and it is accepted by the authorities there as a recognised adjuvant in their campaign against Tuberculosis. It is to be hoped that the success claimed for it there will be substantiated in East Africa.

Table 23
Tuberculosis Attack Rate and Death Rate — 1950

	Number of cases	Attack Rate per 10,000 persons	Number of Deaths	Death Rate per 10,000 persons
Europeans ...	7	5.0	2	1.4
Asians ...	28	5.4	5	1
Africans ...	352	53.0	144	27
TOTAL ...	387	28	151	11.6

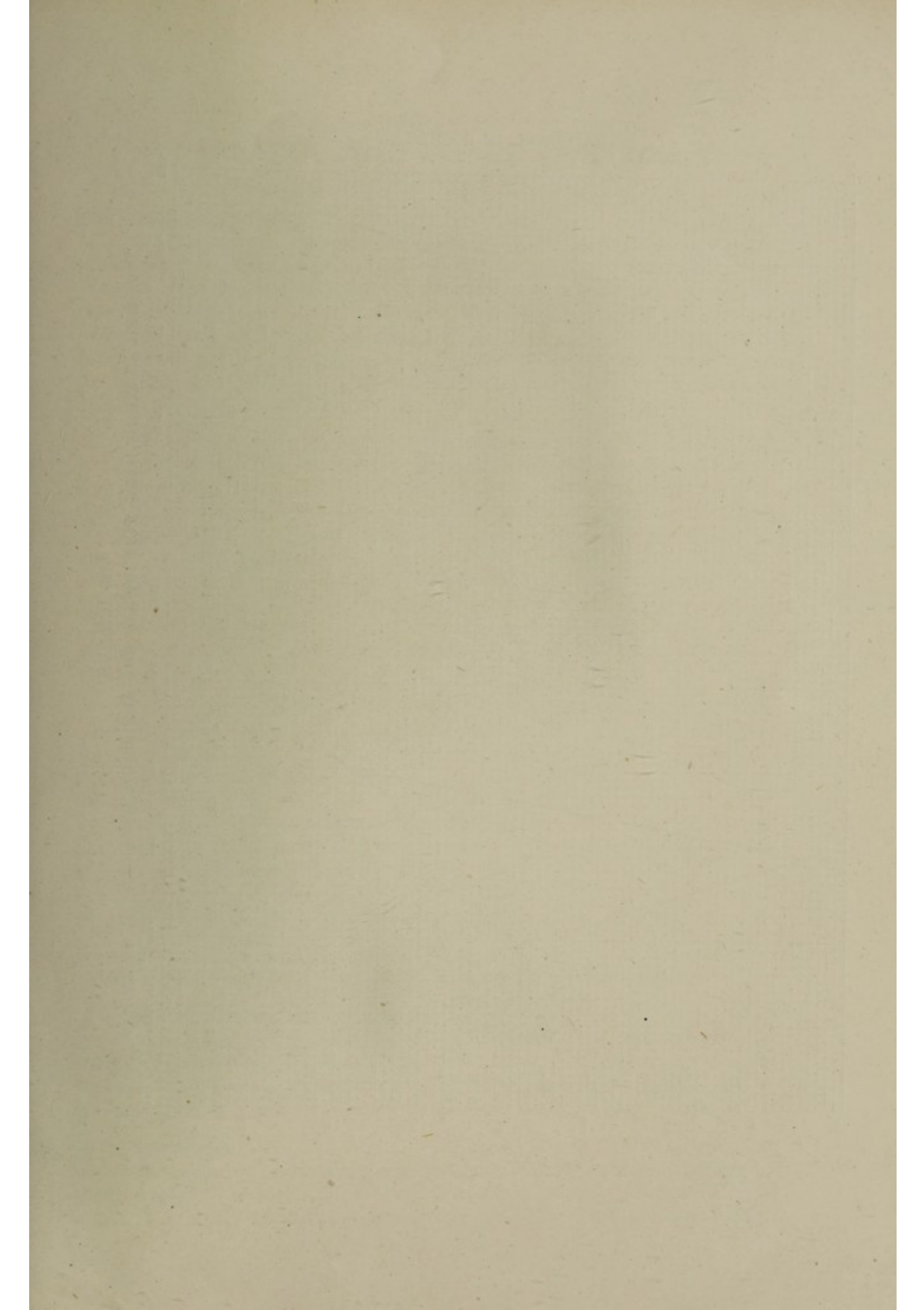
Tuberculosis in Africans.

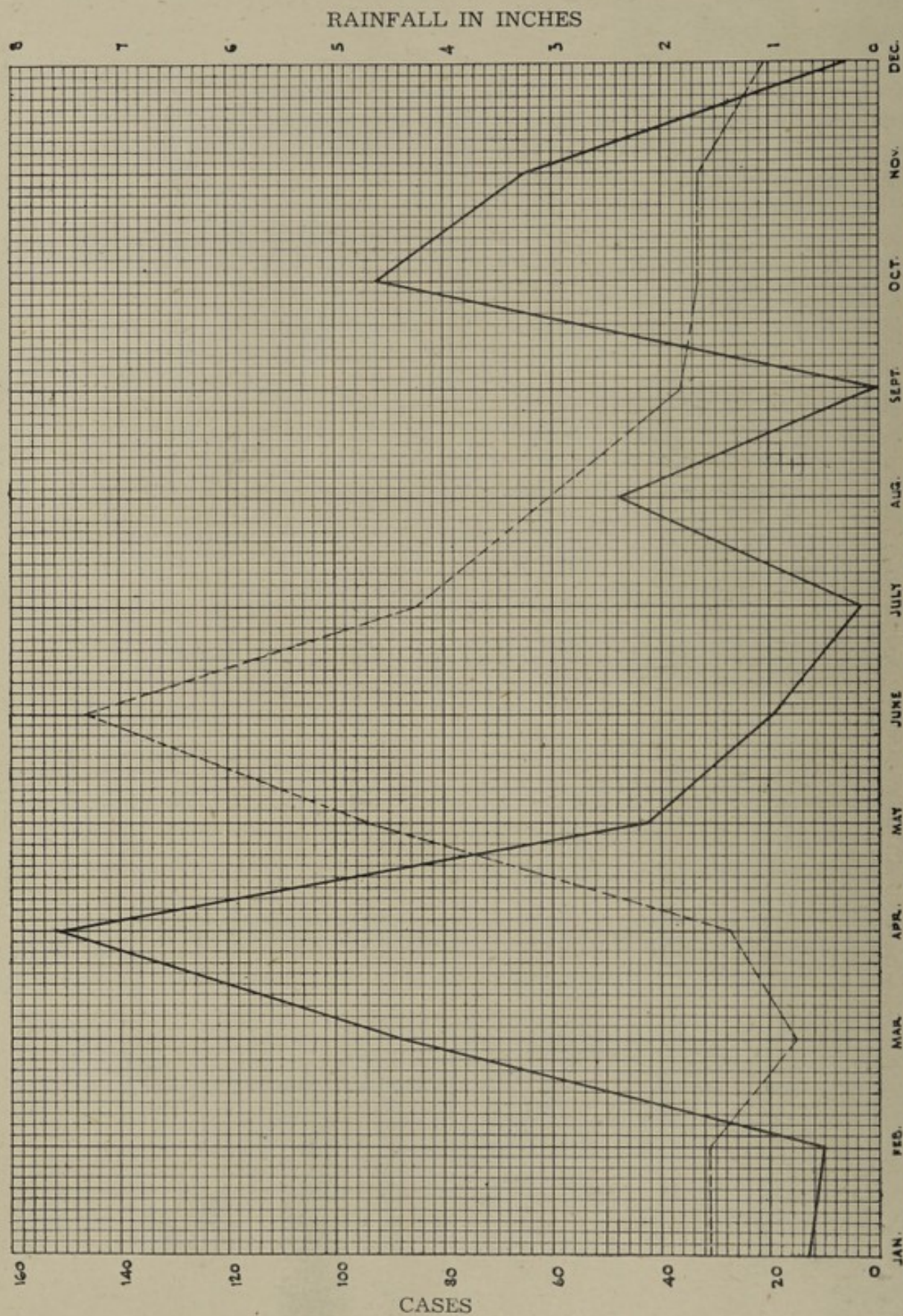
1950 attack rate is 53 per ten thousand African population.

Death rate is 27 per ten thousand African population.

Table 24
African Tuberculosis Attack and Death Rates per 10,000 population

	Attack Rate	Death Rate
1945 ...	13.0	7.5
1946 ...	14.2	7.9
1947 ...	29.0	11.0
1948 ...	41.0	14.0
1949 ...	40.0	15.0
1950 ...	53.0	27.0





VARIATION OF MONTHLY NOTIFICATIONS OF MALARIA WITH MONTHLY RAINFALL
NAIROBI 1950

— Rainfall in inches.

... Malaria Cases.

SECTION 5

MALARIA AND AEDES CONTROL*(Infectious Diseases Control Department)***1. Malaria Control :**

The department started the year somewhat under-staffed as a result of resignations and leave, and this, coupled with the fact that the rains at the end of 1949 had been fairly good, gave rise to some anxiety in case the rains should also be plentiful in 1950. Further, it was felt that the cycle of oiling which had been reduced to 14 days on Council's instructions gave only a bare margin of protection. These fears proved to be justified and with the advent of the rains, mosquito breeding and malaria became a serious threat.

In May two temporary mosquito inspectors were appointed and this fact, together with the change over from ordinary anti-malarial to a high-spreading oil carrying D.D.T., helped to meet the situation. Council gave a small grant and permitted the control to act outside the township boundary to the East. The strike of Africans in May further helped to upset the measures, but vigorous steps were taken and the situation brought under control. The adult catches fell rapidly and with the rain-fall lighter than expected, the malaria position was stabilised and finally suppressed. Many cases in which there was a doubt as to whether it was primary or recurrent were given the benefit of the doubt and counted as recurrent.

It is most regrettable that a very substantial increase in malaria cases, 613, has to be recorded, and the figure does not compare very favourably with the figures for the preceding five years. To help the general public a full strength Pyrethrum and D.D.T. insecticide was prepared by the department and sold to the public at Sh. 1/- per pint. They responded well and sales were exceptionally good. 2,597 pints were sold at Sh. 1/- per pint, bringing in Shs. 2,597/-. Further, approximately 1000 gallons of anti-malaria oil was issued free to the public.

2. Death Rate :

Thirty-six deaths were recorded, the highest for many years. Europeans 2, Asians 2, and Africans 32. This gives an attack rate of 45 per 10,000, a death rate of 2.6 per 10,000, and case mortality 5.9%.

3. Malaria Cases :

As will be seen from the accompanying table the peak period was during the usual months, May, June, July and August, although the peak was one month, June, earlier than usual. The total African cases, 308, is 6 cases more than the total cases of all races recorded during 1949.

4. Summary :

Complacency is always dangerous, particularly when there are so many uncertain factors as there are in malaria control. Superficially it might be argued that during the long dry spell the risk diminishes. This

is true up to a point, but it must be borne in mind that the rains are virtually unpredictable and that in addition a long period of freedom from malaria produces a generally low immunity in the whole population which is an extremely dangerous factor when an epidemic begins. As a matter of policy and for reasons of economy efforts are being made to distribute the activities of the malaria control organisation as far as possible on a seasonal basis so as to concentrate effort at the danger periods, and it is hoped that if emergency measures are called for, due provision be allowed for this.

The following Tables indicate the Attack and Mortality Rates for 1950 and the preceding five years.

Table 25
Malaria 1950

			Cases	Attack Rate per 10,000	Deaths	Death Rate per 10,000
Europeans	...	...	40	28	2	1.4
Asians	...	...	265	51	2	.4
Africans	...	...	308	44	32	4.6
TOTAL	...	...	613	45	36	2.6

Table 26
Malaria Cases over Past Five Years

		1945	1946	1947	1948	1949
Europeans	...	29	13	15	26	31
Asians	...	202	271	221	91	53
Africans	...	79	179	117	78	218
TOTAL	...	310	463	353	195	302
Attack Rate/10,000		27	42	31	17	24

Table 27
Malaria Cases by Months

(Residents contracting in Nairobi)

Race		Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Total
Europeans	...	2	3	—	2	12	11	8	1	—	—	—	1	40
Asians	...	10	11	8	14	53	55	30	25	19	17	16	7	265
Africans	...	19	17	7	11	29	81	47	34	17	16	17	13	308
TOTAL	...	31	31	15	27	94	147	85	60	36	33	33	21	613
Total 1949	...	37	8	11	9	19	28	24	12	11	17	10	9	302

The majority of cases are as usual Sub-tertian and contracted in the eastern section of the city, though with quite a number in other parts of the town. It is definitely a very undesirable policy to neglect the eastern side of the town since the greater part of the "carrier" population lives in the east, the African locations and the crowded Asian residential areas.

Practitioners in the town are still extremely slack in submitting detailed notifications.

MOSQUITO DATA

Vector Species — Adult Catches

As usual the fifty-two adult catching stations were checked every Monday and the results are given in Table No. 28. The year shows the highest number of *A.gambiae*, 674, ever caught in Nairobi over twenty years.

The sudden rise in the catches in April gave rise to anxiety and this to alarm when the catches rose from 63 to 360 in May. The largest catch was 105 in the second week of May, and the majority were from Eastern stations. See tables of Vector Anopheline Catches, Inner and Outer Stations and Eastern and Western Stations.

Vector Larvae

As will be seen from this table, South and Eastern sections produced the greater number of vector larvae. The total collections were 93 compared with 26 for 1949. See tables.

Table 28

A.gambiae Caught in the Fifty-two Collecting Stations

(Per Week and Per Month)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
1st week	36	1	—	2	85	65	7	—	1	—	1	—	
2nd „	3	—	3	9	105	96	2	—	—	1	—	—	
3rd „	3	—	2	18	78	36	1	1	—	—	—	—	
4th „	4	—	—	15	92	17	1	—	—	—	—	—	
5th „	—	—	—	19	—	—	—	—	—	—	—	—	
Total for													
month	16	1	5	63	360	214	11	1	1	1	1	—	Total 674
1949 Totals	153	10	7	6	14	24	25	5	—	1	—	35	

Table 29
Non-Vector Anopheline Catches

Species		Stations	
A.demeilloni	2. 3. 4. 5.	17.	34.
A.christyi	5.	17. 18.	34.
A.cinereus	3.	17. 18.	34.
A.rufipes	3. 4. 5. 7.		23. 34.
A.coustani	7.		
A.squamosus		17.	

Yellow Fever — Aedes (Domestic) Mosquito Control

As was the case with the malaria control, due to the shortage of African staff, once again the domestic control cycle was based on one inspection per fortnight, but the whole city was covered. The result of this fortnightly inspection is reflected in the figures for larvae found, though not quite to the same extent as in 1949. Total collections all species for 1948, 1949, and 1950 were 1,423, 3470 and 4,753, an increase of over 1,000 on 1949. The weekly cycle enables the staff to keep the public on their toes to carry out their own share of control, but the fortnightly enables them to practice a degree of slackness which is most undesirable. At the same time this fortnightly cycle is not in accord with the generally accepted practice for yellow fever control, and this is again reflected in the number of Aedes Aegypti larvae found, 253 collections compared with 217 and 148 for the previous two years.

The great increase in building in the city, which added 803 new premises to be searched with a reduced staff, made the work, routine and supervision all the more difficult. This increase in building rate must be taken into consideration during 1951 and allowance must be made for a staff increase. The African searchers now have so much to do that there is a possibility of their inspections not to be thorough enough, and if the control was to be placed on a weekly cycle as it should be, the staff is quite obviously incapable of carrying out any inspection with the efficiency desirable.

On the whole, as will be seen from the tables for this section, the European residential areas are the most heavily infested. The worst area is the elite residential area of Muthaiga where the residents frequently fail to co-operate.

To help combat the general public slackness a new system was adopted during the rains whereby no warning notices of the fact that mosquito breeding had been found were issued. Prosecution in the courts followed automatically. This had some beneficial effect.

Table 30
Aedes, Houses Breeding, per Block

Block	Area	Increase in Houses				Anopheles		Culex		Total All Species		
		No. of Houses		(built) 1950	Aedes Aegypti		1949 1950		1949 1950			
		1949	1950		1949	1950	1949	1950				
A	Burnbrae	367	381	14	34	15	5	2	218	131	257	148
B	Kilimani	325	357	32	5	8	1	2	304	413	310	423
C	Hill Area	302	326	24	3	7	—	—	157	166	160	173
D	Hill and Chiromo	340	359	19	10	21	1	—	146	104	157	125
E	Groganville	375	404	29	22	16	2	—	198	179	222	195
F	Upper Parklands	418	455	37	58	52	—	—	264	324	322	376
G	Parklands	335	345	10	18	40	—	—	307	587	325	627
H	City Park and Ngara	445	457	12	17	28	—	1	161	269	178	298
J	Muthaiga	362	388	26	41	56	—	—	88	122	129	178
K	Commercial	240	242	2	—	—	—	—	50	72	50	72
L	Commercial	234	234	—	—	—	—	—	35	42	35	42
M	Commercial	325	335	10	—	—	1	—	25	26	26	26
N	Ngara	576	623	47	—	—	—	—	150	241	150	241
O	Pumwani	621	623	2	—	1	—	—	43	50	43	51
P	Shauri Moyo	478	479	1	—	—	—	—	3	14	3	14
Q	Race-course	554	569	15	—	—	—	—	23	75	23	75
R	Pangani	378	454	76	2	1	—	—	261	314	263	315
S	Eastleigh	500	654	154	—	—	—	—	479	863	479	863
T	Bahati and Riverdene	93	225	132	—	—	—	—	4	7	4	7
U	Industrial Area & African Locations	1020	1144	124	3	1	2	1	228	297	233	299
V	Eastleigh	27	32	5	—	1	—	—	3	3	3	4
X	Kabete	183	198	15	4	6	1	—	46	84	51	90
Y	Government House & Kileleshwa	221	238	17	—	—	—	—	47	111	47	111
TOTALS		8719	9522	803	217	253	13	6	3240	4494	3470	4753

Note.— E — European area.
A — Asian area.
N — African area.

Table 31

Aedes Permanent and Temporary Breeding Foci and Indices

	Larval species found (times)		Larval species found per cent.							
	No. examined	Aegypti	Anopheles	Culex	All Species	Aedes	Anopheles	Culex	All Species	
PERMANENT FOCI :—										
Concrete Drains	...	305683	1	—	117	118	0.0003%	—	0.03%	0.03%
Earth Drains	...	92813	1	2	354	357	0.001 %	0.002%	0.38%	0.38%
Gully Traps	...	166563	1	—	146	147	0.0006%	—	0.08%	0.08%
Rain Water Tanks	...	23381	18	—	86	104	0.07 %	—	0.36%	0.44%
Septic Tanks	...	79507	—	—	590	590	—	—	0.64%	0.64%
Soakage pits	...	37862	—	—	767	767	—	—	2.02%	2.02%
Sunken Drums & Bath Pits	...	37429	8	—	446	454	0.02 %	—	1.62%	1.65%
Water Meters	...	3020	2	—	311	313	0.06 %	—	10.29%	10.36%
TOTAL Permanent Foci	...	736258	31	2	2817	2850	0.004 %	0.0002%	0.38%	0.38%
TEMPORARY FOCI :—										
	...	789590	241	4	2175	2420	0.03 %	0.0005%	0.27%	0.30%
GRAND TOTAL	1525848	272	6	4992	5270	5270	0.01 %	0.0004%	0.32%	0.34%

Aedes Index

The total number of premises searched in 1950 was 234,149, an average of 9,006 houses per cycle. Actual buildings now number 9,552. The index for 1950 to foci was 0.01% and to premises 0.10%. The total number of foci searched was 1,525,848 an average of 6.51 per premise. *Aedes aegypti* was found 272 times and of these 241 were made from temporary foci. Permanent foci searched numbered 736,258, and temporary foci numbered 789,590.

Notices and Prosecutions

From the end of April to the end of June prosecutions were issued without warning. The number of notices served was 2,878. 287 cases were taken to court, nine cases had previous convictions and five were acquitted. Fifteen cases were dismissed under 36(1), 25 were withdrawn (these were mostly accused persons who had left the colony before the date of hearing), and 242 cases were convicted. Total fines imposed amounted to Shs. 6,586/- and total costs awarded was 2,406/-. The average fine per conviction, including costs, was Shs. 37/21.

Table 32
Districts and Principal Foci — Aedes Aegypti/Culex

				FOCI		FOCI BREEDING		Total
				Searched	Anopheles	Aedes aegypti	Culex	
Septic tanks	...	...	79507	—	—	—	590	590
Water tanks	...	...	23381	—	—	16	86	102
Gully traps	...	...	166563	—	—	1	146	147
Earth drains	...	...	92813	2	—	1	354	357
Concrete drains	...	...	305683	—	—	1	117	118
Soakage pits	...	...	37862	—	—	—	767	767
Bath pits	...	...	27429	—	—	8	446	454
Tins	...	...	303238	—	—	82	131	213
Drums	...	...	212464	—	—	31	533	564
Water meter holes	...	...	3020	—	—	2	311	313
Motor tyres	...	...	66663	—	—	37	616	653
Motor parts	...	...	16532	—	—	27	76	103
Hollows	...	...	2295	4	—	2	162	168
Bamboos	...	...	860	—	—	—	—	—
Bananas cultivated	...	...	73898	—	—	—	—	—
Bananas wild	...	...	270	—	—	—	—	—
Cacti	...	...	1160	—	—	—	—	—
Coconut shells	...	...	7713	—	—	—	—	—
Plants not specified	...	...	7019	—	—	—	—	—
Palms	...	...	1444	—	—	—	—	—
Pineapples	...	...	—	—	—	—	—	—
Sisal	...	...	6369	—	—	—	—	—
Tree holes	...	...	73	—	—	5	9	14
A.R. Shelters	...	...	7	—	—	—	3	3
Baths	...	...	750	—	—	1	4	5
Bird baths	...	...	7994	—	—	7	8	15
Basins	...	...	442	—	—	2	2	4
Barrels	...	...	986	—	—	4	11	15
Batteries	...	...	57	—	—	—	2	2
Bottles and jars	...	...	14914	—	—	2	5	7
Buckets	...	...	32072	—	—	1	16	17
Cement tanks	...	...	779	—	—	—	36	36
Cooling tanks	...	...	125	—	—	—	1	1
Egg shells	...	...	395	—	—	—	—	—
Ponds ornamental	...	...	2519	—	—	1	71	72
Guttering	...	...	175	—	—	—	—	—
Hot water tanks	...	...	5053	—	—	16	40	56
Hand grips Inspection covers	...	...	5	—	—	4	1	5
Holes	...	...	339	—	—	1	45	46
Karai	...	...	8168	—	—	2	5	7
Others not specified	...	...	5802	—	—	11	326	337
Pots	...	...	5629	—	—	7	6	13
Rubbish pits	...	...	54	—	—	—	19	19
Sumps	...	...	269	—	—	—	11	11
Troughs	...	...	1957	—	—	—	11	11
Tar boilers	...	...	4	—	—	—	—	—
Underground water tank	...	...	192	—	—	—	2	2
Wells	...	...	823	—	—	—	21	21
Wheelbarrow	...	...	82	—	—	—	2	2
TOTAL	...	...	1525848	6	—	272	4992	5270
Number of Houses	...	...	9522	—	—	—	—	—
Prosecutions	...	...	287	—	—	—	—	—

SECTION 6

RODENT AND VERMIN CONTROL

The acting Rodent Officer, Mr. Morrill, proceeded on overseas leave in August and there was no replacement.

Rodent work and inspections were again directed mainly towards food premises with the object of making as many as possible rat proof. Where the public failed to co-operate after advice and warnings had been given, notices were served and in some cases prosecutions resulted. Seventy notices were served under the Rats and Mice (Destruction) Rules, 1928. Of these, 60 were complied with within a reasonable period. Three were complied with after prosecution. Seven were cancelled for various reasons, mainly the intended demolition or reconstruction of the building in question. Proceedings were taken immediately in one case where there had obviously been no attempt to keep the premises free from rats or mice and infection was heavy. Fines totalled Shs. 550/-.

Plague: No cases occurred in Nairobi or the immediate vicinity.

Plague-Rat Examination: 7,095 rats of all species were examined and no plague found.

