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

Nairobi Municipality
Kenya.

FIFTH
ANNUAL REPORT
OF THE
Medical Officer of Health

1933

E. A. Standard, Ltd.

Nairobi Municipality
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FIFTH

ANNUAL REPORT

OF THE

Medical Officer of Health

1933

Contents.

Municipal Offices,
Nairobi,
February 28th, 1934.

His Worship the Mayor and Councillors
of the Municipal Council of Nairobi.

Gentlemen,

I have the honour to present to you herewith my annual report on the sanitary circumstances, sanitary administration, vital statistics and other matters of a health nature, of the Municipality of Nairobi for the year 1933, as required by " The Local Government (Municipalities) Ordinance, 1928," " The Medical Officers of Health Rules, 1929," Sec. 2 (12)d.

1. GENERAL.

The Local Government (Municipalities) Ordinance came into force as from 1929, thus this is the fifth year that the Municipal Council of Nairobi has been the local public health authority for Nairobi.

For the past two years, the personnel of the public health department has not included any officer seconded from Government.

The office of the public health department has been situated in the Rahimtulla Trust Building, Government Road, but it is to be hoped that in the near future it will be transferred to the new Municipal Offices which are to be built in the City Square.

Owing to overseas leave, sickness and non-filling of a vacant post, the inspectorial staff of the health department only worked for 39½ working months as against a normal total of 72. One new sanitary inspector was appointed to replace one who resigned last year.

The annual expenditure of the department compared favourably with former years.

The estimated population of the Municipality shows a decrease of almost 12 per cent. compared with the estimated population for the previous year, the decrease was shared by all communities, the greatest being among natives.

1933 had the second lowest rainfall for the 37 years for which records are available, the average monthly rainfall being only a little over one half of the average for 27 years.

The average barometric reading was slightly higher than the previous year, as were the mean wet and dry bulb readings and the mean maximum shade temperature, but the mean minimum temperature was lower and the relative humidity was 11 points below that of 1932.

Statistics show that the year under review has not been a healthy one, the death rate for all races was increased to 14 compared with 11 for the previous year, all the races sharing in the increase.

Although this increase is unfortunate, the graph which illustrates the death rates for the past 8 years shows a definite and satisfactory general decline in the rates for all of the races over the whole period.

The unusually dry conditions experienced throughout the year with the unavoidable sequelae of dust, pests and nuisances caused by lack of rain, has been without doubt the cause of increased sickness.

The infant mortality rate was somewhat increased, the main increase taking place among the Asiatic community. The proportion of infant deaths from the pneumonias was increased.

The number of infectious diseases notified, compared favourably with previous years, none of the diseases occurring in epidemic proportions.

Whooping cough, chickenpox, measles and mumps were very prevalent towards the second half of the year.

There was a large increase in the number of malaria cases notified, more especially in the middle portion of the year, in spite of the energetic anti-malarial measures adopted. It was apparent that more mosquitos were harbouring in grass, scrub, trees and other shelters, than in the previous year.

Since treatment by the chlorination plant, there has been a marked improvement in the quality