Rodent Control: Routine trapping, poisoning, hand catching and gassing was continued and the following Tables show the results of this work :—

Table 33**Total Kill**

				1949	1950
Rattus rattus	...	...	...	6690	4057
Arvicanthis abyssinicus	...	...	...	7670	7731
Mastomys coucha panya	...	...	...	2291	1637
Otomys angoniensis	...	...	...	436	100
Mice (all species)	...	...	...	3934	8060
Others	...	...	...	124	130
All species (by Railway administration)				4557	3944
				<hr/>	<hr/>
Total known killed	...	...	...	25702	25659
Poisoned/gassed, estimate	...	...	...	7863	6000
				<hr/>	<hr/>
TOTAL	...	...	...	33565	31659
				<hr/>	<hr/>

Table 34
Trapping in Native Locations

	Rooms Trapped	Houses Trapped	Rooms of Houses Infested	Index	Trapping days	Rattus rattus	Mice	Others	TOTALS
Shauri Moyo	475	—	242	50.9%	144	186	724	1	911
Pumwani ...	—	494	273	55.3%	108	336	354	—	690
Kaloleni ...	507	—	88	17.3%	104	5	163	1	169
Ziwani & Kariakor ...	1493	—	202	13.5%	128	154	206	1	361
									2131

Commercial Area

Premises trapped 1298; Infested 336; Index 25.8%; Trapping days 204.

Rattus rattus	Mice	Others	Total
720	292	2	1014

Poisoning: Prebait laid 96,234; Poison bait 32,038; 2,001 poison baits were taken. No accurate figure of deaths can be given as few bodies are found.

Gassing: 61 warrens were treated, mainly on river banks. One house was treated by gas. A rough estimate of numbers of rats killed by gas and poisoning would be approximately 6,000.

Hand Catching: This method was extended to include catching inside buildings where possible, prior to trapping, and was highly successful as will be seen by the following table:—

Table 35
Hand Catching inside Buildings

Species.	Areas.							TOTALS
	Commercial area	Kariakor & Ziwani	Pumwani	Shauri Moyo	Kaloleni	Marulani		
Rattus rattus	... 471	70	35	137	—	24		737
Mice ...	... 248	627	12	2673	10	3		3573
Others ...	... 1	1	—	—	—	—		2
TOTALS	... 720	698	47	2810	10	27		4312

The slightly smaller number caught by trapping during 1950 can be attributed to the above.

Hand Catching was continued in open grassland and around residential and commercial areas with the usual success.

Table 36
Hand Catching in open Areas

Species.	Areas.										TOTALS
	Commercial area	Kariakor & Ziware	Pumwani	Shauri Moyo	Kaloleni	Marulani	Abattoir	Swamp	Ngara & Pumwani	Other areas	
<i>Rattus rattus</i> ...	67	265	73	491	77	5	213	307	81	64	1643
<i>Mastomys coucha panya</i>	5	115	69	974	13	—	14	269	48	102	1609
<i>Arvicanthis abyssinicus</i>	43	223	346	2527	775	670	37	754	1070	1277	7722
<i>Otomys angoniensis</i>	—	2	2	—	—	—	—	84	6	6	100
Mice ...	284	790	30	920	132	15	9	243	187	78	2688
Others ...	—	2	6	45	9	1	1	20	21	21	126
TOTALS ...	399	1397	526	4957	1006	691	274	1677	1413	1548	13888

Private and Special Work: In August three rat men were sent to the Ruiru Dam labour lines and killed 64 rats of which 58 were *Rattus rattus*.

Private premises dealt with numbered 53 in which 370 rats and mice were caught. Payment for this work amounted to 390/-.

Flea Examination: 5749 live rats were examined for fleas, being a general sample of rats of all species caught alive, giving a flea index of .013.

Table 37
Flea Examinations

	X.braziliensis	X.cheopsis	D.lypusus	C.cabirus	Others	Total
<i>Rattus rattus</i> ...	123	291	7	3	25	449
<i>Mastomys coucha panya</i> ...	—	4	7	—	1	12
<i>Arvicanthis abyssinicus</i> ...	14	176	106	33	3	332
<i>Otomys angoniensis</i> ...	—	2	2	2	—	6
Others ...	—	5	—	—	—	5
TOTALS ...	137	478	122	38	29	804

Vermin: At the request of the public 788 rooms were treated with either D.D.T. or Gammexane as the case demanded. Of these, 427 rooms were infested with bugs. Asian premises dealt with numbered 15, all

cockroach infestations. European premises dealt with were infested with various vermin as follows :—

Cockroaches 32; bedbugs 19; ticks 3; fleas 2; mites 1.

Charges made to the public for this work amounted to Shs. 6331/36. Issues of D.D.T. and Pyrethrum Dieseline spray were made throughout the year to the Cleansing Department to control flies on the refuse tips. Charges for this amounted to Shs. 8299/48.

Disinfections after cases of infectious diseases were carried out in 105 rooms and three ambulances.

Laboratory: In addition to routine examinations made for the child welfare clinics and the African Maternity Hospital, the Staff clinic submitted a considerable amount of material.

Total examinations made during the year were as under :—

Bloodslides (Parasites) 6,134 with 1,622 positive for malaria, *Microfilaria perstans* 7, and *Bancrofti* 1. 44 differential counts were made.

Stools, examined 2,693. Ova *Ascaris* were seen in 536, *Taenia* in 173, *Ancylostoma* in 160, *Trichuris* in 44, *S.mansoni* in 12, *Strongyloides* in 1, *Oxyuris* in 2, *E. Coli* cysts in 136, *E. Histolytica* in 1 and Flagelates in 61.

151 specimens of urine were tested and *Sch. Haemotobium* found in 6 and *Trichomonus* in 1.

67 specimens of sputum were examined for tuberculosis and four were found positive.

9,218 smears were examined for gonorrhoea and 903 were found positive.

13 gum swabs were examined for organisms and spirochaetes and 5 were found with spirochaetes.

6,595 blood slides of rats were examined for plague and all were found negative.

SECTION 7

SANITARY ADMINISTRATION 1900—1950

It is not often that a Medical Officer of Health is privileged to review the sanitary progress of his area from its inception to its Jubilee, from a camp of tents to a City of 136,500 inhabitants all within the comparatively short space of fifty years.

It is perhaps bordering on the impertinent to attempt to record the sanitary history of any town within a few pages of a departmental report. Impertinent because of the vast amount of pioneering work performed by pioneers under most primitive and irritating conditions, men who each in his own time had to battle with ignorance, disease and parsimony. To those men no thanks or praise can be too extravagant.

Yet to reflect on the early days of Nairobi, the days when it started as a railway camp, through the changes, wrought by disease and the impetus of monetary gain and towards a civilisation worth while, may perhaps help to restrict the repetition of mistakes past and guide the way to a proper appreciation of the blessings of good health and happier lives.

That many of the problems of 1900 should be the problems of 1950 is not to say that no progress has been made — difficulties will always present themselves in a growing town, but the effects of education and the accumulated knowledge of how things should be done may be seen in any country where finances permit and dire need calls for the building of new towns.

Alas, Nairobi could not and cannot be built to comply in all respects with what is known to be right; the growth of population, plus the millions of pounds required demand a continuance in some degree of the inexpensive and near-primitive things which go to make the unadvertised part of a colonial town.

Nairobi has suffered and will continue to suffer in ways perhaps peculiar to itself, in a sense it was an unwanted love child from its beginning. It was not weaned on a goldmine nor was it founded on the fortunes of wealthy agriculturists. Nairobi started as a canvas camp because the engineers of the Uganda Railway considered the level plain a good place for stores and workshops which the gradients beyond rendered impracticable.

And so it is to the Uganda Railway engineers who for their own purposes halted here that we owe the beginnings of the City of Nairobi.

The flat commercial area of the City should be on such poor soil is of course deplored since it has produced problems which continue to show themselves in varying ways but, in the main, these problems arise because of the close development in a manner which could not be foreseen by these engineers; indeed, throughout the years the Uganda Railway, later the Kenya and Uganda Railway, and now the East African

Railways, have invariably shown themselves to be at least one step ahead of everyone else.

Whether it be railways, roadways, staff houses or labourers dwellings, examples have been set which would, if generally followed, render a great deal of criticism and grumbling quite out of place.

It is only fair to add that much of their progressiveness is based upon a sufficiency of money and the willingness to spend it.

PLAGUE

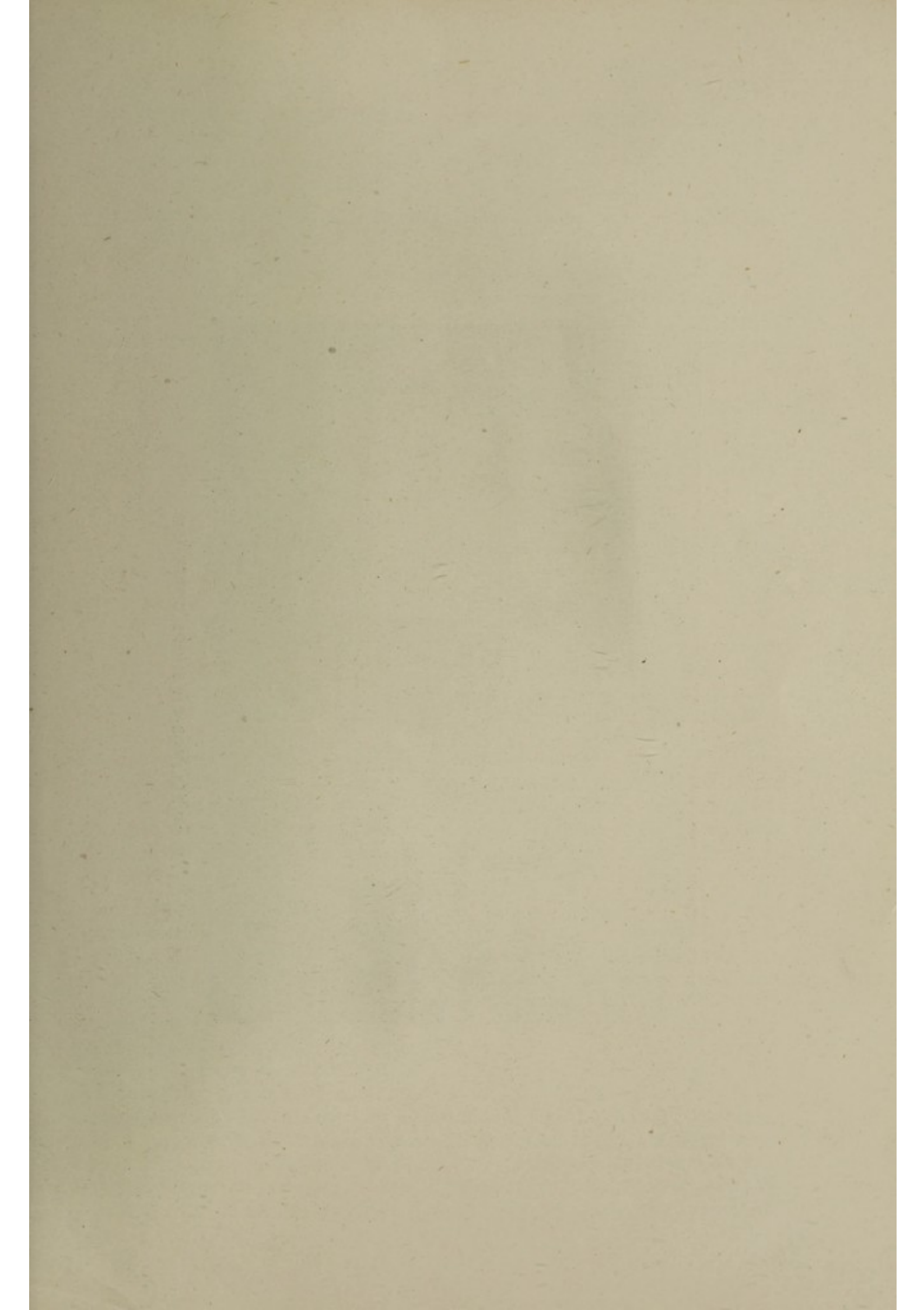
If fate ever warned a population of the effect of age-old sanitary sins, such a warning came to Nairobi as early as 1902, when plague struck in the earliest Nairobi Bazaar. It is not difficult to imagine the conditions of the time, probably a quagmire into which a great deal of refuse was trampled, waste water with its food scraps flowing over the non-absorbent black-cotton soil all calculated to attract rats; and cheap corrugated iron buildings providing ideal lodging places.

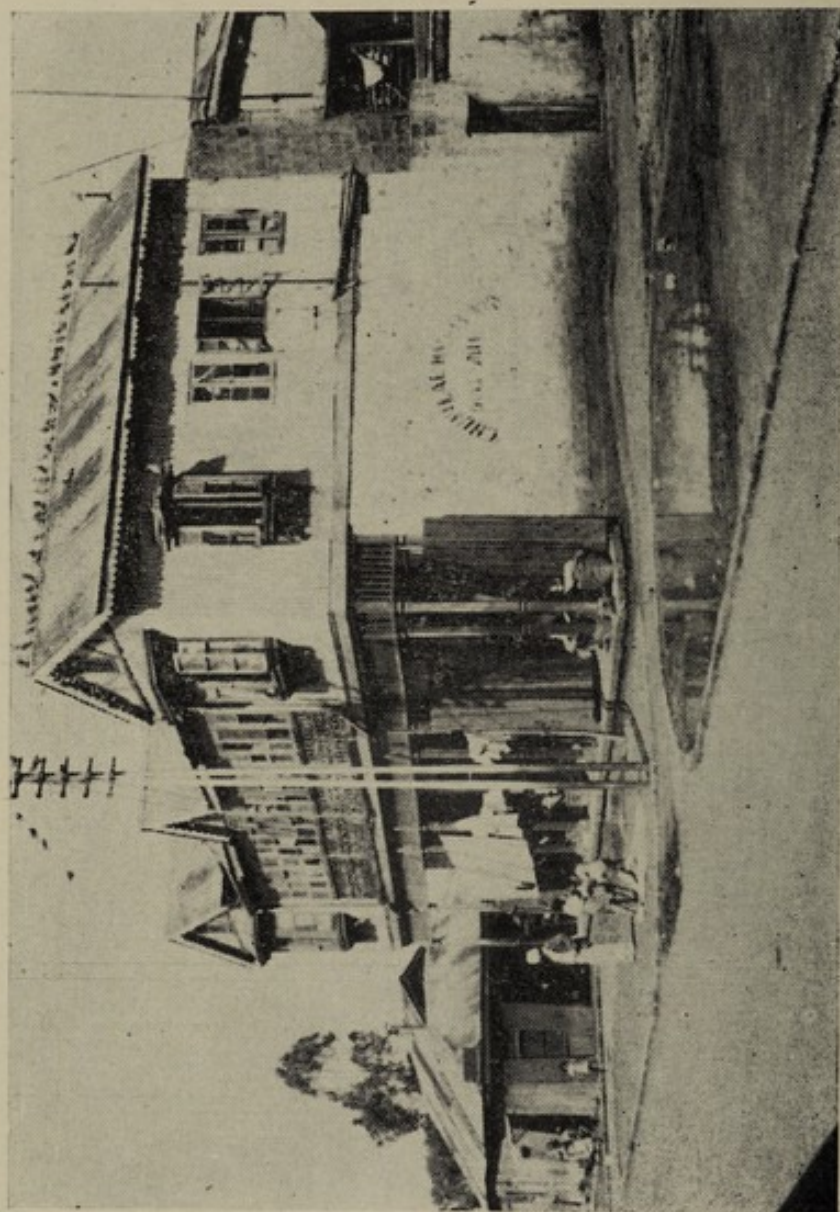
It was about this time that the Municipal Committee being made aware of drainage difficulties passed a By-law which read inter alia "All such refuse water must be placed in small tanks provided by the tenants or occupiers of houses etc., when it will be removed by the contractor working under the Municipal Authorities."

The extent to which the Municipal Committee of the day deemed it necessary to provide for certain essential services may be gleaned from an agreement made between their clerk and a certain Budder Din, which is worth while quoting in full :—

"The following agreement made to-day between Budder Din — Contractor, on the one part and the Secretary of the Municipal Committee on the other part witnesseth :

1. That the said Budder Din sweep and keep clean of all paper and rubbish whatsoever, all roads in the Bazaar and the roads in front and behind the houses known to belong to the township of Nairobi.
2. That the said Budder Din keeps all ditches which lie in the district known to belong to the township of Nairobi clear of all rubbish whatsoever.
3. That the said Budder Din agrees to supply oil for thirteen street lamps in the bazaar and for six lamps in Station Street and to keep the lamps clean and in order and to take care that the lamps are burning properly every night from seven p.m. until six a.m. next morning and that any damage done to the lamps through the carelessness of his men should be made good by him.
4. That the said Budder Din receives Rupees One hundred and Fifty (150) at the end of every month so long as he attends to the work in such a way that no objections can be raised if paragraphs No. 1, 2 and 3 come into consideration.





DWELLINGS ON SHOPS CIRCA 1910.

5. That the said Budder Din has to give one month's notice in case he wants to terminate this contract and that he agrees to pay the penalty of Rupees One hundred and Fifty (150) in case he terminates this contract without giving previous notice.
6. That in case of dispute the decision of the Chairman of the Municipality shall be final."

The size and general conditions of the town fifty years ago may possibly be imagined from its street lighting (a poor basis admittedly even to-day) but thirteen street lamps in the bazaar and six lamps in Station Street! The conditions for the establishment for a rodent colony must have been perfect.

It is not surprising that plague recurred, for conditions remained more or less similar until comparatively recent times — rat catching has been a routine job for many years as also the protection of foodstuffs, but more detailed attention to buildings and the elimination of rodent breeding places in them, only came to the fore in World War II.

Plague is endemic in the country and has been for many years, Nairobi having had visitations in 1902 and 1904 and again in 1911, 1912 and 1913, when the new bazaar was in such an over populated state, that to prophesy an outbreak of the disease would not have taxed the capacity of a Nostradamus. The descendants of those early rodent settlers have been undergoing destruction at an average rate of over 30,000 per annum for some years past. The work of rat destruction during the years 1942 and 1943 was intensified following a severe outbreak of plague in 1941, when 264 cases occurred. A rat catcher of experience was appointed and extra subordinate staff employed to deal with the situation. The number of rats caught during the year of the outbreak was 33,612, a figure which was almost trebled the following year when 97,646 were destroyed. This was followed by 82,028 in 1943 since when the number has averaged 30,000. These figures include rats destroyed by the sanitary staff of the East African Railways and Harbours, whose area of combat is very considerable.

A study of the major outbreaks of plague leads to the belief that these occur in seven year cycles, which should be a warning that the year 1951 may be a bad one and any precautions which can be taken should be adopted if the occurrence is to be arrested. But, as in 1941, housing conditions are such as to encourage rat harbourage and to militate against the normal methods of control. Indeed the measures adopted nearly fifty years ago, in 1902, might be advocated, but the cost of the destruction might well be deemed prohibitive. In that early year there were 712 claimants for compensation amounting to Rs. 241,152 (over £4,000), it being recorded that "all portions of the bazaar and the military lines capable of containing infection are being destroyed by fire". The cost to-day would be infinitely greater if buildings and materials were destroyed proportionately. The moral of all this is that, while rat catching is normally a routine job which evokes little interest from the public or anyone else,

it is nevertheless one which cannot be neglected. Furthermore, it is useless to wage continued war against rats unless buildings are so constructed and protected as to discourage their harbourage. This of course envisages not only insistence upon solid structure and rat proofing measures in buildings constructed from the beginning but also the steady and persistent demolition and removal of buildings which, besides being a menace to the health of the population owing to their dilapidated condition, also provide ideal protection for rats.

It is of more than passing interest to note that one of the worst features of the 1930 outbreak was the penetration and lodgment of rats into the joints of the stone walls of Bazaar Buildings. These walls were built of stone faced on one side only, the remaining sides being very rough and irregular. This resulted in quite large cavities which in turn were partly filled with small stone chips and earth. This form of construction had been debated and decided upon as an economic measure as early as the year 1905 when it was resolved:— "The rule as at present in force involves unnecessary expenses upon the owner of the building". The rule referred to called for proper building with lime or cement mortar. It is safe to assert that if properly constructed buildings had been insisted upon from the beginning of the town, the casualties in the 1930 outbreak would not have been so heavy. The Locations, with their wattle and daub — earth floor form of construction may be expected to have severe visitations but stone buildings are not usually so vulnerable. Nevertheless, the River Road/Bazaar area, having buildings of rough, irregular and earth-jointed stone walls or corrugated iron, supplied the highest number of cases of any locality. If the administrators of fifty years ago had insisted on sound stone buildings with concrete floors, instead of the usual rough stone paving, the rat population would not have had quite the same encouragement. Some proof of this may be deduced from the distribution figures of the 1941 outbreak, when only one case out of the 264 which were notified occurred in the Bazaar proper — this area was, at the time, undergoing re-construction more in accord with modern ideas.

Smallpox :

Much the same might be written on the control of smallpox although insanitary properties do not perhaps provide the same ground for propagation. Nevertheless, there are many houses which are of such construction that thorough disinfection is quite impracticable and were it not for the proved efficacy of smallpox vaccination, the control of the disease would be most difficult. Kenya is constantly open to the risk of imported cases from India, and despite the precautions which are taken, including compulsory vaccination, infected passengers do arrive in the country. Quarantine of the whole complement of passengers in such cases would provide a higher factor of safety but, provided the contacts adhere to their undertakings and report for examination and, if necessary, re-vaccination, experience leads to the conviction that such quarantine of contacts is hardly justified. Unfortunately however, once the passengers are off the ship they think of their own convenience, and considerable

numbers do not bother to report. Therein lies the weakness. When such instances do occur, an army of inspectors would be needed to trace all contacts to deal with them. As in the case of plague, the old method of some decades ago was to burn the infection, even the houses or hovels occupied by the patient. This would be quite out of question to-day if only because of the risk of the fire spreading to adjoining premises. Disinfection and cleansing in as efficient a manner as the premises will permit plus mass vaccination and re-vaccinations, have in recent years quelled outbreaks of the disease after a time and with one exception (1943) the spread has been kept within reasonable bounds, reasonable because of the peculiar circumstances which are ever present in the Colony generally and in Nairobi and the larger towns in particular.

The year 1943 saw an addition to other serious troubles of the time by an epidemic of smallpox of the Alastrim type which started in the cool season of July of that year. This began its course as other outbreaks had done before, by importation, the actual source being unknown; it was not however of Asiatic origin. There were 1039 cases, all African and no deaths were recorded. The outbreak did not start with one or two cases and a period of some days before the next, instead, during the first month of its appearance no fewer than 401 cases were notified. The main areas of infection were, as might be expected, the mean and overcrowded houses and shacks in the African Locations, only a few cases from the residential areas being notified.

This outbreak taught two lessons; one, the utmost difficulty in preventing the passage of this or any other disease from the City to the Country or vice versa. Railway passengers at the station and pedestrians on the main roads of ingress were alike vaccinated on entry, but many hundreds must have wandered into the town or jumped the train, before they could be dealt with.

The second lesson was the futility of trying to disinfect houses of wattle and daub — places where the sunshine is seldom, if ever, allowed to enter. Yet, as the longer periods of sunshine and consequent warmer weather followed, the disease slunk away to the place from which it had come.

Health Education :

Of all the factors which can be of paramount value in the future, healthy development of the City now ranks higher than health education. In addition to more direct methods to the adult population, the field of health education in the school needs development. Training in the importance of decent habits in relation to good health should start early in life and be part of the school curriculum in every school of every race. The ingrained habit of leaving the dirty work to sweepers — of training children to defecate in open drains — of depositing waste matter anywhere but in receptacles provided for the purpose, these habits should be crushed. The schools would be well advised to include more on the subject of hygiene in their curriculum, and parents approached through

that kind of propaganda most likely to reach them. Posters to the illiterate are useless, only the spoken word and films can impart the necessary knowledge and, until false ideas and beliefs are removed, enforcement of the laws remains necessary to bring about some sort of sanitary environment.

The Council provides services which in themselves and to the observant, are an object lesson. The removal of refuse every day, or twice a day in the central business area, and the sweeping and conservancy services give a guide to what should be done, but alas, it appears to work in just the opposite direction. People appear to think that because the services are, in general, regular and complete that nothing remains to be done by the individual consequently many minor sins of omission or commission provide in the aggregate, just that fertile ground which is constantly sought by the conveyors of disease. People are not slow to complain when the public services are delayed, when the water supply is meagre or cut off, yet when water is abundant, little of it is used to remove some of the filth. That, in the opinion of such people, is the job of the private sweeper whose leisurely labours go unsupervised.

Water Supply :

Many complaints have been made regarding the water supply and to some extent these have been justified. The water supply to the City has always moved slowly, never catching up with requirements although there are now very welcome signs that ample quantities are assured and conduits for its more efficient distribution are in course of installation. A delivery of almost three and three-quarter million gallons a day would have seemed fantastic to the engineers who arranged the first supplies from Nairobi River half a century ago. The first known mention of the quantity of water supplied to the town was in 1907, when "probably the water consumption was over 150,000 gallons per day". As a census of 1906 disclosed a population of 14,000, this means that the average consumption for all purposes was only 10.7 gallons per person. But rainwater no doubt supplied many more gallons to the wise, for the river water was heavily charged with soil and other ingredients. Indeed the quality of the water was until 1948, far from pure and the Council found it necessary to publish regular instructions to the populace to boil all water intended for drinking. With modern filtration plants and chlorination, the use of tap water without any further treatment is now usual. And the 1,000 gallon rainwater tanks which were so common a few years ago are gradually going to the scrap heap as they become unserviceable.

Sanitation :

Increased water supplies in turn encourage more modern sanitary conveniences and indeed the demand for "inside sanitation" is so steady that disposal becomes a problem. Only a comparatively small portion of the City is sewered, an area approximating that of the original township of Nairobi which was the "area comprised within a radius of $1\frac{1}{2}$ miles from the present office of His Majesty's Sub-Commissioner". The spread of the City over an area of 32.1 square miles has not brought with it any economy

in working, rather is the contrary the case, and it must be difficult for people residing in more congested towns to visualize the extra burdens which such spread imposes on the Council and staff. Many miles of roads are of temporary construction and many more miles consist of earth tracks, and with plots being of such large sizes and frontages being so great the expense which must be faced for road making reaches levels which are becoming a nightmare to many owners. The costs of refuse collection and other communal services also rise to figures which must appear unreal to people living in closely built-up towns. Medical Officers of Health and Sanitary Inspectors who are acquainted with a few thousand of their people living on a few acres will not understand the difficulties of officers who are responsible not for mere acres but for square miles. Whereas sewers in closely knit areas receive their contributions every few feet, there are whole districts of Nairobi where distances from house to house are so great that the construction of sewers as an economic proposition is quite out of the question. With everything except manual labour having to be imported the costs of sewer construction — indeed the costs of everything connected with sanitation are relatively higher than in countries possessing a manufacturing economy. This is apt to be overlooked by many newcomers who have considered modern sanitation as something which has always existed in the places from which they came and who look upon pail closets, open drains and unmade roads as conditions which result from the easy going attitude of the City Council and its staff. But anyone with sufficient interest to enquire deeply into matters of sanitation, water supplies and the like, would be bound to emerge from their research with the knowledge that despite the high costs, the standards adopted a couple of decades ago and maintained ever since are not lower than elsewhere, but are higher in some respects. This is not to say that the standards are unnecessarily higher or that they are maintained without the opposition of people who consider sanitation a fad and an unnecessary brake on their profitmaking. They are fair and set for the common good. Numerous are the ways in which sanitation may suffer because of the universal dislike of spending money on things which are not self evident and it is an unfortunate fact that some of these ways must, for the time being, be endured. They have been endured for many years but not without paying the price of injury or ill-health.

From the very early days open drains have been commonplace from the small domestic channels to the huge open drains at the roadsides, drains which were capable of, and frequently concealed the bodies of the unfortunate or misguided individuals who happened to fall into them. Many of these drains exist to-day, but are covered with concrete slabs and are no longer a trap for the unwary.

Slowly, but in a steady methodical way, the necessary evils of the pioneering days are being buried and their chances of being repeated become more remote. Yet history does repeat itself, in sanitation as in other spheres, and war and even the fear of war does nothing to stop the process. During the year 1950 most of the work of this department could

be ascribed to the effects of the late war, not all of which, however, were inevitable, some of the evils persist for no other reason than that personnel has been short, not only on the staff of the City Council, but in Government Departments for whose co-operation we rely in many directions in this matter of sanitary administration.

Table 38

Summary of Works Performed

Nuisances :

Inspections made to :—

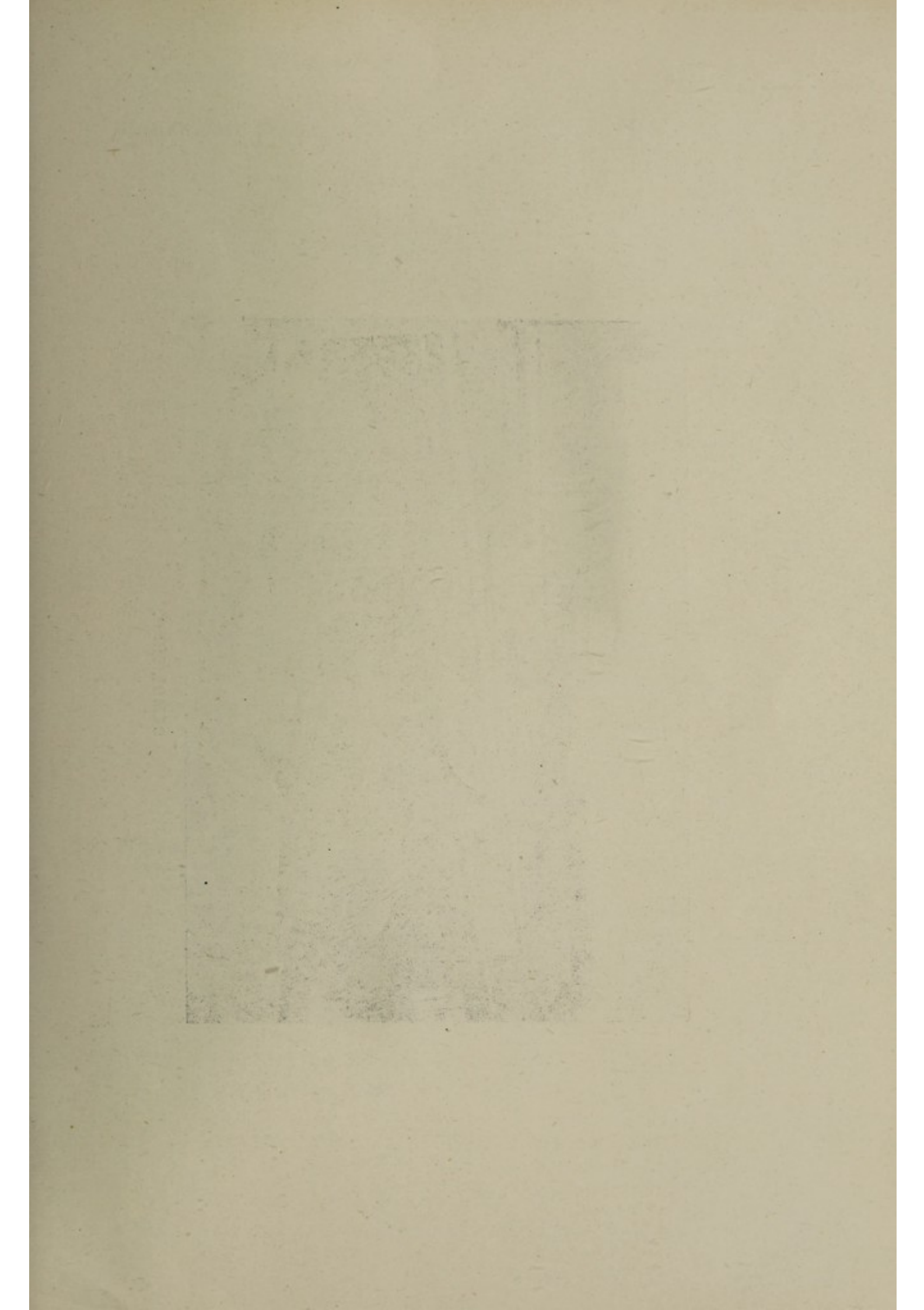
Dwelling houses	...	...	...	...	...	...	3065
Laundries	...	...	...	...	...	...	185
Offensive Trades	...	...	...	...	...	...	63
Stables and Cattle Sheds	...	...	...	...	...	...	83
Trade Premises and Offices	...	...	...	...	...	...	1642
Public Buildings	...	...	...	...	...	...	248
Open spaces, streets etc.	...	...	...	...	...	...	1406
Camps	...	...	...	...	...	...	33
Complaints Investigated	...	...	...	...	...	...	593
House to house inspections	...	...	...	...	...	...	146
Barbers	...	...	...	...	...	...	278
Swimming Bath	...	...	...	...	...	...	19
Miscellaneous Inspections	...	...	...	...	...	...	251

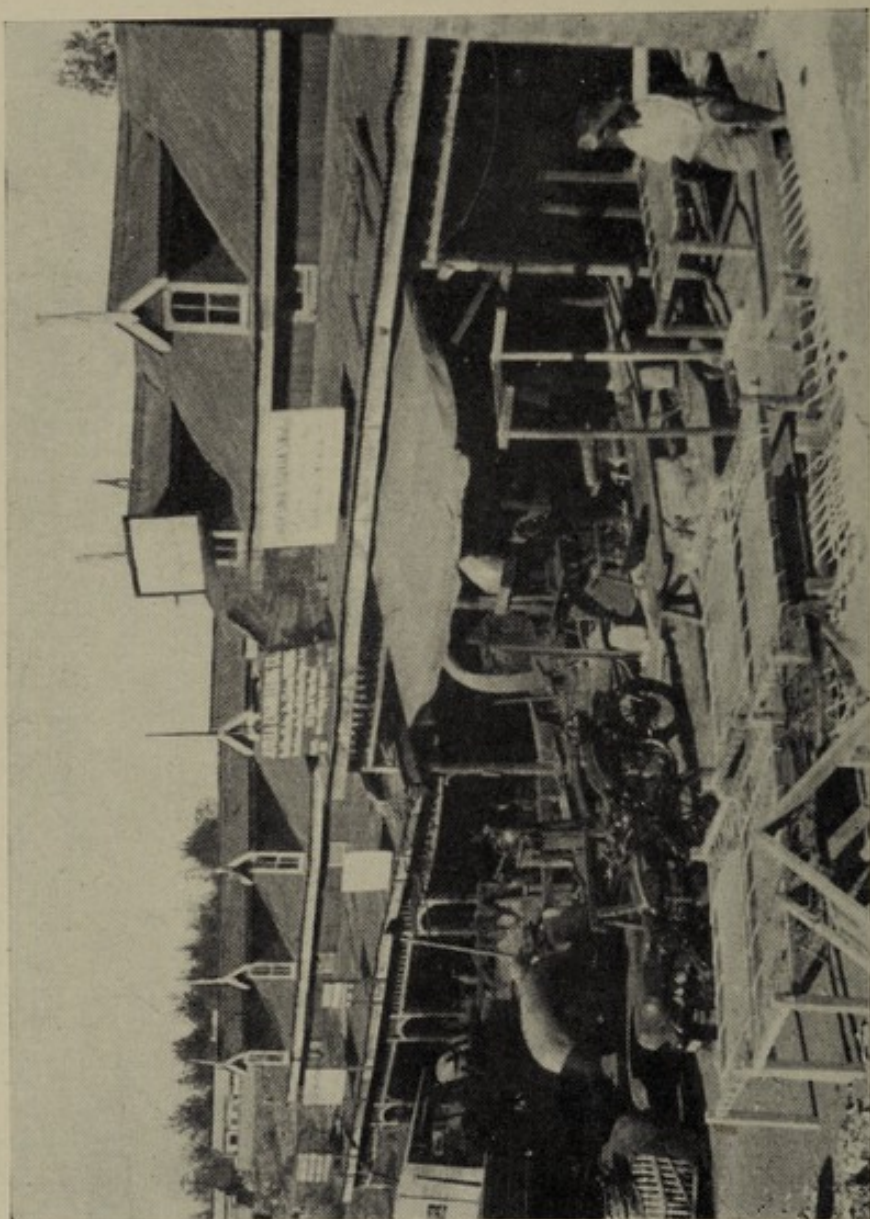
Defects Remedied :

Premises dirty or verminous	...	...	...	...	...	...	184
Dwellings unfit for habitation (including native huts)	...	...	...	...	...	...	63
Yards paved	...	...	...	...	...	...	7
Premises rat infested	...	...	...	...	...	...	3
Latrine accommodation defective or inadequate	...	...	...	...	...	...	194
Drains choked or defective	...	...	...	...	...	...	131
Septic tanks or pits choked or defective	...	...	...	...	...	...	3
Waste water disposal defective or inadequate	...	...	...	...	...	...	119
Accumulation of refuse	...	...	...	...	...	...	269
Food unprotected against rats	...	...	...	...	...	...	34
Sleeping in kitchens or foodstores	...	...	...	...	...	...	10
Mosquito Breeding	...	...	...	...	...	...	112
Plots overgrown	...	...	...	...	...	...	178
Conversions (pails to water closets)	...	...	...	...	...	...	455
Miscellaneous	...	...	...	...	...	...	51
							<hr/> 1813

Defects Remedied following :

Verbal intimation	...	...	...	...	...	...	792
Written intimation	...	...	...	...	...	...	59
Statutory Notices	...	...	...	...	...	...	962





DEMOLISHED.

Unauthorised Buildings :

Notices served	...	...	...	...	...	33
References to other departments	...	...	...	...	...	84
Buildings demolished	...	...	...	...	...	39
Prosecutions	...	...	...	...	...	3
Fences and other structures demolished	...	...	...	...	...	15

Licences :

Trade premises inspected and re-inspected	...	...	...	...	...	1364
Taxi-cab inspections	...	...	...	...	...	436
Food carts : Milk, meat, bread, sweetmeats	...	...	...	...	...	244

Erection and Alteration of Buildings :

Plans scrutinized	...	...	...	...	...	1158
Inspections made	...	...	...	...	...	1322
Completion certificates issued	...	...	...	...	...	194
Number of premises connected to sewers	...	...	...	...	...	116
Number of new water closets discharging into sewers	...	...	...	...	...	369
Number of septic tanks installed	...	...	...	...	...	26
Number of new water closets discharging into septic tanks	...	...	...	...	...	86

The above statement relates to the work of sanitary inspectors whose duties concerning minor new buildings have been curtailed.

Notices Served :

Intimation	...	...	...	...	...	96
Public Health Ordinance (Nuisance)	...	...	...	...	...	208
Public Health Ordinance (other)	...	...	...	...	...	8
By-laws — Food Rules, etc.	...	...	...	...	...	765

Prosecutions :

(Figures kindly supplied by Mr. Scott — Prosecutor)

	Cases	Convictions	Acquitted or discharged	Pending
Public Health Ordinance	46	39	6	1
By-laws	119	108	11	—
Milk & Dairies Regulations. (Prosecuted by Police)	27	24	3	—
TOTAL	192	171	20	1

Total Fines Shs. 17,359/- and costs Shs. 952/-.

There were also twelve sentences of hard labour awarded.

Inspection of Premises subject to Special Control :

Premises :

Aerated water factories	...	...	...	...	...	57
Bakeries	...	...	...	...	...	154
Butchers	...	...	...	...	...	1261
Dairies and Milk shops	...	...	...	...	...	259
Eating Houses	...	...	...	...	...	1116
Fishmongers	...	...	...	...	...	130
Food Factories	...	...	...	...	...	279
Groceries and Provisions	...	...	...	...	...	1485
Hotels and Bars	...	...	...	...	...	295
Markets	...	...	...	...	...	128
Restaurants and Tea rooms	...	...	...	...	...	289
Vegetable sellers	...	...	...	...	...	372
Total						5825

Liquor Licences :

A comparatively small number of food premises are inspected and re-inspected every year for the purpose of furnishing recommendations to the Liquor Licensing Court in regard to applications for various licences. These figures are not included in the table of inspections of premises subject to special control and for the year 1950, they totalled 215.

The inspection of premises in this connection gives the Council the opportunity of having repairs carried out with the minimum of time consuming process on the part of the Staff for it is an indisputable fact that Court proceedings have never yet followed directions to abate nuisances when a Liquor Licence is under consideration, the intrinsic value of such a licence precludes all argument or procrastination.

It is a great pity that the same incentive does not assist in other Public Health work.

Liquor Licence Applications

Non-Spirituous	...	...	...	112
Wine Merchants & Grocers	...	...	...	62
General Retail	...	...	...	15
Restaurant & Cafe	...	...	...	13
Hotels	...	...	...	5
Wholesale	...	...	...	4
Others	...	...	...	4
				215

City Mortuary :

A total of 249 bodies were received into the mortuary during the year, thirty of which were known to have been brought in from other districts.

The number of "external" corpses might well be much greater, but owing to the Nairobi Police District not coinciding with the City area, the reports received are doubtful as regards the actual place of death.

The total of 249 may be subdivided as follows :—

African	201
Asian	18
European	21
Others	9
	<hr/>
	249
	<hr/>

The City Council maintains the mortuary and employs the morgue attendants, who also undertake the burial of the majority of the African dead.

African Burials :

The number of burials carried out by the local authority was 1225, all the bodies being removed from public institutions as follows :—

Native Civil Hospital	...	...	106
Group Hospital	...	...	564
Infectious Diseases Hospital	...	...	90
Pumwani Maternity Hospital	...	...	236
Mathari Mental Hospital	...	...	64
City Mortuary	...	...	121
Prison	...	...	44
			<hr/>
			1,225
			<hr/>

Animals Impounded :

Regardless of the penalties which may be imposed for contravention of the By-laws regulating the keeping of cattle and other animals within the City, offenders paid a total of Shs. 6,765/- as pound fees for animals, poultry etc., impounded during the year.

The ultimate aim is to stop the loose grazing of cattle in the City if only to eliminate, or at least reduce the risk of tick typhus.

Cattle impounded numbered 693, while sheep and goats cost their owners Shs. 1,015/- in pound fees alone. Dogs, donkeys, poultry and various articles taken to the pound numbered 1,328.

SECTION 8

FOOD INSPECTION**Milk :**

From time to time over the past 15 years at least, public interest has been aroused to the necessity of safeguarding and improving Nairobi's milk supply. This is not surprising when one remembers the importance of milk as an item of diet, especially for growing children and when on the other hand one bears in mind the fact that it is an excellent medium for the growth and conveyance of pathogenic bacteria. It is one of the duties of a Health Department to inform the public of the dangers to health which exists in their midst. It is not difficult to accomplish this so successfully that the public conscience is immediately aroused, but the action which the newly informed public vehemently demands is not so easily achieved. A newspaper article or radio talk on the risks involved in drinking milk is not beyond the capabilities of the smallest staff, but to provide the necessary control and safeguards is impossible without adequate staff and some financial outlay.

Reporting on conditions in Nairobi in 1936, a Dairy Industries Committee stated "Without at least one full time milk inspector it is impossible to ensure that the regulations are carried out in a satisfactory manner". That statement was made at a time when the daily supply of milk to Nairobi amounted to 2,790 gallons. The supply of milk to Nairobi now is about 11,000 gallons, but with the number of qualified inspectors available it is still not possible to allow one inspector to devote the whole of his time to milk.

It is not surprising therefore, that in spite of the tremendous improvements which have been made possible by allowing one inspector to give more of his time to milk production and distribution, much still remains to be done.

Among the many propositions which have been discussed from time to time, the one which has received most attention is the suggested provision of a central milk receiving and processing depot in Nairobi. Both public bodies and private individuals have considered the possibility of such an enterprise, but during 1950 the Kenya Cooperative Creameries invited the Secretary of the Milk Marketing Board of England and Wales "to advise on the future organisation of the wholemilk section of the dairy industry in Kenya". Following a month's tour of investigation, a report was published which revived all the discussions of the past. The main proposals of the report are :—

That a Milk Marketing Board should be set up with Statutory authority to control all aspects of milk production and sale; that producers should be paid according to percentage of fat only; that depots should be set up in Nairobi and Mombasa where all milk entering the town would be bulked and pasteurised; the cost of such a depot would be £150,000 and the operating cost 61.4 cents per gallon.

The advisability or otherwise of setting up a Milk Marketing Board is not strictly a matter affecting the Public Health Department, unless its introduction should increase the price of milk to such an extent that the public refused to purchase sufficient to meet the needs of health and nutrition, but the provision of a Central Milk Depot does directly concern the convenience and welfare of the Nairobi citizen.

Such a depot must inevitably raise the cost of milk to the consumer and it is the considered opinion of the Department that if private enterprise could be assured that the Authorities do not intend to introduce this form of monopoly, there would be an immediate response from existing dairies to provide the amenities so necessary to ensure a safe milk supply for all.

One problem which has so far proved most difficult of solution, is that of finding a tamper-proof closure for milk bottles. The report referred to above suggest the universal use of cardboard cartons, but this is far more vulnerable than the crown corked bottle and has many other serious disadvantages. The practice of delivering milk into customers own containers from large cans is unfortunately all too common, due no doubt to the fact that many consumers are unable to pay the extra few cents charged for delivery in bottles. It is felt however, that the risks of contamination and adulteration which result from this practice are sufficient grounds to press for its cessation and By-laws have been drafted which if implemented will make it an offence to sell milk other than in a container which has been filled and sealed at the dairy. Those requiring milk at a cheaper rate will still be able to obtain it in their own container at the dairy.

It is unfortunately a fact that in the dairy trade and indeed in all the food trades conducted in the City, a large proportion of the traders have only the haziest conception of cleanliness and hygiene. When unsatisfactory conditions are pointed out by an inspector they are usually rectified without delay, but it is eloquent commentary on the suitability of a person to engage in a food handling business when he has to be told that his premises, utensils, clothing and often his own person are dirty; that foodstuffs should not be left exposed to dust and flies; that dustbins should be kept covered and that failure to observe these elementary rules leads to the spread of disease. In such cases, prosecutions though spectacular and in some cases exemplary, do not lead to any lasting improvement. Frequent regular visits by inspectors would help a great deal but without a considerably increased staff this is impossible. The ultimate answer to the problem lies in a long term policy of education beginning with the children of all races in the schools, and an education that is not theoretical only but is supported by the practical example of the teacher's own attitude to hygiene, the sanitary condition of the school premises, the scrupulous cleanliness of school kitchens and dining rooms and the construction of these rooms to the highest possible standards. Children who see school meals prepared in badly lighted, ill ventilated temporary kitchens, or who obtain drinking water from a tank, are the children who

will grow up into the food handlers of the future assuming that the standards to which they have become accustomed are all that are required.

Much of the work undertaken by this department is both educational and corrective and it is an encouragement to find that advice is often sought on matters of food hygiene and especially as regards milk, not only by those over whom our jurisdiction strictly extends, but by many from other parts of the Colony. This is due in no small degree to the facilities which are provided for examining and testing samples which are submitted and interpreting the results to the enquirer.

The following tables give details of some of the work carried out by this section of the department.

Table 39

Samples Examined by Food Inspector.

1. RESAZURIN REDUCTION TEST

Month.	A.	B.	C.	Total
	Disc Reading			
	4.6	1.3½	0.½	
January	159	15	28	202
February	151	13	11	175
March	149	15	18	182
April	83	11	13	107
May	122	18	23	163
June	164	22	20	206
July	159	23	6	188
August	134	18	21	173
September	134	26	14	174
October	137	24	38	199
November	99	10	25	134
December	45	5	4	54
Total	1536	200	221	1957

2. PHOSPHATASE TESTS

	Efficiently Pasteurised	Inefficiently Pasteurised	Not Pasteurised	Total
	31	9	1	41

3. ESTIMATION OF FAT AND TOTAL SOLIDS

	Satisfactory	Unsatisfactory	Total
Milk *	101	55	156
Cream	2	—	2
	103	55	158

* Generally, only those samples giving an unsatisfactory lactometer reading are subject to this test. The number of unsatisfactory

samples therefore represents the proportion of suspicious samples confirmed as unsatisfactory.

Table 40

Samples submitted by Food Inspector to Government Chemist.

Article.	Satisfactory	Unsatisfactory	Total
Cheese ...	—	1	1
Flour ...	—	1	1
Gin and Water	—	1	1
Liver Paste ...	1	—	1
Maize Meal ...	—	1	1
Milk ...	—	1	1
Patent Medicine	1	—	1
Sugar ...	—	2	2
Tinned Cherries	1	—	1
Tinned Fish ...	1	—	1
Water (Borehole)	1	—	1
Wholemeal Bread	2	—	2
Total	7	7	14

Table 41

Samples submitted by Food Inspector to Government Bacteriologist.

Article.	Satisfactory	Unsatisfactory	Total
Water (Town Supply)	166	17	183
Water (Other Supplies)	10	—	10
Mineral Waters ...	38	7	45
Tinned Foods ...	1	2	3
Total ...	215	26	241

Table 42

Legal Proceedings instituted by Food Inspector.

Nature of Offence.	Prosecu- tions	Convic- tions	Acquit- tals	Penalties.	Total
Milk and Dairies Regulations					
(a) Selling milk without a licence	12	11	1	Shs. 340/- Hard labour 2 weeks.	—
(b) Selling or conveying for sale adulterated milk.	17	14	3	Shs. 950/- Hard labour 16 months & 44 weeks.	—
Public Health Ordinance					
(a) Exposing for sale unsound foodstuffs	1	1	—	75/-	10/-
Nairobi Municipality (General) By-laws					
(a) Using unauthorised premises for storage of foods	1	1	—	120/-	12/-
(b) Permitting use of swimming pool without supervisor	1	1	—	100/-	14/-
(c) Permitting use of swimming pool without having life-belts available	1	1	—	75/-	—
(d) Using unlicensed premises as restaurant	1	1	—	250/-	14/-

Table 43

Unsound Food Condemned

Article	lb.
Cheese	208
Custard Powder	216
Dried Fruit	7713
Flour	39
Fruit	750
Jam	600
Nuts	120
Oysters	144
Patent Medicine	62
Provisions	539
Sweets	952
Tinned Fish	1679
Tinned Fruit	1616
Other Tinned Foods	1753
Total	16391 lb.

SECTION 9

MEAT INSPECTION

The development of the Meat Industry to its present position has not been without vicissitude and criticism.

The Somali trader no longer treks into the native land units to return with selected stock for sale to the retailer, nor does the butcher bid at the local auctions or bargain with the stockbreeder for supplies.

The Stockbreeders Association was formed in 1925 for the handling of stock produced by the European Stockbreeder. This progressive enterprise functioned until the formation of the Livestock Control, a war-time measure, in 1940.

Early in the war, the practice of buying by selection in the reserves, was discontinued. Bulk purchasing of mobs of cattle in the native areas was introduced by the Livestock Control and brought about a sharp decline in the quality of beef from this source, with a corresponding increase in the number of carcasses condemned. In 1942, the standard of Meat Inspection was modified to meet the demand for the lower grades of beef.

European farmers and ranchers produce the grade beef; this has shown steady improvement. In 1930, 7.3% of the carcasses were condemned against 3.2% in 1950.

More grade beef is now consumed than beef from native sources.

The Municipal Abattoir erected in 1932 was built on modern lines and considered ample to meet the growing needs of Nairobi for many years. No one could foresee the recent rapid development and increase in the population, particularly during the war years when the accommodation was taxed beyond capacity and the equipment being in use night and day, could not be properly overhauled. The occasional breakdown at times completely disorganised the By-Products plant when hundreds of condemned carcasses were disposed of by burial.

The Abattoir and By-Products plant was transferred to the Kenya Meat Commission at the end of 1950.

An attempt was made in 1948 to build up an export trade in dressed poultry. Nearly 40,000 were exported to the United Kingdom, unfortunately some of the frozen carcasses did not arrive in sound condition and the promoters of the scheme were obliged to discontinue the venture.

In 1950, the Kenya Meat Commission exported a considerable quantity of chilled meat, by air, to the Belgian Congo.

A labour dispute in June disorganised work at the Abattoir for a few days, when the European butchers themselves slaughtered and dressed cattle to maintain supplies for their customers.

With the transfer of Meat Control to the Kenya Meat Commission in June, the price of meat was raised considerably and brought a sharp drop in consumption extending over a period of two months.

Throughout the year the inspection of meat was carried out at the Abattoir by one European Inspector, assisted by a locally trained African Assistant. Routine inspections of meat and poultry was carried out at retail premises, the number of visits being as follows :—

Stalls at Markets.	Butchers Shops.	Grocers Shops.	Hotels, Restaurants, Eating Houses.
540	427	121	124

Nineteen prosecutions were instituted and fines amounting to a total of Shs. 1360 imposed for infringements of the By-laws controlling the sale of meat and poultry.

Details of inspections at the Abottair are summarised in the following tables :—

Table 44
Carcases Inspected

Animal	1948		1949		1950	
	Number of carcasses	Weight of meat passed lb.	Number of carcasses	Weight of meat passed lb.	Number of carcasses	Weight of meat passed lb.
Grade Oxen ...	7,665	4,437,035	11,723	5,744,270	12,955	6,477,500
Native Oxen ...	10,011	2,212,431	10,119	2,307,923	6,753	1,553,190
Calves ...	1,231	101,455	1,058	76,556	729	54,675
Grade Sheep	9,313	402,067	14,582	510,360	12,514	475,532
Native Sheep	26,186	576,092	15,437	376,090	19,560	489,000
Goats ...	24,701	543,422	23,352	561,475	18,192	454,800
Pigs ...	6,969	576,569	9,208	747,922	11,104	877,167
Poultry ...	107,635	269,087	184,364	461,815	181,603	453,374
Total ...	193,711	9,118,248	269,843	10,786,411	263,410	10,835,238

Table 45
Carcases Condemned

Animal	1948		1949		1950	
	Number	Rate %	Number	Rate %	Number	Rate %
Grade Oxen ...	168	2.2	209	1.8	416	3.2
Native Oxen ...	1,162	11.6	1,157	11.4	989	14.6
Calves ...	190	15.4	173	16.3	161	22.1
Grade Sheep ...	114	1.2	34	0.2	32	0.2
Native Sheep ...	223	0.8	393	2.5	294	1.5
Goats ...	772	3.1	889	3.8	309	1.5
Pigs ...	20	0.2	34	0.3	36	3.2
Poultry ...	792	0.7	768	0.4	651	0.3
Totals ...	3,441		3,657		2,890	

Table 46
Conditions Necessitating Condemnation

Disease.		Grade Oxen	Native Oxen	Calves	Grade Sheep	Native Sheep	Goats	Pigs	Poultry
Anaemia	...	1	1	—	—	—	—	—	—
Bruising	...	33	2	2	—	4	—	11	158
C. Bovis	...	276	850	151	—	—	—	—	—
C. Cellulosa	...	—	—	—	—	—	—	10	—
Dropsy	...	—	3	—	—	—	—	—	1
Dropsy & Emaciation		45	77	1	19	234	169	1	1
Emaciation	...	3	—	—	—	2	—	—	21
Fevered Condition	...	41	39	—	2	21	51	—	31
Immaturity	...	—	—	5	—	—	—	—	—
Jaundice	...	8	5	—	5	8	9	—	24
Lymphadenitis	...	—	—	—	—	6	31	—	—
Moribund	...	—	—	—	—	1	—	—	127
Pleuro-pneumonia	...	1	2	1	—	—	3	—	—
Septic Condition	...	2	7	1	3	18	37	14	256
Skin Disease	...	—	—	—	—	—	—	—	8
Tuberculosis	...	4	2	—	—	—	—	2	—

Table 47
Organs Condemned

Hearts	...	...	...	...	2,317
Heads	...	...	...	...	258
Tongues	...	...	...	...	247
Kidneys	...	...	...	...	3,685
Livers	...	...	...	...	35,846
Lungs	...	...	...	...	8,839
Spleens	...	...	...	...	1,739
Stomachs	...	...	...	...	37
Intestines	...	...	...	...	37
Others	...	...	...	...	7,771
Total		...	...	...	60,776

Table 48
Total Weight Condemned

				Lb.
Grade Oxen	...	...	...	240,134
Native Oxen	...	...	...	271,522
Calves	...	...	...	15,617
Grade Sheep	...	...	...	11,681
Native Sheep	...	...	...	14,484
Goats	...	...	...	13,381
Pigs	...	...	...	9,531
Poultry	...	...	...	2,857
Total	...	...	...	579,207 lb.

Table 49
"Measle Rate"

		Inspected	Condemned for measles	Rate %	Measly Carcases Passed	Rate %
Grade Oxen	...	12,955	276	2.1	706	5.4
Native Oxen	...	6,753	850	11.1	783	11.6
Calves	...	729	151	20.7	86	11.8
Total	...	20,437	1,277	6.2	1,575	7.7

Table 50
Disposal of Condemned Carcases

		Number	Total Weight Lb.
Measly Carcases Cooked	...	1,277	352,668
Diseased Carcases Processed	...	1,613	226,539

SECTION 10

WATERWORKS

(Contributed by Assistant City Engineer (Water))

General :

The continued rapid development of the town during 1950 with consequent heavy increase in demand resulted in the supplies of water still being inadequate and although with the relief given by the completion of the Ruiru Dam in March 1950, most areas of the town could be given reasonable supply, certain areas of the City suffered shortages during the hot weather period mainly due to deficiencies in the distribution system. The main areas of deficient supply during the dry months were the Parklands, Burnbrae, Kilimani and Davidson Road Areas and schemes were initiated during the year for improvement in all these areas.

Restrictions in the use of water for non-essential purposes were withdrawn in May, when the additional water from Ruiru Dam became available.

The Engineering Assistant in the Water Department resigned in February and his vacancy was filled by an officer recruited from the United Kingdom in November.

Existing Sources of Supply :

- (a) *Kikuyu Springs.* These have given an unfailing supply of approximately one million gallons of water per day throughout the year and with the advent of additional water from Ruiru it has been possible to maintain the Kikuyu Reservoir practically full throughout the year.
- (b) *Ruiru 9" and 12" mains.* Previous to the completion of the Ruiru Dam and 16" pipeline in March, the supply was maintained through the existing 9" and 12" pipelines from the reservoir impounded by the partially completed dam, augmented by a booster pump installed on the 12" pipeline.
- (c) *New Ruiru 16" Main.* The Ruiru Dam and New 16" main were completed and put into service in March 1950, and this main has, since then delivered approximately, 1,700,000 gallons daily, the deliveries from the 9" and 12" main being reduced to give a total delivery from the Ruiru Reservoir of just over three million gallons per day.
- (d) *Nairobi Dam.* This project has given satisfactory service during the year and has given a regular daily supply of about 200,000 gallons to the centre of the City. By strict supervision and regular bacteriological examination the water from this service has been invariably classed as "highly satisfactory".

Services :

The demand for new connections increases yearly and 673 new connections were given during the year, an increase of almost 4% over the previous year.

The total number of connections is now 7479.

Meters :

Owing to the late delivery of new meters, a number of new connections, (i.e. 99 nos:) had to be put on 'flat rate', but supplies of new meters have just come to hand and these flat rate connections will now have meters installed as rapidly as staff permits.

Purity of Water :

124 Samples of water were taken for bacteriological examination during the year, the results of which were as detailed below :—

Highly satisfactory	...	...	106
Satisfactory	...	...	9
Suspicious or doubtful	...	...	2
Unsatisfactory	...	...	7

Of the unsatisfactory results, one was from the unchlorinated filter effluent, two from the Westlands School area and four from the Whitehouse Road main.

The main serving the Westlands School was scoured and cleaned out and subsequent results were "highly satisfactory" and the Whitehouse Road main was super-chlorinated and there also subsequent results have been "highly satisfactory".

Rainfall :

Rainfall during the year was considerably more plentiful than in 1949 and the Ruiru Reservoir was filled by 10th June and there was overflow from the reservoir continuously from that date until 16th December.

At Lari Forest Station, Uplands, which is the main gathering ground for the Ruiru Dam, the details of rainfall were :

1945	total rainfall	43.35 inches
1946	" "	57.02 "
1947	" "	68.19 "
1948	" "	52.96 "
1949	" "	31.96 "
1950	" "	52.14 "

New Works :**(a) Ruiru Dam and Pipeline.**

This work, together with the new pipeline, was completed in all essentials, and put into service in March 1950, and has enabled a considerably augmented water supply to be given to the City. The improved rainfall in 1950 enabled the reservoir to be completely filled and adequate supply assured up to the 1951 rains.

(b) *Chania/Sasumua Scheme.*

Preliminary work was completed and tenders for the actual dam construction were received and contract for the work entered into with the firm of Messrs. Equator Roads and Engineering Co.

(c) *Filter Plant — Kabete.*

The two new Filter Units were completed and put into service in April and have enabled the augmented supply from Ruiru to be satisfactorily dealt with. Old type filters numbers 1 and 2 have also been reconstructed into the modern pattern and are now giving excellent service.

(d) *Muthaiga Trunk Main.*

This main was completed in September 1950 and although a number of bursts were experienced on this line, these were repaired and the main put into full service from October and this has now completely removed all water shortage from the Muthaiga area.

(e) *Kabete Hill Tank Trunk Main.*

The main portion of this main was completed during the year, but owing to delay in receipt of 12" and 15" pipes, the end portions of the main have had to be completed, temporarily, in 9" diameter pipes. This main will be in service in January, 1951 and is designed to improve the day pressure in the Central and Industrial areas of the City.

(f) *New Mains.*

Over 12 miles of new mains in addition to the above trunk mains, were laid during the year to serve developing areas of the City. These include mains to serve Woodley 2, Kileleshwa, Bahati, Nairobi South, Grogan Road and Juja Road areas, and many minor estate developments.

(g) *Statistics.*

	1950	1949
Total delivery — million gallons	1329	1105
Average daily delivery gallons	3,722,400	3,048,000
Population — estimated	136,500	130,000
Average daily delivery per head — gallons	26.0	23.5

SECTION 11

CLEANSING

General :

From the earliest dates in the history of Nairobi, transport in the Cleansing Department was ox drawn. In 1933 the first two mechanically propelled vehicles for the collection of refuse were introduced, these two vehicles displaced a total of thirty-four ox carts.

In 1938 Cleansing Services were placed under a Cleansing Superintendent, and the Cleansing Department in its present form started to appear. Prior to this appointment, two overseers had carried out the work, and were each directly responsible to the Municipal Engineer.

From 1939 to 1942 the development of the department was handicapped by war conditions. In 1942 additional lorries were obtained, and these enabled the department to cope with the strain thrown on it by the increase in population due to Military Camps in the town.

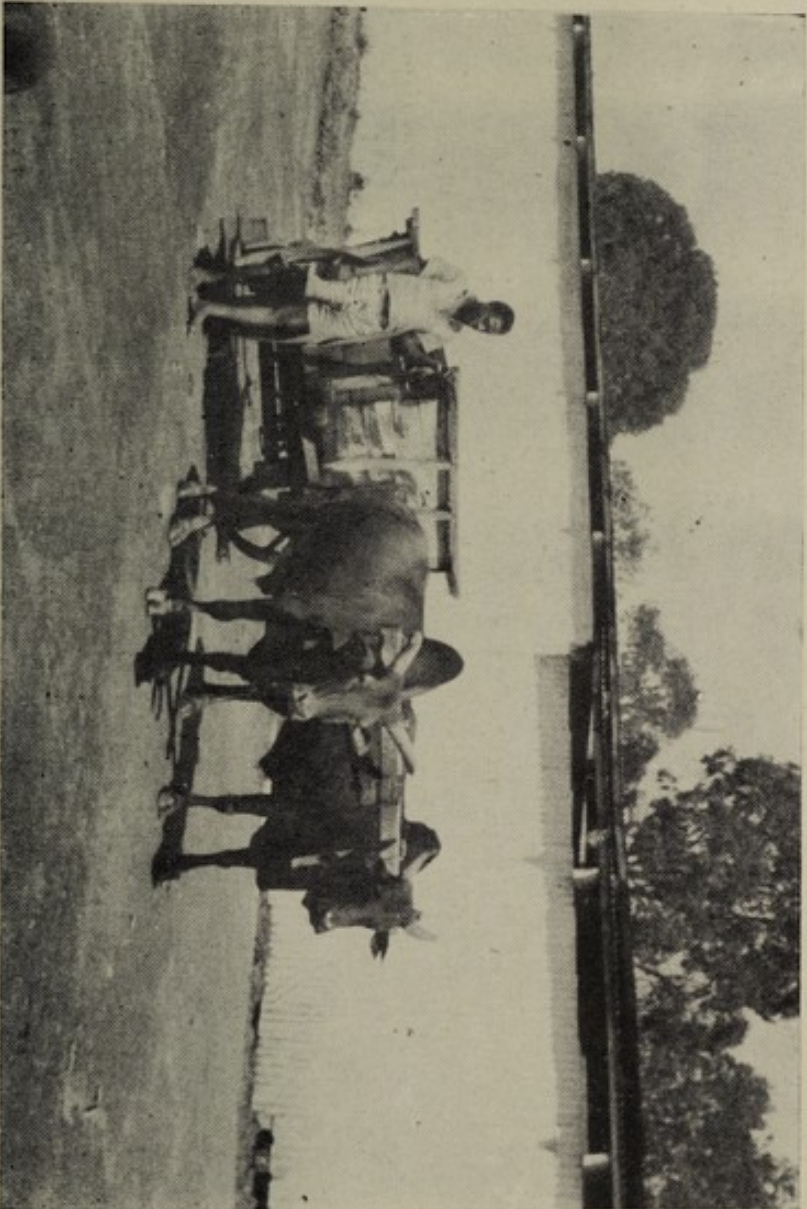
In 1943 thanks to an increase in staff, it became possible to keep records of the work performed, and from that date on, Cleansing Department records are complete. These show a big increase in all branches of the Cleansing Department's activities, for example :— The refuse Removal in 1933 was 8,784 tons, in 1943 this had increased to 17,526 and in 1950 this had increased to 51,009. In Conservancy, there are no records prior to 1943, but in that year 609 Con. Tanks, 354 Septic Tanks and 1,649 Waste Water Pits were cleared. In 1950 the comparable figures were, 4,290 Con. Tanks, 844 Septic Tanks and 13,675 Waste Water Pits.

In 1933 only the Central Commercial Area had Street Cleansing services; today services are given throughout the Commercial Area, Eastleigh and the major portion of Parklands, and on the Hill along the Ngong Road.

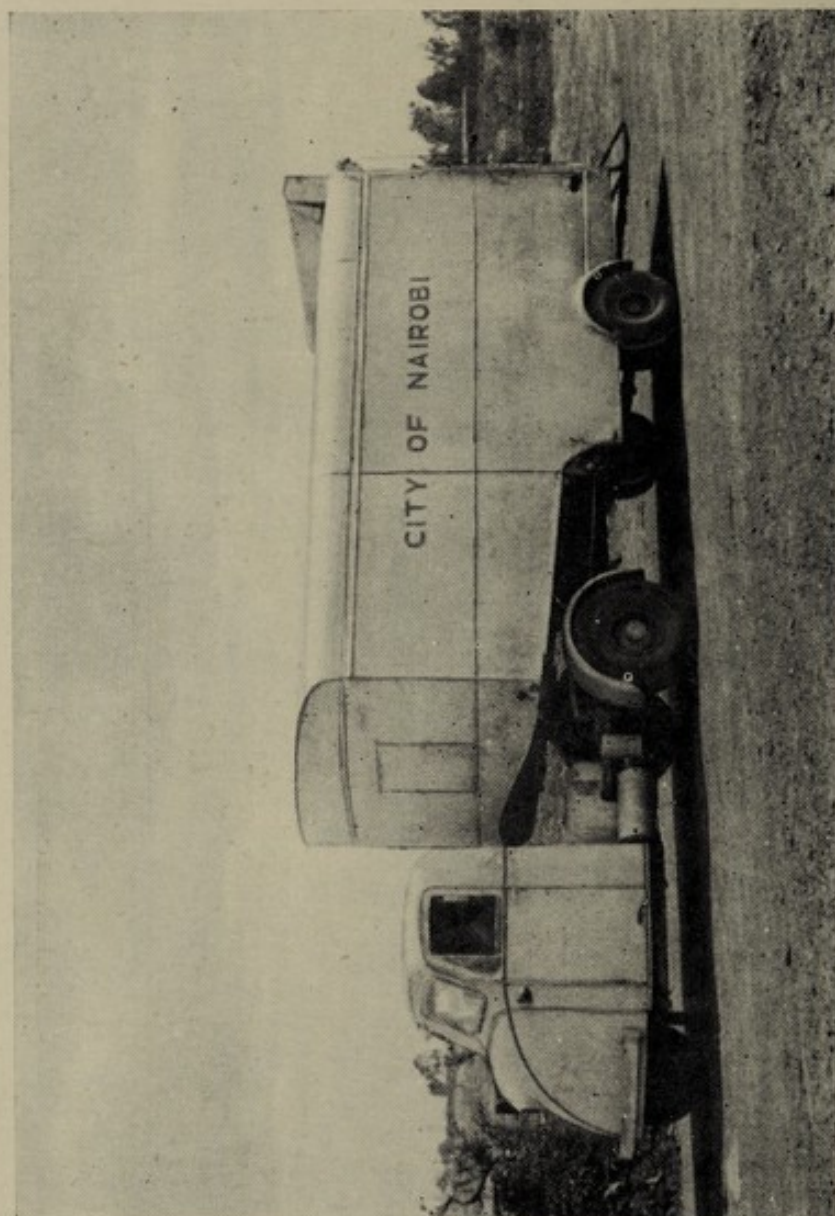
During the period under review great improvements have been possible in every section. In the case of Refuse Removal this has mainly been by improved vehicles and a greater lift per man per day. In the Conservancy Section, the main improvement has been a reduction in the number of vehicles used, and a reduction in the number of Africans required for clearing buckets, in 1933 there were about 3,000 buckets in Nairobi, today the figure is about 8,000 and less labour is required to collect and dispose of the contents of these.

A new feature was introduced after the war, the Sweeper Service. For the first few years, it did not prove entirely the success that was hoped for, but in 1950 the cash takings should be in the vicinity of £10,000. This service is steadily growing and it appears probable that we shall have a very much larger revenue in the years to come.

It should here be noted that Mr. A. Savy has been almost entirely concerned with the period of expansion in this section and it is due, to a large extent, to his work that this section is proving so successful.



REFUSE REMOVAL CIRCA 1910.



REFUSE REMOVAL 1950.

Mr. Pienaar has shown what good supervision can do in the Refuse Removal Section, and Mr. Rozaner has shown this in the scavenging work by the results he has obtained.

Staff :

During the year, Mr. A. Beaufond resigned, and Mr. Kuldip Singh was engaged in his place and resigned towards the end of the year. Mr. T. Davis returned from overseas leave in February, and Miss D. M. Ewing went on leave in March and returned in September. Mr. A. Savy went on long leave in December, Mrs. Rush and Mrs. Dodd were in the department as temporary clerks during Miss Ewing's absence on long leave.

In May a strike of most of the Department's African staff caused great dislocation in all services. Conservancy was maintained by the use of outside labour. These men were not entirely satisfactory, but maintained a sketchy service throughout the strike period. Since the workers resumed work after the strike, there has been no further trouble except a few instances of a very minor nature which were easily cleared up.

The Expansion may be gauged from the following figures covering a five year period :—

Table 51

	1945	1950
Conservancy.		
Estimated totals tons night soil removed and disposed of	9,204	12,475
Exhausters.		
Total Conserving tanks emptied ...	987	4,125
Total Septic Tanks emptied	307	844
Total Waste water pits emptied ...	5,952	13,675
Refuse Removal.		
Total Estimated tons refuse collected and disposed of	29,100	51,009
Sweeper Service.		
Estimated total premises serviced ...		1,330

SECTION 12

SEWERAGE AND SEWAGE DISPOSAL

(Contributed by Assistant City Engineer (Sewers))

General :

During the past year the rate of development of Nairobi has continued at the same high rate which has been such a feature of the post-war years.

This development presents a difficult problem to the Council.

The original design of the sewerage in the older parts of the town did not envisage the present day population and a number of main sewers are reaching their maximum capacity and should be replaced by larger diameter pipes.

This work would absorb a large percentage of the Council's spending power, and the services of their staff, without sewerage of any of the areas at present developing so rapidly.

This would be a brake to development but in the near future a balance must be struck between construction of relief sewers and the sewerage of new areas.

The Council have already approved the construction of trunk sewers to the value of £300,000 during 1951.

In 1950 the Council pressed for an amendment to the Municipalities Ordinance to enable them to place the burden of the cost of branch sewers upon plot owners.

This amendment has now been obtained and should be in force during 1951.

New Construction :

During 1950 a total of 25,378 lin. feet of sewers were constructed compared with 30,118 lin. feet in 1949, and 22,324 lin. feet in 1948.

Of this figure, 865 lin. feet was essential reconstruction of existing sewers and therefore the total length of new sewers is 24,513 lin. feet or 4.64 miles.

The completed works were situated as follows :—

						Lin. feet
Woodley Estate	...	...	...	9" Pipe sewer	...	5808
				6" Pipe sewer	...	400
Eastleigh	...	...	...	9" Pipe sewer	...	6923
Ngara Road	...	...	...	9" Pipe sewer	...	853
				6" Pipe Sewer	...	726
New European Hospital Area	...			12" Pipe sewer	...	3306
Khan Road Area	...	...	...	9" Pipe sewer	...	120
				12" Pipe sewer	...	626
				18" Pipe sewer	...	255

Juja Road	...	...	9" Pipe sewer	...	2830
Grogan Road Area	...	...	9" Pipe sewer	...	1290
Smaller schemes in various areas			6" Pipe sewer	...	123		
			9" Pipe sewer	...	1902		
			12" Pipe sewer	...	216		
Total					25,378 Lin. Ft.

Of the above work

17,464 lin. feet of sewer was constructed under contract.

3,794 lin. feet was constructed by direct labour.

4,120 lin. feet was constructed by private developers to Council Specification and under Council supervision.

Staff and Standard of Work :

A new Engineering Assistant was appointed in 1950 and the Sewers Department is now at full strength. The standard of Contract Work has shown a very marked improvement over 1949 work.

Sewage Disposal Works :

The operation of the Disposal Works at Eastleigh has been quite satisfactory during 1950.

The average dry weather flow to the works is 1,250,000 gallons per day which is the capacity for which the works was designed.

Messrs. Howard Humphreys, the Council's consulting Engineers have been working on the design of further extensions to the works to deal with the steady increasing flow and it is expected that the first contract will be let shortly.

Maintenance :

The remarkable abuse to which the sewers of Nairobi are subjected has once again made maintenance difficult and in this matter no improvement can be reported on last year.

Equipment which arrived from England in the middle of the year has made the maintenance squad's work easier and reduced the average time necessary to clear blocked sewers.

It is quite customary for two or three blockages to take place per day compared with perhaps one per week in a comparable town in England.

The blockages are nearly all attributable to three causes.

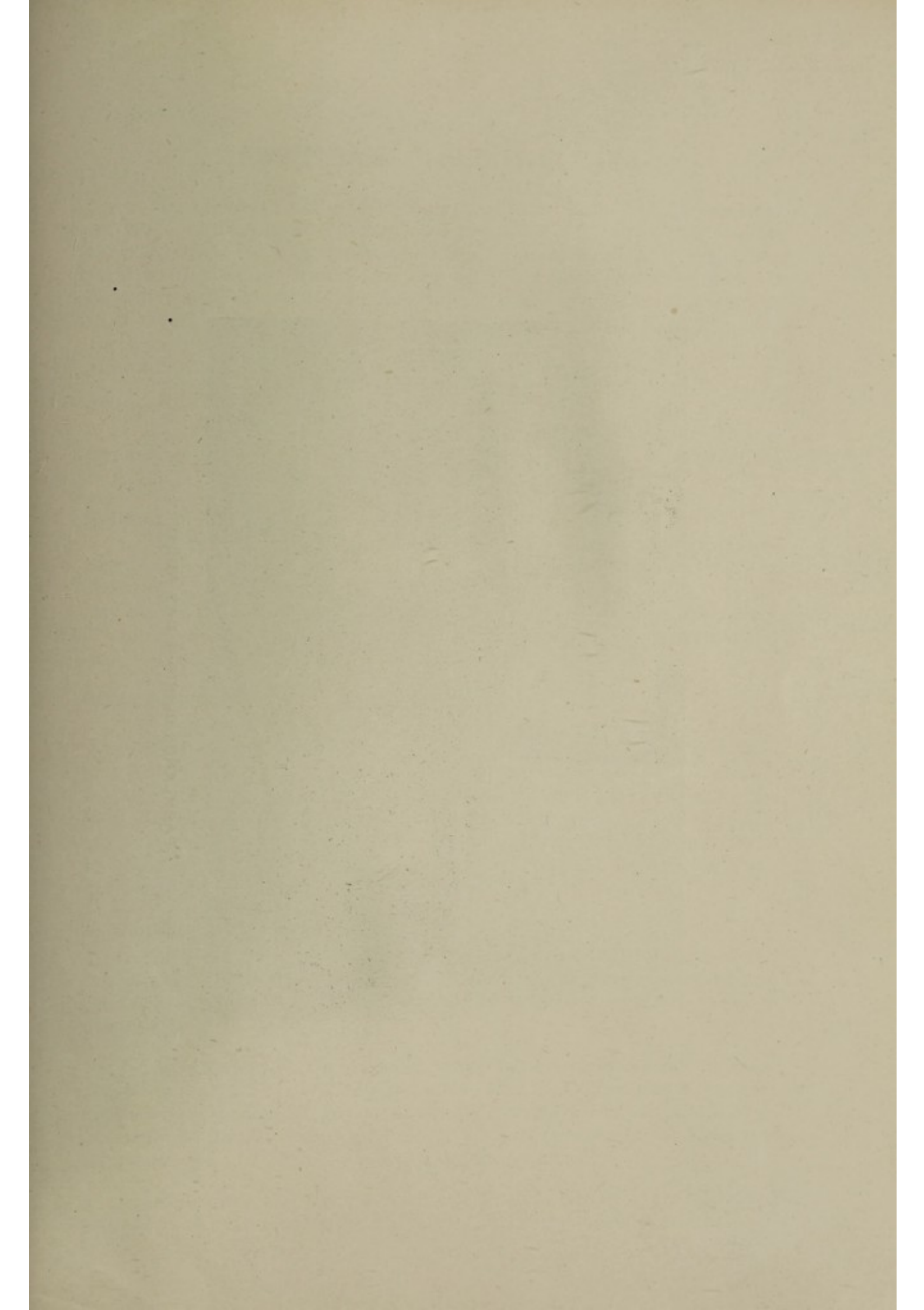
Firstly, the vast quantity of rags and sacks which are placed in the sewers.

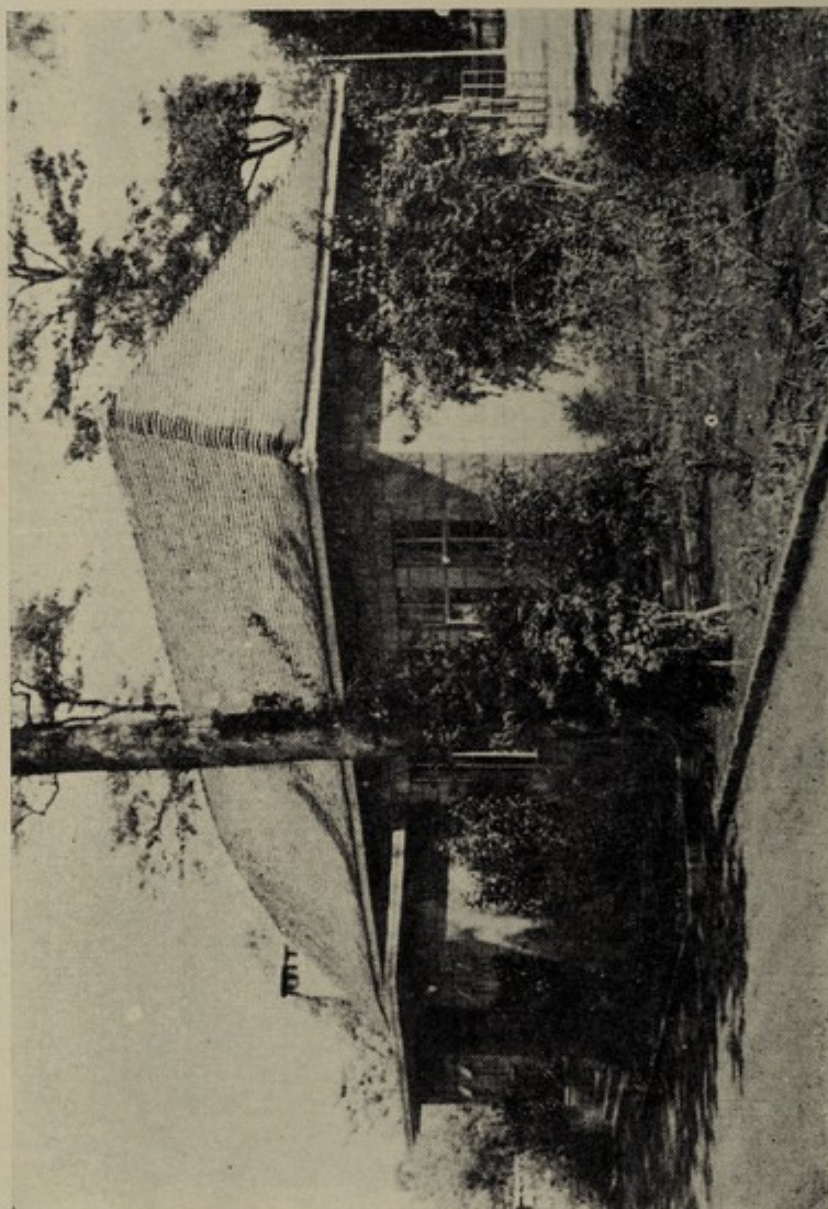
Secondly, the deposition of grit which is used for scouring and then washed down the sewers and thirdly, the deliberate blocking of sewers by persons wishing to irrigate crops with the resultant overflow.

Statistics :

Mileage of sewers in 1949	...	46.47 miles
Laid in 1950 ... ..	...	4.64 miles
		<hr/>
Total at end of 1950	...	51.11 miles
		<hr/>

During the year the Council made 451 connections to the sewerage system compared with 209 in 1949.





PARKLANDS CLINIC & DAY NURSERY.

SECTION 13

EUROPEAN CHILD WELFARE

The European Child Welfare Service is no more than 3½ years old, so that a retrospect for Jubilee Year surveys a very short life. Suffice it to say that, from the point of view of Clinic Services, it has grown from an ill-attended Inoculation Session at the Lady Northey Home, to an active full-scale Child Welfare Clinic, held each Wednesday evening in the Parklands Day Nursery. The Day Nursery itself, which is even younger than the Clinic, is the subject of a separate report from the Matron-in-Charge.

Staff:

Dr. Philippa Gaffikin continued as Medical Officer in Charge throughout the year, and Miss Isabel Watson, Matron in Charge of the Day Nursery, continued to act as Clinic Sister.

Building :

The hope expressed in last year's report, that a separate Clinic room might soon be added to the existing building, has been again deferred: and the arrangement of last year persists, namely to use the Day Nursery schoolroom as a waiting room and weighing room, and the Matron's office as an examining room. As the Clinic grows more popular this becomes ever less satisfactory.

Clinic Activities.

The General Clinic Session on Wednesdays was held weekly throughout the year, and persistently out lasted its nominal time-limit of 4 p.m. to 5.30 p.m.: it is now accepted that the Clinic period extends from 3.30 to 6.30 p.m. — awkward hours for the Staff, but evidently the most satisfactory for the public. The Day Nursery sessions largely consist of routine medical examinations on entry to the Nursery and thereafter at intervals of 6 months, and these sessions were held as necessary on Tuesday evenings.

Attendances :

The level of attendances has increased compared with last year, and it is pleasant to note the numbers of mothers who have attended with one child and are now coming with that child as a toddler and bringing a new baby.

The question of extending the scope of the European Child Welfare Service is a matter of great concern to the Medical Officer, and a proposed additional establishment of one European Nursing Sister, for Child Welfare work in the European community, was put forward in the Estimates for greater care of Nairobi's most neglected community.

Attendances and work carried out through the year are appended as table (a) and comparative figures 1947 to 1950 as table (b).

Table (a)**Clinics Held.**

General	...	...	52
Day Nursery	...	...	26

Attendance.

	Infant.	Toddler.	Day Nursery.
Attendances	827	162	163
New Registrations	75	33	29

Other Services.

Vaccinations	...	...	102
T.A.B.	...	...	68
Diphtheria Anatoxin	...	...	113
Other Inoculations	...	...	97

Table (b)**Comparative Attendances — 1947 to 1950.**

	1947	1948	1949	1950
Advice, Weighing etc.	16	160	809	1152
Vaccination	31	98	90	102
T.A.B.	20	65	152	68
Diphtheria Anatoxin	14	307	203	113
Other Inoculations	Nil	1	72	97

PARKLANDS DAY NURSERY :

The need for a Day Nursery was answered by the East African Women's League in November, 1942, when they opened one with 8 children, a Matron and 2 Assistants. The number of children increased to 35, with a Housekeeper being added to the staff. The present premises were completed in October 1948 and declared opened by Lady Robbins.

On November 1st, 1948, 50 full day children and 10 morning children were admitted to the new Nursery with a Matron and 3 Assistants. Within a year, the waiting list had grown to over 100.

The children respond to the regular routine of the Nursery and tears from new children on admittance are soon forgotten. The children improve in health and are happy and contented at their "school", as they like to call the Nursery. Their days are full and occupied, with always something to do whether organised or free play. Rest time from 12.45 to 2.45 p.m., when quietness is enforced, brings sleep to most of the children, and relaxation for the Staff!

In 1949 a Pageant was organised in aid of the Polio Research Fund, the Nursery entered a float "The Old Woman Who Lived in a Shoe", gaining 1st prize for best children's float. A very creditable effort by the Staff.

The Staff had a dance to help the Fund and raised £50.

In April, 1950, the Public Health Committee consented to a morning assistant being engaged and Mrs. Simpson commenced duties as Kindergarten teacher. The morning attendances then rose to 22.

The Nursery Staff held a dance in September 1950 in aid of the Princess Elizabeth Hospital for Women, and were able to hand £60 towards the fund.

In July, 1950, we had a case of Poliomyelitis. Only a few parents removed their children from the Nursery and apart from all necessary precautions being taken, life went on just the same for the children attending. The child returned to the Nursery in September and in a few weeks was walking unattended.

Throughout the year the general health of the children has been good. Infectious diseases reported, 2 cases of mumps, 3 cases of measles and 9 cases of chicken-pox.

A Nursery Clinic is held every Tuesday with Dr. Gaffikin in attendance. Children receive a medical examination on admittance which is repeated every 6 months, and are vaccinated and immunised against Diphtheria, Whooping-Cough and Typhoid.

There are 164 children for full day and 30 children for mornings only on the waiting list for admittance to the Nursery.

SECTION 14

ASIAN MATERNITY AND CHILD WELFARE**A Retrospect for Jubilee Year :**

The Indian Maternity and Child Welfare Department cannot look back over a half century of progress, for the first Clinic was opened as recently as 1936 : but these fifteen years have seen a steady advance in the provision made in Nairobi for the welfare of Indian women and children — and a steady advance in the use which the Indian community has made of the services available. It is appropriate to look back for a moment at the development of the Department.

June 1936.—The first Indian Maternity and Child Welfare Clinic was opened in Ngara, under the direction of Dr. Edith Hartley, then Medical Officer in charge of all Maternity and Child Welfare Services. It was staffed by a European Health Visitor, Mrs. Gibb, with a Goan midwife acting as Health Assistant.

September 1937.—The first trained Indian Health Visitor, Miss Priscilla Benjamin, arrived from Delhi and took over the Clinic.

1937 — 1942.—This single Clinic steadily increased its scope and influence during these five years.

1942.—A Training Course for the indigenous Dais was begun.

May 1945) A second trained Indian Health Visitor, Miss Ghodke,
October 1945) arrived from India, and in October a second Clinic was opened, at Sandiford Road in a building provided by K.U.R. & H., and staffed by Miss Ghodke and a locally recruited, untrained Health Assistant.

December 1945) A third Indian Health Visitor, Mrs. Chaddah, was
June 1946) engaged, and Pangani Clinic was opened.

At the same date, a separate Medical Officer was appointed for Indian Maternity and Child Welfare, which had now grown too large to be any longer combined with African Maternity and Child Welfare.

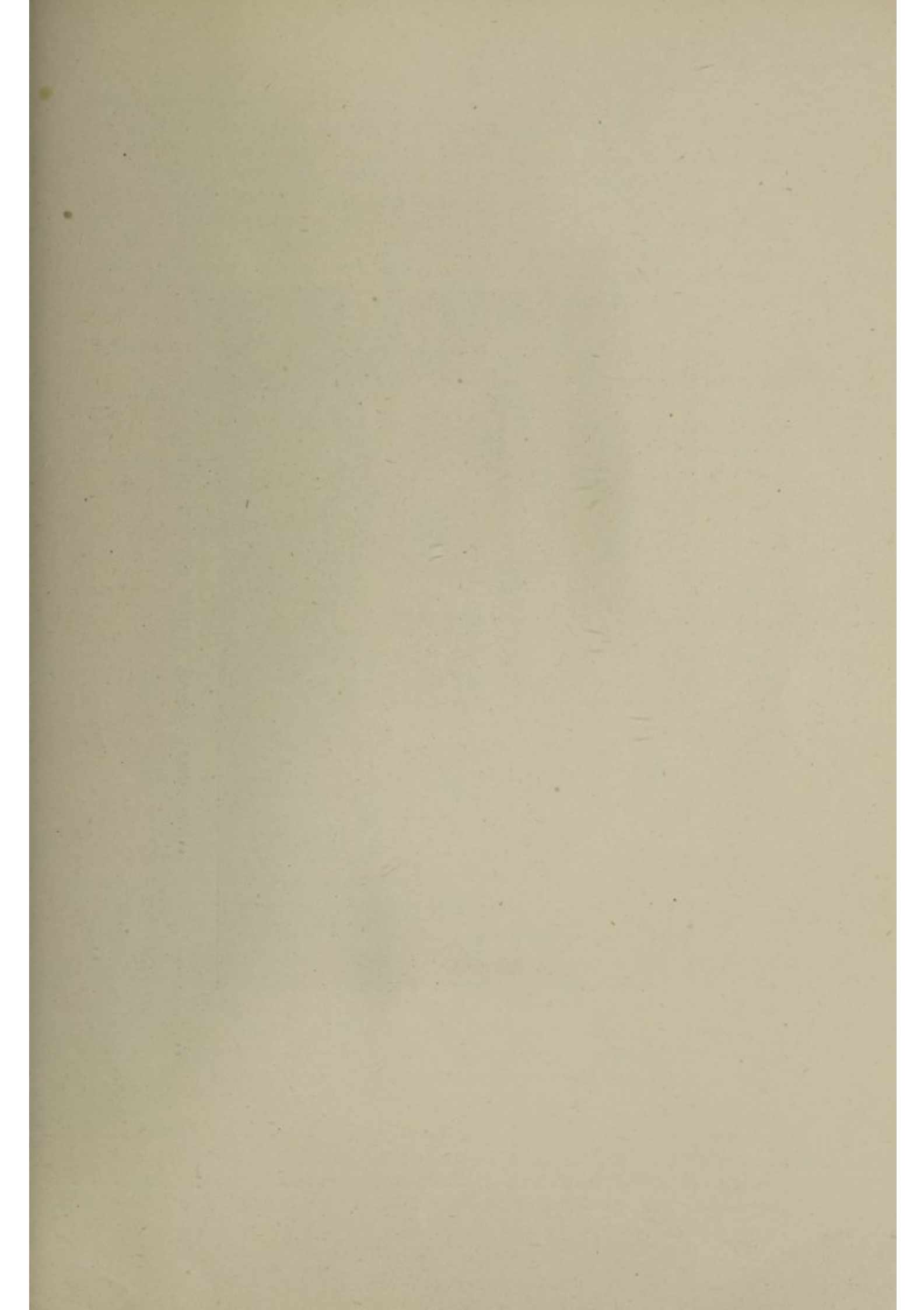
May 1948.—The present Medical Officer took over the Department.

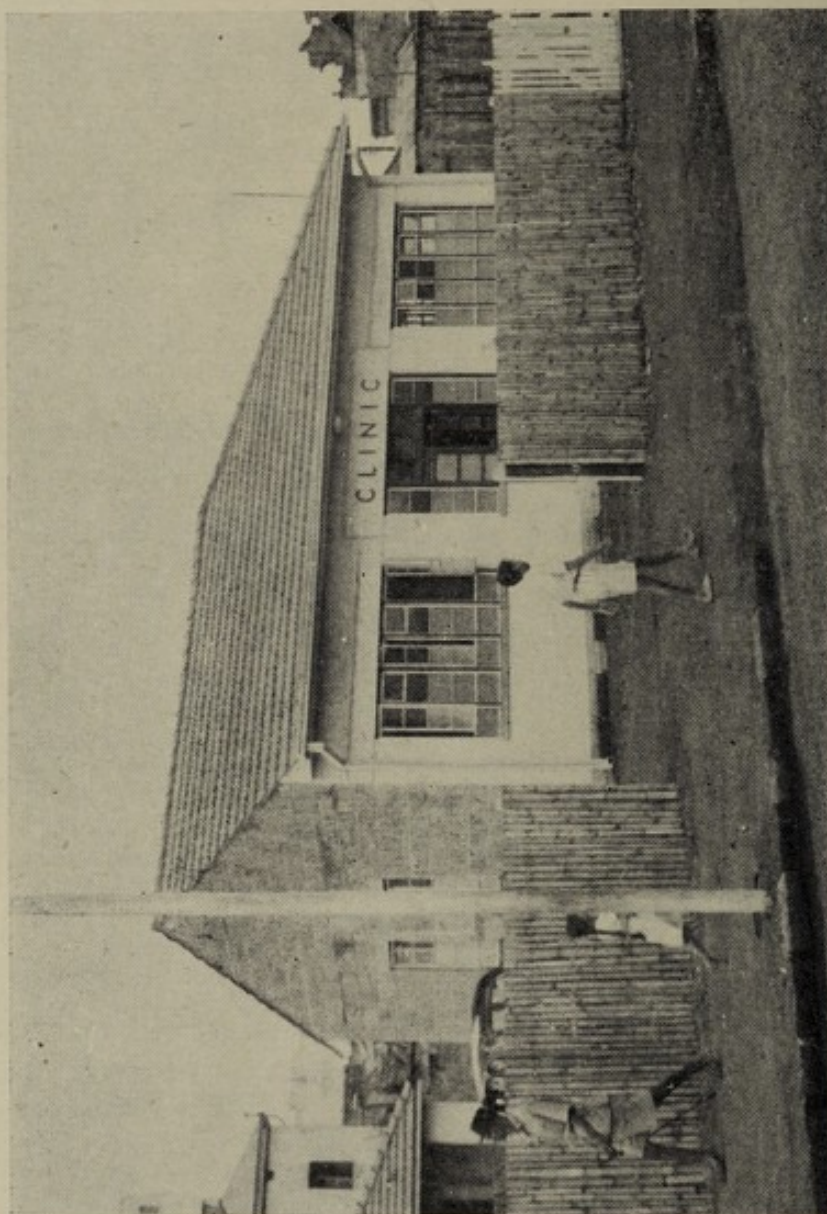
August 1948.—An extension of Clinic services was initiated, by the provision of inoculation facilities at all three Clinics.

1949.—A Training Course in Health Visiting for Indian women was begun. The last untrained Dais in Nairobi completed their course, and so to —

1950

The Jubilee Year was outstanding for this Department, as for the whole City, as the year of the Charter Celebrations. A float illustrating the theme "The World's Future Rests on the Welfare of Children" was contributed to the Pageant which formed part of Charter Day, and the





ADDITIONAL ASIAN CLINIC OPENED IN 1950.

whole Department joined in the general rejoicing. From the particular viewpoint of Indian Maternity and Child Welfare this year is noteworthy above all for the completion of the first Training Course in Health Visiting. This scheme, long cherished but so often postponed, was at last accomplished, and it is pleasant to be able to add that all five students satisfied the Examiners. At the official opening of Victoria Street Clinic in October, the opportunity was taken to entertain the many helpful people who had contributed to the success of the Course, and those present had the pleasure of seeing H.W. the Mayor present the first Diplomas in Health Visiting ever to be achieved in East Africa.

Buildings :

The routine work of the Department was carried out during the first half of the year in the same three buildings as in 1949, namely, Ngara Clinic which is rather small but very satisfactorily sited, Sandiford Road Clinic which is adequate in size for its small area, and Pangani Clinic which is adequate in size for its small area, and Pangani Clinic which is grossly overcrowded and more decrepit than ever. At the beginning of August work was sufficiently advanced on the new Clinic in Victoria Street for it to be possible to start using the building — and from that date all four Clinics have been in use.

Staff :

Medical Officer.—Dr. Philippa Gaffikin continued as Medical Officer throughout the year.

Health Visitors.—The establishment was increased from 1st January to one Supervisory Health Visitor and four Health Visitors, but the vacancy thereby created was not filled until after the Students' final examination.

Miss Priscilla Benjamin continued as Supervisory Health Visitor throughout the year, and also remained in charge of Ngara Clinic until the end of May.

Mrs. Elizabeth de Mello was Health Visitor i/c Victoria Street Clinic throughout the year, working in the area even when the Clinic was unfinished.

Mrs. M. R. Pachecos continued at Sandiford Road Clinic.

Mrs. N. K. Nayar joined the staff on 1st June, and took over Ngara Clinic from that date.

Mrs. Chaddah was absent on long leave until 2nd August, and off sick for seven weeks in October and November. During her absence, the remaining Health Visitors divided her duties between them. The Department had a full staff for only three months out of the twelve.

Health Assistants.—The establishment of Health Assistants was increased from five to eight on 1st January, but not all the vacancies were filled until March. The posts have changed their "incumbents" a number of times during the year, the resignations being mainly due to matrimony.

Students.—The first Training Course for Indian Health Visitors was ended by the Final Examination in April.

The Examining Board consisted of :—

Dr. Mary Graham Johnstone	)	nominated
Miss K. M. Barrett, S.R.N. (Health Visitor)	)	by the
W. Carter Esq. (Health Inspector)	)	D.M.S.
Dr. Philippa Gaffikin	)	of the Public Health Department.
Miss Priscilla Benjamin)	

All five students satisfied the Examining Board. Three are now on the staff of this Department, one is in the Public Health Department, Mombasa, and vigorous efforts are being made to secure a post for the fifth.

A second Training Course was begun in September, 1950, to last 15 months, with the following four students :—

Miss Shirin Habib Noormohamed.
Miss Mohinder Satbachan Singh.
Miss Joginder Gabri.
Miss Florence de Cruz.

Clinic Activities :

Antenatal Welfare. Weekly Antenatal Sessions were held at each of the four clinics, and were well attended, the total of 5126 being an increase over last year. It is sad to have to relate a rise in the number of maternal Deaths — seven in the year. Of these, two were attributable to Acute Yellow Atrophy of the Liver, a rare and dangerous complication of pregnancy; two to heart failure; two to haemorrhage; and one to post-operative shock. Of these seven cases, two only had been attending an Ante-natal Clinic, and both died of Yellow Atrophy, which is not a foreseeable condition.

Anaemia of the simple microcytic type continued to be the chief abnormality noted, the incidence being 64% of antenatal patients. Macrocytic anaemia of pregnancy was not seen during the year.

Albuminuria was detected in 131 cases, of which 26 were sufficiently severe to call for immediate admission to hospital. Two of these cases went on to frank eclampsia, but both recovered.

Child Welfare. Child Welfare Sessions were held weekly at each Clinic throughout the year, the "advice only" principle being firmly maintained. Attendance again increased, a total of 9455 children being brought to the Clinics in the course of the year. Two features of child welfare were stressed, quantitative assessment of breast feeding by means of Test Feeds, with complementary feeding advised where necessary, and the better nourishment of toddlers by cooking demonstration — the product of the demonstration being straightaway fed into the toddlers present, to their evident pleasure and the astonishment of many mothers who adhered to the old fashioned "milk-only" method of feeding children in their first and second years.

There were moderate outbreaks of measles and chickenpox among the toddlers, and some gastro-enteritis — affecting all ages — in the hot months, but no one disease attained to epidemic proportions. Lobar pneumonia and broncho-pneumonia together accounted for 53 deaths, of which 42 occurred at under one year old, and 51 infant deaths were ascribed to prematurity. In any community these two conditions are closely related to the prevalence of overcrowding: between them they accounted for almost half of the deaths in the age group 0 — 5 years.

Home Visiting. The principle of quality rather than quantity in Home Visiting — longer and more effective visits, in fewer houses per day — was pursued throughout the year. The Health Visitors were made very welcome wherever they went and their advice was received with respect. It was particularly gratifying to observe mothers, especially the younger ones with the first baby, asking to be visited. "An ounce of practice is worth a pound of precept".

Educational Work. Antenatal and Postnatal Exercise classes, and Toddler's Exercise classes, were conducted by a Health Assistant specially trained for these duties. Classes in Sewing and Knitting for Children were held by the Health Visitors at each Clinic, and were attended by mothers and unmarried girls, as were also classes in Home Nursing and First Aid leading up to the St. John Ambulance examinations. Cookery demonstrations proved extremely popular, and it was also possible to show occasional films on health and hygiene — a service which it is hoped to extend when the main hall at Victoria Street Clinic can be provided with a black out.

Inoculation and Vaccination. The total numbers taking advantage of these facilities are appended as Table 56.

Despite propaganda efforts on the part of the staff there was a marked falling-off in T.A.B. Inoculations — Typhoid was not a prominent disease during the year and humanity tends to forget a danger it cannot see.

General Practitioners. The continued pleasant relationship between this Department and the General Practitioners is an agreeable feature of the year's work. A total of 362 cases were referred to the Medical Officer for examination and opinion.

Midwives and Dais. Co-operation with the Indian midwives was definitely less satisfactory than last year. The same few educated and enlightened midwives brought their cases for examination, made full use of the Clinic facilities, and notified births — and received in return the Department's fullest response and help in any difficulty — but the vast majority did not: and furthermore they have realised that no evil has befallen those who ignore the Public Health regulations, and are thereby encouraged to persist in their defiance. The situation as regards notification of births is deteriorating fast. Notified births in 1950 totalled 3103: this Department has reason to believe that a further 700—800 occurred and

were not notified. It is quite clear that nothing can be done to supervise the practice of domiciliary midwifery in the Indian community until the City Council arms the Public Health Department with compulsory powers.

Co-operation with the Dais continued satisfactory. These women have learned to value the Department's help, and respond by notification and by bringing their cases to the Clinics. All the Dais now practising in Nairobi have attended the training courses at least once, but constant refresher instruction was given through the year.

General Observations :

In the words of the Pageant Slogan, "The World's Future rests on the Welfare of Children", and the infant mortality rate is the most sensitive index of the health of a community. On the basis of the total notified births, the rate has risen alarmingly compared with last year: and even when the figure used includes the births believed to have occurred though not notified it is still higher than last year — 70 per thousand compared with 63 per thousand.

Contributory causes remain the same.

- (a) Overcrowding — lowering the vitality of both the expectant mother and the child.
- (b) The high cost of living — which contributes to (a) and also to varying degrees of malnutrition.
- (c) Unduly large families and too rapid child bearing.
- (d) Shortage of water — still very marked in the Indian residential areas, and making adequate domestic hygiene very difficult.
- (e) Inadequate domiciliary midwifery, with resultant maternal morbidity and increased stillbirths and neonatal deaths.

Of these five points, the last named comes within the scope of a Maternity and Child Welfare Department, provided that such Department has adequate legal backing.

Great hopes were placed in former years on the prospect of establishing a Nursing Council, armed with powers to enforce an adequate standard of skill and care on those practising within its domain. Alas, the Council now exists, but apparently it has not yet fully adequate powers. It now devolves on the City of Nairobi to establish and maintain within its own boundary a level of professional competence in those permitted to practise domiciliary midwifery. There are a considerable number of Indian midwives in practice, with standards of training and skill varying from excellent — a few — to very poor. If this City could establish compulsory Registration of Midwives, renewable annually and such renewal made conditional on professional competence, satisfactory records and notification, and attendance at a Refresher Course at stated intervals, with these regulations enforced by a Supervisor of Midwives with adequate statutory backing, it would go far towards reducing Nairobi's Asian Infant Mortality Rate.

Table 52
Antenatal Clinics

		Ngara.	Pangani.	Sandiford Rd.	Victoria St.	Total
Attendance	...	1969	2205	483	469	5126
Clinics held	... ..	52	51	47	22	172
New Registrations	...	628	609	98	155	1490

Table 53
Child Welfare Clinics

		Ngara.	Pangani.	Sandiford Rd.	Victoria St.	Total
Clinics held	...	51	50	47	21	169
Attendances	... ..	3881	2998	1258	1328	9455
New Registrations :						
0—1 year	...	495	381	105	102	1083
1—5 years	...	328	248	68	252	896

Table 54
Home Visits Paid

			S.H.V.	H.V.	H.A.	Students with S.H.V.	Total
Ngara	... ..		589	356	1685	351	2981
Pangani	... ..		—	1287	1798	—	3082
Sandiford Road	... ..		—	1347	583	—	1930
Victoria Street	... ..		—	345	699	—	1044

Table 55
Comparative Figures 1946 — 1950

		1946	1947	1948	1949	1950
Ante-natal Clinics—						
Attendances	... ..	3560	4021	6715	4560	5126
New Registrations	...	1074	1032	1504	1410	1490
Child Welfare Clinic—						
Attendances	...	7661	8311	9691	9004	9455
New Registrations :						
0—1 year	... ..			1101	1103	1083
1—5 years	... ..			862	1128	896
Home Visits	... ..			9977	10632	9037

Table 56

Inoculation and Vaccination

			Ngara.	Pangani.	Sandiford Rd.	Victoria St.	Total
Vaccination	...	...	375	392	130	58	955
T.A.B.	...	...	171	35	72	39	317
Diphtheria Anatoxin	...	...	16	1	4	—	21
Other	...	...	11	8	7	—	25

Table 57

Minor Treatments

			Ngara.	Pangani.	Sandiford Rd.	Victoria St.	Total
Minor Treatments	...	...	387	177	205	109	878

Table 58

Anaemia of Pregnancy

			Ngara.	Pangani.	Sandiford Rd.	Victoria St.	Total
Primiparae	...	...	160	95	10	34	299
Multiparae	...	...	319	247	11	75	652

Total number of Antenatal New Registrations	...	1490
Incidence of Anaemia	...	64%

Table 59

Causes of Still-birth

Prematurity	...	...	...	19
Macerated Foetus	...	...	...	11
Asphyxia Neonatorum	...	...	...	3
Atelectasis of Lungs	...	...	...	1
Antepartum Haemorrhage	...	...	...	2
Pre-natal causes	...	...	...	2
Natural causes	...	...	...	4
Birth injuries	...	...	...	2
Difficult labour	...	...	...	4
Craniotomy	...	...	...	2
Monsters	...	...	...	2
Congenital syphilis	...	...	...	1
Hydrocephalus	...	...	...	1
Oligo hydramnios	...	...	...	1
Anencephaly	...	...	...	1
Cause not known	...	...	...	49
Total				105

Table 60

Causes of Death — Asian Children under 5 years.

Cause of Death.	Under 1 year.	Under 5 years.
Pneumonia	15	3
Double pneumonia	3	1
Broncho-pneumonia	24	7
Intracranial haemorrhage	3	—
Fractured Skull	—	1
Icterus neonatorum	6	—
Jaundice	—	1
Gastro-enteritis	11	3
Diarrhoea	9	2
Marasmus	4	2
Prematurity	51	—
Tonsillitis	—	1
Enterocolitis	1	—
General Debility	5	—
Pleural effusion	1	3
Meningitis	2	1
Heart Failure	4	3
Asphyxia	5	—
Encephalitis	—	1
Renal Failure	1	—
Gangrene of bowel and shock	1	—
Euphysema & hypostatic congestion	1	—
Spina bifida	2	—
Laryngeal obstruction	1	—
Cardiac failure	1	—
Nephritis	—	2
Intestinal obstruction	1	—
Hydrocephalus	1	—
Enteric Fever	—	1
Malformation	1	—
Carcinoma	1	—
Dehydration	3	—
Bronchitis	1	—
Respiratory failure	2	1
Atelectasis	1	—
Burns	—	1
Convulsions	1	1
Oedema of Lungs	—	1
Total	163	36

Of the deaths occurring at under one year of age, 98 occurred at less than four weeks.

SECTION 15

AFRICAN CHILD WELFARE

Staff :

European. Dr. J. A. T. Henry, Medical Officer i/c African Child Welfare was on overseas leave from 1st June for 4½ months, and the department was fortunate in obtaining Dr. O. Allen as her locum. Dr. Allen was very interested in the work and co-operated delightfully with the staff and patients. We are sorry that she has left Kenya and hope that she may return.

Mrs. Dugmore, Supervisor of Health Visitors, was on duty throughout the year and her ability and enthusiasm never flagged. It is due largely to her energy and foresight that the new policy of using Africans to be in charge of clinics can now be implemented. All the clerical work and planning for 1951, which had to be done during the Medical Officer's leave, was done by Mrs. Dugmore, and, also, her helpfulness and ability allowed Dr. Allen to become fully acquainted with the work in a short time.

Mrs. Gibb was on overseas leave for six months and then returned to work.

Mrs. Rowe proceeded on overseas leave with effect from 1st April for three and three-quarter months, but terminated her appointment before leaving for domestic reasons.

Mrs. Adams worked throughout the year on a temporary appointment, and was transferred to the V.D. Clinic w.e.f 1st Jan. 1951.

Mrs. Davies returned from overseas leave in March.

Mrs. Taylor had a temporary appointment, as locum for Mrs. Gibb, from 17th July, until the end of the year.

The health record for the year was good, though 48 days were lost due to sickness.

Five days were lost due to absence for family reasons i.e. unpaid leave.

African. The implementation of new terms of service for Africans has removed the discrepancy of having grade 1 African Assistants for long periods on temporary service.

Delina resigned on April 30th due to the transfer of her husband, and the Grade 1 African assistants throughout the year have been Marion, Assinati, Roda and Drusilla (replacement for Delina).

By relinquishing the service of one European Health Visitor, we hope to staff and start two new clinics, one in Shauri Moyo P.W.D. (the building being lent by the P.W.D.) to serve the Bahati Housing Estate; and the other in Maisha (the building and basic equipment being supplied by the E.A.R. & H.). Each of the six clinics will be staffed by an African

Grade 1 Clinic Assistant (in charge) and an African Grade 2 Clinic Assistant, and two clinics will be supervised by a European Health Visitor, and share the use of one Grade 2 Assistant. The 7th Clinic, is being run with a Health Visitor, Mrs. Gibb, who can also do some relieving and supervising duties, and two grade 2 Assistants.

We feel confident that the African Grade 1 staff can undertake this work and hope that eventually they may be trained to obtain an H.V. certificate, acceptable within the regulations of the Kenya Nursing Council, which, as they are already certificated midwives, should not be impossible.

A small staff change was made during the year to replace male cleaners with women.

Details of African personnel are given at the end of this report.

Due to sickness 112 days were lost, of which Emma accounted for 82 days, suffering from pernicious anaemia. (A case of considerable medical interest and investigated and treated by Dr. Foy).

Leave without pay was granted 298 days for maternity leave and domestic reasons.

Review of Activities :

The work of the clinics proceeded at its usual high standard and we are eager to obtain the blessing of the Council to proceed with the policy of Grade 1 Africans being in charge of the clinics under European supervision. The first few months of 1951 will be a time of training for the Health Visitors as well as the Africans. Not being so close to the work the Health Visitors will be able to have a new view of it and we are hopeful that many constructive suggestions will result. Already we see that much more must be done through the fathers and an indication that this may ultimately be successful is afforded by the men's response to the malaria letter. To explain, when malaria is diagnosed in a mother or child, a letter is sent to the father stating this, asking him for the 1/- or -/50 cents to pay for the medicine, and telling him that the patient must attend for the necessary number of days. This has eliminated the necessity for chasing up defaulters as the father can now know from the record of treatment card, which the patient retains, whether she is attending or not.

There is a letter, already drafted, to be left with each new family during visiting, asking the man to make an appointment to see the Health Visitor, to discuss the activities of the clinics, and to learn in what ways his family can be helped by them. Also, it affords an opportunity to ask for the man's co-operation if it is necessary to refer wife and child to consultants or, to hospital, and in the event of his wishing to consult a general practitioner, to obtain a note from the clinic of investigations done and treatment already received, to take with the patient.

Two reports emphasize the necessity to use the men,

Health Visitor, Pumwani reported "What is so noticeable in this location is the part fathers play. The English speaking Africans are the

biggest offenders, demanding this and that from the clinic, and when really wanted to do something by the clinic (such as taking himself, wife or child for V.D. treatment) the biggest majority refuse. The mothers won't or cannot do anything without their consent".

Health Visitor Makongeni reported "There have been a few families who have shown complete disinterest in the clinic and who do not wish to co-operate even the treatment of malaria etc. or vaccinations, this is especially noticeable among the senior grade wives, who appear to be influenced by their husbands, who think they know everything. Some effort has been made to contact these husbands with moderate success".

On the whole, there have not been many cases of hardship due to the charging for medicines, and we are very grateful to the Government Dispensaries and Hospital for their co-operation in cases referred to them. The total money collected during the year was Shs. 4,825/50 cents.

Ante-Natal Clinics :

The total number of new cases for all clinics was 1,735 with total attendances 5,634, both figures showing increases over the previous years. The position regarding attendances of cases referred to the V.D. Clinic has improved greatly since free treatment was re-instituted by Council for ante-natal and post-natal cases.

Post-natal examinations are few in number, and I cannot help feeling that more teaching should be done on this subject by the African staff.

Makongeni reported "Post-natal attendances have been satisfactory in most cases, and 88 women were examined, that is about 50%". (Note that defaulting may be due to the fact that women may have returned to the reserve).

Pumwani reported "Post-natal examinations nil. I put this down to the old women, who have lived so long in Pumwani, bringing up the old superstitions of their tribes".

The other three clinics come somewhere between these two. The excellent midwife, Mrs. Sarah Charles, did much to build up a body of opinion among the mothers in Makongeni about the usefulness of post-natal examinations.

Gynaecological Clinic :

These clinics were held at Kaloleni Clinic and were conducted by Dr. J. F. Mark and a Government doctor attending alternate Wednesdays. The Government Doctors who came, were Drs. Craig, Calcott, Chandler and Hassett.

No. of Clinics held	...	...	...	50
New Cases	...	...	...	238
Re-attendances	...	...	...	267
Total attendances	...	...	...	505

Tribes

Kikuyu	...	...	122
Makamba	...	...	49
Jaluo	...	...	26
Mganda	...	...	8
Maragoli	...	...	7
Nandi	...	...	4
Marama	...	...	3
Mnyori	...	...	2
Nyasa	...	...	2
Arab	...	...	2
Lumbwa	...	...	2
Teita	...	...	1
M'soga	...	...	1
Manyala	...	...	1
Somali	...	...	1
M'Doruma	...	...	1
M'Tamharu	...	...	1
Embu	...	...	1
Meru	...	...	1
M'Rabai	...	...	1
M'Ziba	...	...	1
M'Tendi	...	...	1
Total			238

Referred by :

Venereal Diseases Clinic	...	...	...	6
African Maternity Hospital	...	...	...	1
African Child Welfare	...	...	...	227
Other Doctors	...	...	...	2
Employers	...	...	...	2
				238

Disposal :—

Referred to V.D. Clinic	...	...	...	41
„ to A.M.H.	...	...	...	13
„ to G.D.	...	...	...	4

Surgical Cases :—

Operations performed	...	...	...	64
„ refused	...	...	...	61
„ advised	...	...	...	125

Laboratory Specimens Examined :—

Men 87.

Women 41.

Treated at Clinic :—

Cervical erosions cauterized	...	...	...	17
Insufflation of tubes	...	...	...	48
Medicines administered	...	...	...	35
Advice	...	...	...	44

Treated at Venereal Diseases Clinic :—

Douching (1 to 6 weeks)	...	...	...	35
For investigation etc.	...	...	...	6

The number of cases sent to the Venereal Diseases Clinic for investigation are few, as most of the primary V.D. investigation was done at this clinic.

It was decided to discontinue the Gynaecological Clinic at the end of December as it took up a lot of the time of the staff of the Kaloleni Clinic from their correct clinic duties, and, it was felt that the women did not retain confidence because of the multiple changes in the consulting staff and that yet another doctor would probably perform the operation when she went to hospital.

The cases are now referred to Dr. Hassett's Gynaecological Clinic, which is held at the General Dispensary on Thursdays.

Child Welfare Clinics :

In place of the usual Baby Show, a very successful party was held at each centre. Each event was a much happier occasion than the Baby Show of the previous years, where the families seemed somewhat over-awed by such a large gathering.

The Shs. 400/- subscribed by Council was spent on cakes, sweets etc., orders being submitted in the usual way through the Stores-Superintendent.

Additional funds were raised by Jumble sales etc.

Total I.W. attendances were almost back to the maximum years of 1946 and 1947, and this in spite of the fact that the policy of not treating children or A.N. cases who are not eligible for registration as regular or casual cases has been discontinued throughout.

An effort was made to take greater interest in the pre-school children and this figure shows an increase of 637 compared with 1949.

A small number of toddlers tables and benches have been supplied to each clinic, and it is hoped to use the milk bars for training the children in personal hygiene appropriate to a meal time. For this the change to women cleaners, as they help with the milk serving, should be an advantage. The milk is also used to teach the infants to drink it at weaning age and to instruct the mothers in such procedure.

A great number of routine blood and stool tests have been made when the children return from the Reserves, and, a few mothers, on return from safari, have actually come to ask that these investigations be done.

Dispensary attendances have increased and a percentage of this is due to course of ante-malarial medicines and sulphonamides being completed.

Home Visits. The numbers have fallen, but we like to think that the quality has improved. We are trying to teach and demonstrate to the mothers in their own homes rather than inviting them to group demonstrations in the clinics. The work attempted in these is as follows :—

To instruct in cleanliness of the house, personal hygiene, care of the sick, adequate clothing, weaning and diets, V.D.C. attendances, clinic attendances and for treatment of illness, instructing and inviting new families, checking up defaulters and families who have gone away.

Inspection of housing and sanitation.

Medical Examination of nursery school children was continued, except during the Medical Officer's overseas leave. Now Dr. Singleton has started school medical examinations before admission to the Government schools, we hope to co-operate by lending our records, so that a child's complete history may be obtained.

Medical Aspects :

In many cases the health standard of the women and children is low, probably due to inadequate feeding and chronic infections. We are hoping that the request by the General Manager of the E.A. Railways and Harbours to the Director of Medical Services that something be done in the Kisumu area will result in benefit to the health of the mothers and children returning from this area.

The percentage of routine blood slides taken in the clinics which is positive for malaria is high both in ring and crescent forms, and many of the mothers and children have a marked degree of anaemia.

There have been no major epidemics during the year and the annual out-break of measles did not start until the end of November, and was of a mild type and only a few cases.

Chronic otitis media, respiratory tract infections, eye infections, gastro-enteritis, helminthic infections, malaria and infected scabies comprised the majority of cases of sickness.

Laboratory Tests :

Number of Kahn specimens examined	1582	positive	249
Number of cervical smears examined	1490	positive for G.C.	123
Number of blood slides for malaria	4921	positive	1,247
Number of stools for helminths	2,484	positive	1,070
Number of Vaccinations done	1,212		
Number of T.A.B. Inoculations	2,508		

We are trying to co-operate with the fathers regarding giving vaccinations and inoculations, so that some degree of knowledge may be imparted as to what the children are being given.

One danger of their ignorance, is that a child, having received a T.A.B. injection in a clinic may be taken a few days later to the Town Hall Inoculation Centre and be given another, as the popular belief is that the Town Hall injection is a "shauri ya safari" and believed to prevent malaria.

During the year some very excellent reports on housing conditions and sanitation have been written by the Health Visitors, (outstanding amongst them being Mrs. Taylor's contribution) and improvements have resulted. The Africans, themselves, do much to spoil public amenities by theft, deliberate destruction and misuse. On the whole the water supply has been better everywhere, though Health Visitor Kaloleni reported "There continues to be an intermittent shortage in the location generally." There should be an improvement when the many leaking high service tanks have been replaced. (This work is now in progress).

A large number of houses have been completed during the year and populations moved from one estate to another, e.g. P.W.D. Starehe is now in P.W.D. Shauri Moyo. Also ninety-two houses were completed in Maisha (Makongeni) and families were transferred there from Muthuruwa and other parts of Makongeni. In order to allow Maisha to have a clinic service in Makongeni the mothers and children from 380 cottages in Makongeni were attached to Kaloleni Clinic.

It is most unfortunate that so much of the housing in Kaloleni is being rented to "bachelors" because it was originally planned for, and is so eminently suitable as a family estate.

District Midwives :

Normal deliveries	... 217.	Ziwani	... 61
		Makongeni	... 93
		Kaloleni	... 63
Post-natal examinations	... 115.	Ziwani	... 39
		Makongeni	... 50
		Kaloleni	... 26

From the post-natal examination reports there does not appear to be any suggestions of negligence on the part of the delivering midwife.

Abnormal Cases :

Ziwani	1 B.B.A. died 5 mins. after delivery. ? cerebral haemorrhage.
	1 normal delivery but mother to G.H. for D.& C.
	1 normal delivery stillbirth. No foetal movements felt for 2 days before delivery.
Kaloleni	1 prolapse of hand with living child.
	1 stillbirth. 2 days in labour before calling midwife.
	1 hydrocephalic and spina bifida stillbirth.
	1 P.P.H. to A.M.H.
	1 Primary uterine inertia to A.M.H.
	1 infant died 6th day ? cause.

Makongeni 1 stillbirth of slightly premature twins.
1 weakly infant died 3rd day.

Total of all deliveries — 228. An increase of 39 over 1949.

The ratio of post-natal examinations appears to be about the same as for 1949.

General Remarks :

Mrs. Ruth Elikana continued at Ziواني throughout the year with a period of leave.

Mrs. Naomi William was at Kaloleni until the end of July, when she was transferred as an additional midwife to Makongeni where the calls were too numerous to be covered by one midwife.

Mrs. Sarah Charles continued at Makongeni until the end of August. She was then granted a month's leave as her health was far from good. In October, she returned to duty but 24 hours later decided that the work was too much for her and so returned to her home at Mombasa. We are very grateful for all the excellent work she did and for the high standard she set in the early days of this service.

As a suitable replacement was not available, Mrs. Naomi William has carried on alone.

Mrs. Teresia Joseph replaced Mrs. Naomi William at Kaloleni from August. Her confidence and ability to cope with her patients has gradually increased and her work is now quite satisfactory.

The standard of clinic buildings is high and we are fortunate in having adequate equipment for the work undertaken.

The Railway, as usual, have been very co-operative and Muthuruwa alterations were completed early in the year and the entire building re-decorated. We would congratulate Mrs. Adams on the attractive milk bar she has made for her toddlers, in this clinic. We have enjoyed another year of cinema performances and we have to thank Mr. Beechey for these, and his assistants for translating. We feel that much of his teaching, so carefully chosen and patiently repeated, must have been absorbed.

Child Welfare is essentially a "long term policy", and perhaps those who are not encouraged by this report might cast their memories back to 1926 when the only medical welfare service in Nairobi housing estates consisted of a weekly visit to Pumwani by Dr. Carman and Sister Rogers, (now Mrs. Dugmore). They spent two hours giving injections of bismuth to women who removed very grubby skin skirts to make this possible. Then in 1929 Government brought certificated Health Visitors from U.K. and one of the original ones was Mrs. C. Davis, who now supervises Pumwani and Kariakor Clinics.

In 1936 the service was transferred from Government to the Municipality, and has increased to five clinics working to capacity, and the prospect that two more may be opened in the near future.

African Maternity and Child Welfare Clinics.

		1950						TOTALS					
		Pumwani kor	Karia- kor	Kalo- leni	Mako- ngeni	Muthu- ruwa	1944	1945	1946	1947	1948	1949	1950
Ante-Natal													
New Cases	...	293	451	366	342	283	470	536	771	1,184	1,178	1,379	1,735
Births at home	...	39	48	59	163	73	282	337	282	422	475	428	382
Births in Hospital	...	48	52	28	44	54	—	—	—	276	326	332	226
Left Nairobi before delivery		61	114	18	142	73	—	—	—	319	273	202	408
Total Attendances	...	1,028	1,090	1,423	1,229	864	3,312	2,567	3,664	4,637	4,932	5,148	5,634
Infant Welfare													
0 — 1 year. New Cases		250	376	345	371	234	748	1,226	1,352	1,492	2,262	1,475	1,576
0 — 1 yr. Transferred to P.S. Register	...	97	122	61	43	20	—	—	—	247	346	397	343
1 — 5 yrs. New Cases	...	362	444	371	398	256	934	1,353	1,018	1,337	1,387	1,194	1,831
0 — 5 yrs. Total attendances		7,317	8,151	5,210	6,430	6,690	40,820	9,518	33,949	33,823	32,195	29,023	33,798
Home Visits													
By Health Visitors	...	1,199	1,375	819	623	996	9,212	6,612	10,384	9,292	6,712	5,278	5,012
By African Assistants	...	2,686	2,930	2,183	5,217	2,383	10,218	10,140	11,054	15,158	16,130	15,865	15,399
Total Visits	...	3,885	4,305	3,002	5,840	3,379	19,430	16,752	21,438	24,450	22,842	21,143	20,411
Dispensary													
Women	...	1,322	1,143	1,600	1,476	958	—	—	—	4,846	7,229	4,867	6,499
Children	...	6,524	7,167	6,335	9,922	5,815	—	—	—	27,927	33,861	26,163	36,763
Total attendances	...	7,846	8,310	7,935	11,398	7,773	23,336	7,002	12,850	32,773	41,090	31,030	43,262

SECTION 16

AFRICAN MATERNITY HOSPITAL**Development from 1944 to 1950 :**

On April 4th 1944, a full time Medical Officer was appointed to the Lady Grigg African Maternity Hospital, then under the direction of the Lady Grigg Welfare League. The Officer was lent by the Municipal Council to the Institution. Arrangements were in the course of being made for the Council to take over the hospital.

The staff then consisted of a Matron, Deputy Matron and part time Sister, all Europeans, 4 staff nurses, registered African Midwives, and 9 trainees. The general educational standard was poor, varying from standard II to standard IV. Girls were admitted more or less as they applied as it was found very hard to get applicants for training. The average number of births per month was 65, dealt with in a hospital of 27 beds. The theatre was adequate, but there was only one Labour Ward. It was found very difficult to obtain trainees of good standing as the up country parents were very loathe to send their girls to Nairobi.

In the beginning of 1945 the hospital was taken over altogether by the Council. The first thing that was done was to provide a Welfare Worker whose responsibility was to supervise the trainees. A fence was erected round the hospital and the rule was made that no trainee was to be allowed to go out unchaperoned into Nairobi. This regulation was notified to Mission Schools and to hospitals up country and the expected response was received. Since that date the number of applicants for training has steadily increased and in consequence the standard of preliminary education has improved. English has now become the lingua franca of the hospital, and the candidates will, from 1953 sit their examination in English.

In 1946 it was decided to institute a simple examination in Midwifery for students at the end of 18 months training, and to put those who passed in charge of wards under the direction of the European Sisters so that they might get used, under supervision to the feeling of responsibility that this brought before they went to take charge of Maternity Units in Government Hospitals. This has proved of immense value to the girls so much so that it has earned for them a reputation for reliability that is the best asset that the hospital has got to-day. In order to do this it became necessary to admit learners twice a year which is now the hospital's settled policy. At the end of 12 months training the pupils take a simple nursing examination, which entitles them to add a green belt to their uniform; they now start to learn to conduct deliveries, and to examine the cases in the Ante-Natal Clinic. Here the principle is to instil into them the detection of difficult cases, so that on their own clinics later, they may be able to send such women to the main hospital in plenty of time. On passing the first midwifery examination, they are promoted to more independent work, and at the end of a further 6 months, they take the government examination for Grade II registered Midwives.

These principles have been so satisfactory that the hospital has now a very long list of aspirants for training, and the girls on leaving are certain of employment.

At the end of 1946, the number of cases applying for admission had grown to such proportions that it was necessary to ask for more accommodation, and two wards were added of 15 beds each. The necessary increase in African Staff required that the small 8 bedded ward should be taken for a nurses' dormitory, resulting in 45 beds being available for cases. The number of births has steadily crept up until the present figure has been reached.

European Staff. It was decided in 1946 to increase the staff to Matron, 4 Sisters. This staff now works at the hospital as follows:—

Matron — charge duties, Sister Tutor.

Sisters — one in charge of each ward and one on night duty.

It has been exceedingly difficult to keep the staff up to its full strength which has meant that the Sisters have had a very hard time, getting night duty too frequently, and too much work on the day time shifts, with the large number of cases delivering and needing watching, the difficult work of guarding equipment etc. It has definitely been proved that, for the smooth running of the hospital, a full staff is essential.

General Work. It has been observed that the women are far more ready to come to hospital for their deliveries than at the beginning. When the Medical Officer first took over, it was a very frequent thing to get cases brought in that had delayed far too long in their homes, and only come in at the very last moment, when the child was already dead, and the mother in extremis. Craniotomies were quite frequently performed and practically always on a mother who was severely septic from the crude efforts that had been made to help her in the homes. Often women were permanently disabled by these well-meaning but misguided attempts. For the last two years only one such case has been brought to the hospital, all others having come in at the beginning of labour, having been already examined in the Clinic and the necessary treatment decided upon.

That the hospital has a very good name with the African is a matter for congratulation, and has been earned for it by the steady work of the Sisters and Matron keeping up the high standard of nursing care.

It is to be regretted however, that the buildings are so very unsatisfactory and inadequate, making it very difficult to conform to the requirements of modern obstetrics. The patients are still crowded, the nurses' accommodation is poor in the extreme, Matron's and Sisters quarters are unsatisfactory. A new building is absolutely necessary if the hospital is to carry on its work with any satisfaction.

Lady Grigg African Maternity Hospital — Pumwani

Statistics 1946 to 1950

	1946	1947	1948	1949	1950
Total admission	1885	2210	2456	2622	2738
Births	1472	1751	2071	2081	2345
Still-births	105	115	138	156	163
Maternal Deaths	11	14	14	9	4
Infant Deaths	103	81	140	140	147
Operations (including forceps)	189	170	136	129	112
B.B.A.	35	58	78	107	108
Abnormal Pres.	93	94	134	183	224
Ante-Natal Clinics :					
Number held	200	—	201	203	203
Attendances	4384	8256	10877	11117	11336
Post-Natal Clinics :					
Number held	49	—	48	47	48
Attendances	183	749	582	652	719

No. in Hospital on the first day of the year ... 40

Admissions :

 Resident 1683

 Non-Resident 1055

 Total 2738

Discharges 2734

No. in Hospital on the last day of the year ... 44

Patient days 13,829 Babies Days 11,523

Motherless Babies Days 569.

Admission by Districts.

Nairobi	1683	Kabete	459	Kikuyu	30	Limuru	56	Juja	2
Kiambu	91	Uplands	14	Ngong	52	Thika	41	Karen	1
Kangudu	1	Mombasa	1	Njoro	1	Kijabe	2	Mangu	29
Magadi	1	Ruaraka	35	Ruiru	29	Langata	33	Kahawa	15
Machakos	10	Nyeri	8	Athi River	20	Mbakasi	1	Karatina	1
Makindu	1	Tumutumu	1	Sagana	1	Karura	3	Ndeya	1
Kinangop	1	Kerugoya	1	Dandora	15	Kajiado	3	Narok	1
Naivasha	6	Dagoretti	23	Konza	1	Nanyuki	1	Nakuru	2
Mbagathi	3	Kiu	2	Mitubiri	1	Forthall	56		

Admission by Tribes.

	Clinic	Direct	Total
Kikuyu	1,303	345	1,648
Luo	395	57	452
Other Tribes	535	103	638
Births	1,841	504	2,345
Still-births	118	45	163
Born before arrival	69	39	108
Malpresentations	166	58	224
Twins	34	14	48

Still Births cum Causes.

		Clinic	Direct	Total
Birth Injuries	...	8	5	13
Asphyxia	...	18	4	22
Macerated Foetus	...	36	13	49
Obstructed Labour	...	1	0	1
Monster	...	3	1	4
Prolapsed Cord	...	12	6	18
Maternal Malnutrition	...	1	0	1
Congenital Syphilis	...	15	3	18
Part Born on Arrival	...	1	0	1
Prematurity	...	1	4	5
Ante-Partum Haemorrhage	...	1	0	1
Placenta Praevia	...	3	0	3
Born before Arrival	...	2	1	3
Ruptured Uterus	...	2	1	3
Impacted Breech	...	2	0	2
Toxaemia	...	0	1	1
Hydramnios	...	1	0	1
Congenital Absence of Diaphragm	...	1	0	1
Knot in Cord	...	1	0	1
Hydrocephalus	...	3	2	5
Bicornuate Uterus	...	1	0	1
Cerebral Haemorrhage	...	1	2	3
Impacted Shoulder	...	2	2	4
Eclampsia	...	1	0	1
Delayed Labour	...	1	0	1
Total	...	118	45	163

Infant Deaths cum Causes.

		Clinic	Direct	Total
Prematurity	...	41	26	67
Atelectasis	...	7	0	7
Sepsis	...	1	0	1
Congenital Syphilis	...	24	10	34
Prenatal Native Treatment	...	1	0	1
Maternal Malnutrition	...	7	1	8
Cerebral Haemorrhage	...	8	1	9
Birth Injuries	...	1	1	2
Prolapsed Cord	...	1	0	1
Hydrops Foetalis	...	2	1	3
Eclampsia	...	1	0	1
Asphyxia	...	1	1	2
Malaria	...	1	0	1
Congenital Heart	...	1	0	1
Hydramnios	...	0	2	2
Delayed Labour	...	1	0	1
Spina Bifida	...	1	0	1
Hydrocephalus	...	3	0	3
Monster	...	0	1	1
Haemorrhagic Disease	...	1	0	1
Total	...	103	44	147

Operations.

			Clinic	Direct	Total
Caesars	...	...	34	1	35
Forceps	...	...	11	13	24
Curretage	...	...	6	3	9
Induction	...	...	7	0	7
Version	...	...	8	2	10
Perineorrhaphy	...	...	3	0	3
Manual Removal of Placenta	...	...	2	0	2
Incision of Abscess	...	...	0	1	1
Ectopic Gestation	...	...	1	0	1
Myomectomy	...	...	1	0	1
Evacuation of Uterus	...	...	1	1	2
Exploration	...	...	1	0	1
Decapitation	...	...	1	2	3
Cervical Repair	...	...	1	0	1
Craniotomy	...	...	2	3	5
Repair of Ruptured Uterus	...	...	2	1	3
Incision of Vaginal Stricture	...	...	1	0	1
Placenta Praevia (Willett's)	...	...	0	1	1
Dental Extraction	...	...	0	1	1
Excision of Vaginal Septum	...	...	1	0	1
Total	...	...	83	29	112

Clinics**Ante-Natal :**

No. held — 203.

New Cases — Resident	...	2143
" " — Non-Resident	...	2269
Repeats — Resident	...	3320
" — Non-Resident	...	3604

Total ... 11,336

Post-Natal :

No. held — 48.

Resident	...	482
Non-Resident	...	237

Total ... 719

Abnormals

Total Abnormal cases treated ... 490

Maternal Deaths :

Septicaemia	...	1
Pneumonia	...	1
Malaria and Eclampsia	...	1
Cerebral Malaria	...	1

SECTION 17

VENEREAL DISEASES

The total attendance for 1950, was 22,714, giving an average attendance of 90 per day for the whole year. This figure exceeds the average per day during 1949 by 2 per day. The percentage of consultations made by V.D. patients rose to 82% in 1950 from 73% in 1949.

Syphilis. The number of cases of syphilis — 1,161 — attending the Clinic during 1950 showed a decrease of 20% on the 1949 figure of 1,452.

The number of attendances of these cases was 10,455 a decrease of 22% on the 1950 figure of 13,432.

This decline in the attendance is attributable to the policy of charging those patients who do not qualify for free treatment. There is no such decline in the number of G.C. cases, or in their attendance. Cases of G.C. who do not qualify for free treatment are asked for a single payment for their single shot of penicillin. The payment amounts to 5/-, 10/- or 17/- in the case of a 1st, 2nd or 3rd attack of G.C.

Possibly a single payment for the treatment of syphilis might result in more patients with S.Y. coming for treatment, and more of them attending regularly for it. The suggestion is made, that 20/- might be charged for the treatment of acute syphilis, and 30/- for that of Latent Syphilis. Many of the women attending the Clinic tell us that they have already paid 5/- 10/- or 20/- for a single injection by "An African Friend". It would be very much appreciated by the staff of the Clinic if more of these cases could be treated. During 1950 only 44 women completed the course of treatment for syphilis, as compared with 80 women in 1949.

The average number of injections received by each syphilitic woman was 8. This average has been declining steadily since 1948. In that year the average per patient was 10.5 injections: in 1949 it was 9 per patient and in the year under review it was 8 per patient.

Since the end of November 1950, the list of patients to whom free treatment is allowed, by Council, has been increased to include pregnant women, referred by the African Antenatal Clinics and by the African Maternity Hospital Antenatal Clinic.

It is to be hoped that this will show an increased number of antenatal women coming for treatment, and an increase in the number of their visits to the Clinic.

Gonorrhoea. The large number of cases of Gonorrhoea — 1,620 — attending the Clinic in 1950, was an increase of 63% on the number attending in 1949. The latter number — 993 — was 74% more than the figure for 1948 (571). There is, therefore, a steadily increasing amount of gonorrhoea in the country.

The attendance by patients with gonorrhoea comprised 7,260 visits — an increase of 65% on the year before. The 1,620 cases of gonorrhoea received 1,342 injections of penicillin — hence 83% of these patients received treatment.

Ayaks.—During this year the Central Registration Office decided that they would not register Ayaks as fit to be employed unless they had been examined by the V.D. Clinic and certificates supplied by them, signed by the Medical Officer in Charge.

This has resulted in a big increase in the number of Ayaks attending the Clinic for examination — 222 in 1950 compared with 49 in 1949 — a percentage increase of 373.

Of the 222 who attended, 52% were infected (as against 43% on the 49 examined in 1949).

As Ayaks were assumed to object to being seen visiting the V.D. Clinic an additional Clinic was made available to them on the 1st Monday of each month at Pumwani Child Welfare Clinic, beginning on Monday September 4th.

During the four months up to the end of the year, the number of Ayaks who attended at both Centres and the numbers found to be infected at each, were as follows :—

	Attended	Numbers Infected.	
At the V.D. Clinic	46	23)
Pumwani Child Welfare Clinic ...	23	11	) 50%

It would, therefore, appear that Ayaks have no objection to attending the V.D. Clinic for examination, and as 50% of them are suffering from V.D. as shown above, they have to attend that Centre for treatment in any case.

Pregnant Women. The number examined in 1950 — 1683 — was 10% more than in 1949 : but 64% of them were found to be suffering from V.D. as against 40% in 1949. There was therefore, a 24% increase of V.D. among the pregnant women seen during 1950.

Pregnant women not only formed 41% of all cases seen at the V.D. Clinic in 1950, but they provided 39% of all cases of V.D.

The revised policy of the Council of allowing these women (if referred by the Antenatal Clinics at the African Maternity Hospital and the African Maternity & Child Welfare Centres) to be treated free, is very much welcomed.

1. Attendances :

Number of consultations	21,658
Number of afternoon treatments	1,056
Total attendance for the year	22,714
Number of Clinics 251; average per clinic 90.	
Increase on 1949 average attendance, 2 per clinic.	

2. Consultations :

				Increase or decrease on 1949
By patients with Syphilis	...	...	10,455	— 22%
By patients with Gonorrhoea	...	...	7,260	+ 65%
By patients with Yaws	...	...	40	— 47%
By patients with Lymphogranuloma	...		2	
Total by patients with V.D.	...	...	17,757	— 0.7%
By other patients	...	...	3,901	
Total consultations	...	...	21,658	— 3.0%

3. Analysis of Cases :

			1950	1949	Increase or decrease on 1949
Primary syphilis	...	...	88	163	
Secondary syphilis	...		463	565	
Total acute syphilis	...	...	551	728	— 24%
Latent syphilis	...	...	442	531	
Tertiary syphilis	...	...	1	5	
Congenital syphilis	...		167	188	
Total syphilis	...	...	1161	1452	— 20%
Gonorrhoea	...	...	1620	993	+ 63%
Yaws	...	...	1	12	
Total V.D.	...	...	2782	2458	+ 13%
Other cases	...	...	1240	1746	
Total Cases	...	...	4022	4204	— 4%

The actual number of cases dealt with each month was as follows :—

January	...	771	February	...	756	March	...	834
April	...	731	May	...	711	June	...	819
July	...	765	August	...	683	September	...	608
October	...	631	November	...	707	December	...	707

The average number of cases dealt with per month was 725, which shows a decrease on the 1949 monthly average of 769.

4. Injections Given :

Intravenous	...	...	...	...	...	5,025)
Intramuscular (Bismuth & Acetylarsan)	...	...	...	...	...	4,640	) 9,665
Penicillin	...	...	...	...	...	1,343)
						<hr/>	
Total						11,008	<hr/>

The number of injections given to syphilitic patients in 1950 was 9,665. This works out at an average of 8 injections per patient.

5. Specimens Taken for Laboratory Tests :

(a) Specimens for Kahn test :	Positive.	Doubtful.	Negative.
5,608	1,523	740	3,343

(b) Smears for Gonococcal examination :

Smears from Urethra	7,282	Number positive	70
Smears from Cervix	7,125	" "	652
Smears from Vagina	144	" "	37
Smears from Eye	368	" "	49
		<hr/>	
Total Smears taken	14,919	Total positive	788
		<hr/>	

6. Home Visits to V.D. Patients :

The number of visits paid to these patients was 1,972.

The patient was contacted on 1,168 visits : and there were 498 return visits to the Clinic after the patient had been contacted; giving a percentage of 43% return visits.

7. Examination of Ayahs referred by their Employers or by The Central Registration Office :

The number referred for examination was	...	...	222
Those found to be negative were	...	...	107
Those found to be infected were	...	...	115 (52%)
Suffering from Syphilis	...	...	63
Suffering from Gonorrhoea	...	...	52
			<hr/>
Total V.D.			115
			<hr/>

8. Examination of Pregnant Women :

The number examined was	...	...	1,683
Those found to be negative were	...	...	601
Those found to be infected were	...	...	1,082 (64%)
Suffering from Syphilis	...	...	376
Suffering from Gonorrhoea	...	...	706
			<hr/>
Total V.D.			1,082
			<hr/>

SECTION 18

STAFF CLINIC

This Clinic was opened in November 1949 to treat illness and injuries among the African Employees of the Municipality (Approximate daily number employed is 2,700) in order to relieve the overcrowded General Dispensary, to provide a stricter check on minor illnesses, and quicker, more personal attention to injuries. Most Departments are agreed that a considerable saving of labour has resulted.

The following figures give an idea of the work carried out during the year :—

New Cases :	4,464	This is 13.8% of the total work strength.
Total attendances :	15,684	— of these 10,866 were found fit to continue work and 4,818 — approximately 30% were unfit.

The main Departments were represented as follows :—

Roads	...	...	...	1419	approx: 19.7% of total strength
Public Health	...	...	...	1036	" 12% " " "
Parks	...	...	...	325	" 14.2% " " "
Abattoir	...	...	...	174	" 11% " " "
Garage	...	...	...	174	" 11% " " "
Infec: Dis: Control	...	...	...	229	" 15% " " "
City Hall	...	...	...	149	"
Water	...	...	...	214	"
Engineering	...	...	...	120	"
Fire	...	...	...	53	"

Diseases and Injuries :

- Respiratory Diseases** head the list with 1236 cases — some 28% of the total. There were 5 proven cases of Phthisis, 1 Lung Abscess, 2 Empyemas, and 14 cases of Asthma. There were numerous cases of Lobar and Broncho Pneumonia, but with modern chemo-therapy it was possible to treat all but three at the Clinic.
- Wounds, Fractures, Burns, Sprains and Septic Conditions** come next with 1,102 cases. All but six could be dealt with on the spot. Minor operations done were 44; (23 under Intravenous, and 21 under local anaesthesia). 56 applications of Plaster of Paris were made.
- Tapeworms.** 289 cases. Bilharzia, Ancylostoma, Ascaris & Trichuris were got, but seldom.
- P.U.O.** 429 cases. Most of these were Clinical Malarias with negative blood slides.
- Malaria.** 154 cases with positive slides. All subtertian.

6. **Dysentery.** 105 cases. Clinical Bacterial. No Amoebae Histolytica found. Some 10 cases of Amoebic Hepatitis responded well to Emetine.

7. **Dental.** 84 cases. 78 Extractions were done.

8. **Eyes.** 97 cases. Only 2 of Trachoma.

18 cases of Gonorrhoea and 14 of Syphilis were treated and responded well to ambulatory treatment, and were able to continue with work all the time.

Three cases of Primary Carcinoma of Liver were found.

40 Cases (.9%) were evacuated to Hospital, approximately half to the Infectious Diseases Hospital for some infectious condition.

Laboratory Work :

All examinations except Blood Kahns were done in the City's Infectious Diseases Laboratory.

664 blood slides were done for Malaria with 154 positive results.

Stools, Urines, Sputa, and Smears were all examined.

The following Table gives by races the numbers of the various Inoculations & Vaccinations for the year 1950 :—

	Europeans	Asians	Africans	Total
Smallpox Vaccinations ...	3,390	7,375	1,502	12,267
Yellow Fever ...	3,338	7,469	1,732	12,539
T.A.B. ...	952	738	40,041	41,731
Cholera ...	49	479	4	532
Diphtheria ...	293*	416	17	726
Typhus ...	6	—	—	6
Plague ...	11	1**	66	78
Whooping Cough ...	16	—	—	16
Tetanus ...	2	—	2	4
Combined Whooping Cough and Diphtheria ...	70	—	—	70
Totals	8,127	16,478	43,364	67,969

**These were all for the Rodent Control Staff.

*Practically all the Asian Diphtheria inoculations were carried out at the various Indian Schools.

The figures for Smallpox and Yellow Fever vary little from those of 1948 and 1949, but there is a striking increase in the number of Africans seeking T.A.Bs. It is not that the African is becoming Typhoid conscious, but that the injection is popular as a cure for Malaria, Flu, Colds, Rheumatics, and is a good tonic. Assuming that a proportion of the 40,000 odd come from outside Nairobi, it is estimated that over 50% of Nairobi's African population received a degree of immunity against the Typhoids during the year.

A marked decline in the numbers seeking protective inoculation against Whooping Cough, and to a lesser extent against Diphtheria has occurred since April following the publication of reports suggesting a connection between these injections and the incidence of Acute Poliomyelitis.

The Medical Officer finds he has had to append his signature over 65,600 times on the various Certificates issued and renewed.

The Sister in charge personally gave over 50,000 injections.

Staff and Accommodation :

One trained Dresser does all the clerical work, all the dressings and giving of medicines and injections with occasional assistance during rush periods. A part-time Medical Officer sees the new cases and carries out the necessary operative procedures. An extra assistant had to be taken on to help with the increased Laboratory work.

All this work is carried out in one small room 15 feet by 12 feet, with a tiny waiting verandah. Drugs, dressings and equipment are supplied from the City Council's Dispensary Store.

Medical Officer in charge during 1950 — A. Cruickshank, M.B.

Dresser — George Gaita.

SECTION 19

BUILDINGS

1. African Housing :

- (a) **Bahati.** The first group of 62 blocks, with accommodation for 24 persons in each, started in 1949, was completed.

A further 51 blocks the same size, but all built in traditional construction were started and completed during the year.

- (b) **Gorofani.** The original scheme consisting of 17 2-storey blocks with accommodation for 48 persons in each, was completed, and an extension to the scheme consisting of a further 18 similar blocks was started and completed before the end of the year.

A new scheme consisting of a further 20 2-storey blocks (48 persons in each) and 20 pairs of 2-room family dwellings, with a total accommodation for 1200 persons has been planned to start in 1951.

- (c) **African-Built.** The initial group of plots for this scheme were pegged out and road and water services provided. Construction of an exhibition "type" house was nearing completion.

2. African Clinic :

A new African Child Welfare Clinic in Pumwani was started and practically completed by the end of the year.

Various minor works also were carried out and Council's property generally was maintained and repaired as necessary.

3. Asian Clinic :

The new clinic off Victoria Street for Asian Maternity and Child Welfare Services was completed as was also a replacement in permanent materials of the Juja Road Clinic.

4. African Maternity Hospital :

Tenders were received in 1950 for this new 72 bed Hospital and work on the scheme will start early in 1951.

SECTION 20

SCHEDULE OF STAFF

POST	NAME OF OFFICER.	Non-Established
		Established Temporary
Medical Officer of Health ...	A. T. G. THOMAS, M.D., B.S., D.P.H.	E
Dep. Med. Officer of Health.	L. S. ANDERSON, B.Sc., M.B., Ch.B., D.P.H. (Resigned July)	E
Assistant Medical Officer (Staff & Inoculations) ...	A. CRUICKSHANK, O.B.E., M.D., Ch.B.	T
Sen. Sanitary Inspector ...	Mr. R. C. Forster, M.B.E., Cert. R.S.I., & Meat. Cert. San. Sc.	E
Sanitary Inspectors : ...	Mr. D. Mackintosh, Cert. R.S.A.S.	E
	Mr. S. White, Cert. R.S.I.	E
	Mr. P. Cairns, Cert. R.S.I.	E
	Mr. A. Ramshaw, Cert. R.S.I. & Meat.	E
	Mr. H. T. Beechey, Cert. R.S.I. & Meat Dip. R.I.P.H.H. (Hons.)	E
	Mr. P.H. Burge, Cert.R.S.I. & Meat. Cert.San.Sc., Cer.Trop.Hy., A.M.Cert.I.S.E.	E
	Mr. R. D. Belsare Cert.R.S.I.(India), Cert. Trop. Hygiene.	E
	Mr. Mohd. Din, Cert. R.S.I.(India),	E
Afr. Sanitary Inspectors:	P. Pascal Ongalo, Cert.R.S.I. (E.A.)	E
	Joseph Tsonzaka, Cert.R.S.I. (E.A.)	E
Stenographer ...	Mrs. I. Symonds.	E
Clerk/Typist ...	Mrs. D. I. Butcher.	N.E.
Sister/Storekeeper ...	Mrs. E. M. Sullivan, S.R.N.	E
Cleansing Department :		
Cleansing Superintendent.	Mr. R. A. MacDonell, M.I.P.C.	E
Foreman ...	Mr. T. E. Davis.	E
	Mr. T. N. Pienaar.	E
	Mr. A. Savy.	E
	Mr. A. Rozaner.	E
	Mr. E. Esparon.	T
	Mr. H. Sullivan.	T
	Mr. P. Victorin.	T
	Mr. Kuldip Singh.	T
Clerk ...	Miss D. Ewing. (Relief—Mrs. Dodd—T.)	E
Disposals Overseer ...	L. H. Clough.	E

POST	NAME OF OFFICER.	Non-Established Established Temporary
European Child Welfare :		
Matron	Miss I. Watson.	E
Assistants	Mrs. Hill.	T
	Mrs. Salmon.	T
	Mrs. Pelling.	T
	Mrs. Simpson.	T
African Child Welfare :		
Medical Officer	Dr. Henry, M.B.E., M.B. Ch.B. (Edin.). D.T.M.& H.	E
Sup. Health Visitors ...	Mrs. E. T. Dugmore, S.R.N., S.C.M.	E
Health Visitors : ...	Mrs. A. G. Gibb, S.C.M.	E
	Mrs. B. Brooks, S.R.N., S.C.M.	E
	Mrs. Davis, S.R.N., S.C.M., H.V.Cert.	E
	Mrs. Pickwell, S.R.N., S.C.M.	E
	Mrs. M. K. Adams, S.R.N., S.C.M., H.V.Cert.	E
Afr. Health Visitors ...	Marion Wanzila.	E
Indian Maternity and Child Welfare :		
Medical Officer	Dr. Gaffikin, M.B., Ch.B. (St. Andrews)	E
Sup. Health Visitors ...	Miss Benjamin, Grade I (Delhi).	E
Health Visitors : ...	Mrs. Chadda, H.V. (Lahore).	E
	Miss de Mello, S.R.N., S.C.M.	E
	Mrs. Pachecos, S.R.N. (Karachi).	E
	Mrs. Nayer.	E
	Miss Ramzan.	E
	Miss N. Kaur.	T
	Miss M. K. B. Singh.	T
	Miss I. K. G. Singh.	T
	Miss R. R. Varma.	T
	Miss Jaswant Singh.	T
	Miss A. Rashid.	T
	Mrs. Chudgar.	T
V.D. Clinic :		
Medical Officer	Dr. L. O. Hunter, M.R.C.S., (Eng.) L.R.C.P. (Lond.)	E
European Sister : ...	Mrs. Graham, S.R.N.	E
	Mrs. M. Taylor, S.R.N.	T
	Mrs. Hook, S.R.N.	E
	Miss C. S. Finlayson, S.R.N.	

POST	NAME OF OFFICER.	Non-Established Established Temporary
Lady Grigg Maternity Hospital :		
Med. Superintendent	... Dr. M. A. Williams (Resigned Dec. 1950) M.R.C.S., L.R.C.P.	E
Matron	... Miss Foord, S.R.N., S.C.M.	E
European Sisters :	... Mrs. Klein, S.R.N., S.C.M. (left Dec. 1950)	E
	Miss Pippett, S.R.N., S.C.M.	E
	Mrs. Harper, S.R.N., S.C.M.	E
	Miss J. P. Koppert, S.R.N.	E
Welfare Worker	... Mrs. Spencer.	T
Locum for Matron	... Mrs. M. E. Sidney, S.R.N., S.C.M.	T
Infectious Diseases :		
Entomological Officer	... G. R. Van Someren, F.R.E.S. (Resigned Dec.)	E
Clerk/Typist	... Mrs. Lawson. (Resigned). Mrs. Dodd, S.R.N.	
Mosquito Inspector :	... J. Morrill.	E
	A. Karmali.	E
	M. I. Shah.	E
	E. H. Aspinall.	N.E.
	E. P. Swan.	E
	Mohd Y. Amedi.	T
Market :		
Market Master	... R. D. Sharp.	E
Abattoir :		
Superintendent	... S. Sprague.	E
	J. B. Mortimer.	E
	Aslam Butt.	
	Mohd. Asghar Khan.	
	Mohd Saeed Dar.	
	African Staff ... 126	
By-Products :		
	... H. S. McGillivray.	E
	Miraj Din.	
	African Staff ... 31	

PUBLIC SERVICES
FINANCIAL
SURVEY

PUBLIC HEALTH

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Public Health Administration :						
Salaries	11,855	1	11			
Superannuation Fund Contributions	846	10	73			
Provident Fund Contributions	223	15	55			
Wages, etc. African Staff	822	11	16			
Uniforms	34	17	60			
Locomotion	476	7	12			
Medical Attention — Staff	58	4	75			
Rent of Offices	1,262	3	00			
Printing, Stationery and Advertising	372	17	77			
Telephones	81	8	54			
Postages	152	0	58			
Passages — New appointments	209	1	17			
Food and Drug Analysis	108	6	36			
Sanitary Equipment	6	13	13			
Public Health Propaganda	278	10	61			
Demolition of Buildings	235	1	37			
Unserviceable medical stores written off	63	13	24			
Administration Expenses	1,000	0	00			
	18,087	3	79			
Less charged to Cleansing Dept. Clinic & Inoculation Centre	500	0	00	17,587	3	79
Infectious Diseases Prevention :						
Salaries	4,569	10	22			
Superannuation Fund Contributions	71	12	17			
Provident Fund Contributions	173	12	77			
Wages & Uniforms etc. African Staff	6,402	7	52			
Locomotion	387	6	46			
Medical Attention — Staff	54	17	70			
Transport	1,827	19	91			
Stores	2,614	12	94			
Laboratory Equipment	27	12	75			
Printing, Stationery, Advertising & Telephone	544	1	92			
Rent of Store	25	0	00			
Hospital Fees	2,530	16	95			
Notification Fees	75	14	00			
Miscellaneous	47	1	40	19,352	6	71

 36,939 10 50

SERVICES

INCOME

	£	s.	cts.	£	s.	cts.
Public Health Administration :						
Government Grant towards Health Services	29,000	0	00			
Food & Drug Analysis Fees	55	8	00	29,055	8	00

Infectious Diseases Prevention :

Vermin Destruction	309	11	12			
Fumigation	503	13	11			
Malaria Control	428	2	85	1,241	7	08

30,296 15 08

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought/Forward				36,939	10	50
Staff Clinic & Inoculation Centre :						
Salaries	1,215	0	00			
Superannuation Fund Contributions ...	35	12	50			
Wages etc. African Staff	305	2	50			
Medical Stores	115	9	77			
Rent of Offices	150	0	00			
Administration Expenses	100	0	00	1,921	4	77
Venereal Diseases Treatment :						
Salaries	2,500	14	13			
Superannuation Fund Contributions ...	17	0	40			
Provident Fund Contributions	127	2	00			
Wages etc. African Staff	523	17	06			
Uniforms	36	0	75			
Medical Attention — Staff	6	6	20			
Maintenance of Buildings	144	9	83			
Medical Stores	700	6	35			
Water, Conservancy & Electricity	19	15	72			
Printing, Stationery & Advertising	48	18	55			
Telephones	21	13	22			
Miscellaneous	2	7	25	4,148	11	46
Maternity & Child Welfare :						
Parklands Day Nursery —						
Salaries	1,540	11	48			
Superannuation Fund Contributions ...	38	8	60			
Provident Fund Contributions	2	14	13			
Wages, etc. African Staff	167	11	17			
Uniforms	15	15	14			
Provisions	568	5	29			
Maintenance of Buildings	102	17	21			
Maintenance of Equipment	115	9	81			
Electricity & Fuel	65	5	81			
Water & Conservancy	25	4	36			
Rates	126	0	00			
Insurance	5	14	35			
Printing, Stationery & Telephone ...	20	0	42			
Miscellaneous	27	0	15			
Renewals Reserve Contribution	75	0	00			
Loan Charges	253	14	18			
	3,149	12	10			
Transfer to Reserve Account	47	2	50	3,196	14	60
Carried/Forward				46,206	1	33

INCOME

			£	s.	cts.	£	s.	cts.
	Brought/Forward	...				30,296	15	08
Staff Clinic & Inoculation Centre :								
	Government Contribution	...	900	0	00			
	Vaccination & Inoculation Fees	...	45	13	50	945	13	50
Venereal Diseases Treatment :								
	Fees	...				264	15	50
Maternity & Child Welfare :								
	Parklands Day Nursery —							
	Fees	...				3,196	14	60
	Carried/Forward	...				34,703	18	68

EXPENDITURE

		£	s.	cts.		£	s.	cts.
	Brought/Forward				...	46,206	1	33
Maternity & Child Welfare — (Continued).								
Salaries	... ..	150	0	00				
Medical Stores	... ..	55	14	47				
Miscellaneous	... ..	2	12	50				
Loan Charges	... ..	50	00	00		258	6	97
Asian Child Welfare Clinics —								
Salaries	... ..	3,312	3	13				
Superannuation Fund Contributions	... ..	97	1	79				
Provident Fund Contributions	... ..	127	6	00				
Wages etc. African Staff	... ..	174	19	22				
Uniforms	... ..	41	4	59				
Locomotion and Transport	... ..	445	17	75				
Medical Attention — Staff	... ..	3	0	35				
Maintenance of Buildings	... ..	110	12	04				
Maintenance of Furniture & Equipment	... ..	40	17	68				
Medical Stores	... ..	266	10	89				
Cleansing Materials	... ..	17	6	16				
Water & Conservancy	... ..	32	5	90				
Rates	... ..	101	5	00				
Insurance	... ..	1	12	62				
Printing, Stationery & Advertising	... ..	45	12	53				
Midwives and Health Visitors Training	... ..	21	2	95				
Miscellaneous	... ..	10	8	90				
Loan Charges	... ..	359	18	11		5,209	5	61
Carried/Forward								
	...					51,673	13	91

INCOME

	£	s. cts.	£	s. cts.
Brought/Forward			34,703	18 68
Maternity & Child Welfare — (Continued).				

Asian Child Welfare Clinics —

Sundry Income	6	12	00	
Training Fees (Health Visitors)	26	11	00	33 3 00
	<hr/>			

Carried/Forward

34,737 1 68

EXPENDITURE

	£	s.	cts.	£	s.	cts.
Brought/Forward				51,673	13	91
Maternity & Child Welfare — (Continued).						
African Child Welfare Clinics —						
Salaries	4,856	4	60			
Provident Fund Contributions	247	15	83			
Wages etc. African Staff	1,025	5	22			
Uniforms	127	0	79			
Locomotion and Transport	453	4	35			
Medical Attention — Staff	6	16	45			
Maintenance of Buildings	53	13	16			
Maintenance of Furniture & Equipment	152	17	38			
Medical Stores	807	19	67			
Cleansing Materials	48	4	30			
Electricity	240	16	80			
Water & Conservancy	48	4	68			
Rent	75	2	00			
Rates	24	0	00			
Insurance	1	12	38			
Printing, Stationery & Advertising & Telephones	166	5	32			
Christmas Parties	13	8	05			
Miscellaneous	6	15	75	8,355	6	73
African Maternity Hospital :						
Salaries	4,135	12	80			
Superannuation Fund Contributions	5	0	84			
Provident Fund Contributions	218	15	33			
Locum & Anaesthetist's Fees	71	4	00			
Wages etc. Nursing Staff	993	12	03			
Wages etc. Domestic Staff	533	13	92			
Uniforms	71	15	92			
Locomotion & Travelling	491	14	91			
Medical Attention — Staff	4	10	10			
Maintenance of Buildings & Furniture	264	7	14			
Linen and Cutlery	332	18	20			
Medical Stores	823	2	80			
Carried/Forward	7,946	7	99	60,029	0	64

INCOME

	£	s.	cts.	£	s.	cts.
Brought/Forward				34,737	1	68
Maternity & Child Welfare — (Continued).						
African Maternity & Child Welfare Clinics —						
Fees				282	12	75

African Maternity Hospital :

Fees	1,477	4	20			
Native Trust Fund	400	0	00			
Local Native Councils — Grants	85	0	00			
Trainees — Board	70	16	50	2,033	0	70

EXPENDITURE

					£	s. cts.	£	s. cts.
Brought/forward	...	...	...	...	7,946	7 99	60,029	0 64
African Maternity Hospital — (Continued)								
Cleaning Materials	...	...	...	...	179	6 03		
Electricity & Fuel	...	...	...	...	429	6 39		
Water & Conservancy	...	...	...	...	110	8 36		
Provisions	...	...	...	...	1,133	7 30		
Insurance	...	...	...	...	10	1 25		
Printing, Stationery & Telephone	...	...	...	...	157	1 49		
Miscellaneous	...	...	...	...	4	4 00		
Renewals Reserve Contribution	...	...	...	...	500	0 00		
Loan Charges —								
Principal	...	...	...	...	249	1 19		
Interest	...	...	...	...	106	19 78		
Loans Fund Expenses	...	...	...	...	6	8 20	10,832	11 98
Anti-Malarial Works :								
Construction of Drains —								
Kenton Drive	...	...	...	...	142	12 26		
Limuru Road	...	...	...	...	65	1 63		
Ngong (River) Part	...	...	...	...	63	14 15		
Baldwin Road	...	...	...	...	59	6 10		
Other Works	...	...	...	...	37	3 55	367	17 69
Maintenance of Drains —								
Wages etc. — Artizans	...	...	...	...	272	9 66		
Wages etc. African Staff	...	...	...	...	1,129	14 64		
Materials and Stores	...	...	...	...	228	3 39		
Transport	...	...	...	...	227	19 85		
Rates on Store	...	...	...	...	4	3 00	1,862	10 54
Funerals & Cemeteries :								
Staff Allowances	...	...	...	...	549	14 72		
Cost of Coffins	...	...	...	...	1,583	5 00		
Lettering Plates	...	...	...	...	32	8 00		
Miscellaneous	...	...	...	...	25	7 33		
Motor Hearse —								
Running Expenses	...	40	9	40				
Renewals Reserve Contribution	150	0	00		190	9 40		
							2,381	4 45
Carried/forward	...	...	...	...			75,473	5 30

INCOME

	£	s.	cts.	£	s.	cts.
Brought/forward				37,052	15	13
African Maternity Hospital — (Continued)						

Funerals & Cemeteries :						
Funeral Charges				3,456	19	50

Carried/forward				40,509	14	63
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EXPENDITURE

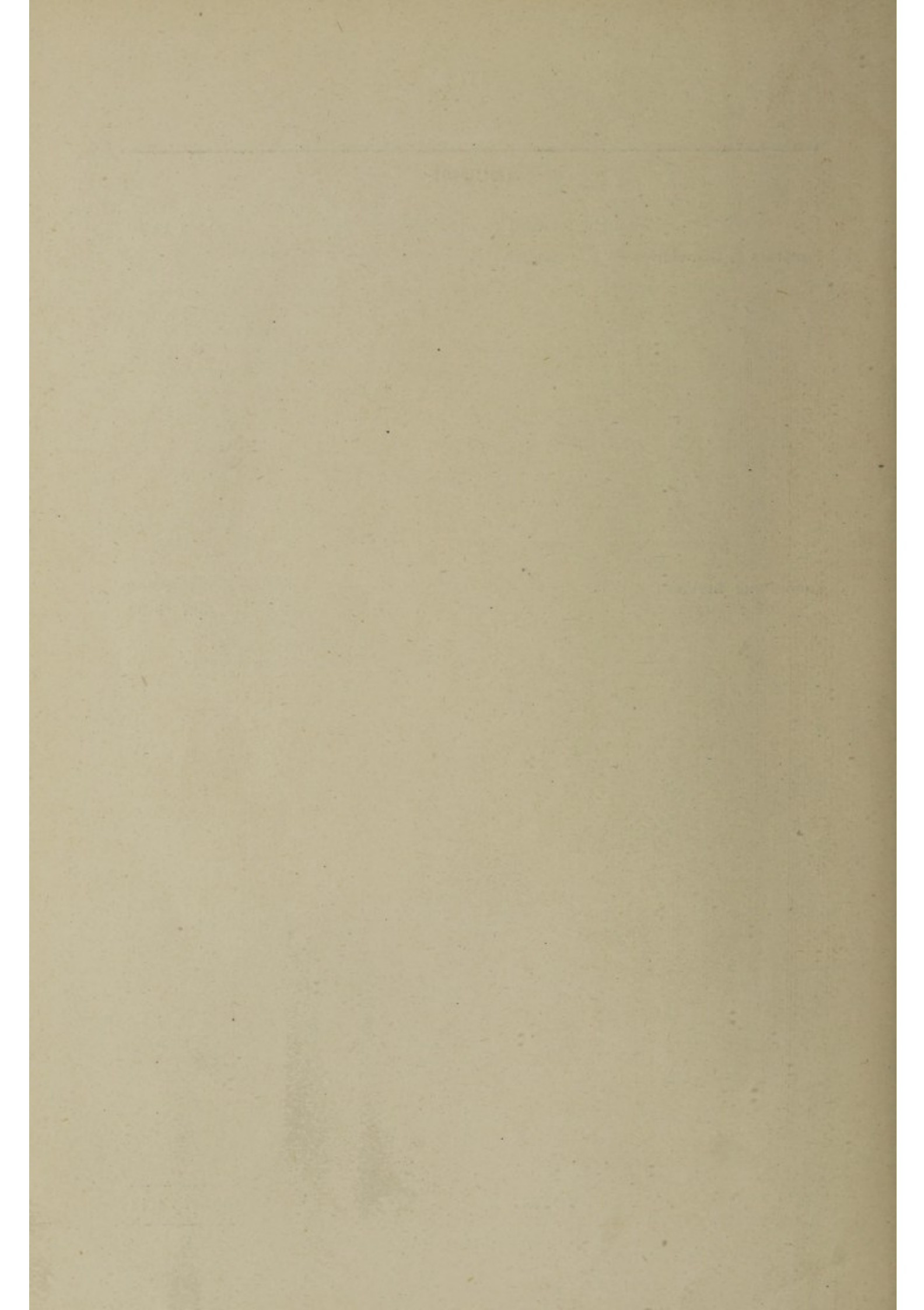
	£	s.	cts.	£	s.	cts.
Brought/forward				75,473	5	30
Funerals & Cemeteries — (Continued)						
Cemeteries —						
Wages, etc. Artizans & African Staff ...	435	0	33			
Uniforms	13	1	90			
Stores & Transport	13	11	50			
Water & Conservancy	16	17	57			
Paths — Forest Road Cemetery	7	5	33			
Administration Expenses	425	0	00			
Loan Charges —						
Principal			13 59			
Interest			12 15 08			
Loans Fund Expenses			19 94	14	8	61
					925	5 24
Mortuary :						
Maintenance					12	3 34
Ambulance Service :						
Wages — Driver					70	10 19
Motor Ambulance —						
Running Expenses	74	6	86			
Renewals Reserve Contribution ...	100	0	00		174	6 86
TOTAL						
					76,655	10 93

INCOME

		£	s.	cts.	£	s.	cts.
Brought/forward	...				40,509	14	63
Funerals & Cemeteries — (Continued)							

Ambulance Service :							
Hire Charges	327	9 30

TOTAL				<u>40,837</u>	<u>4 13</u>
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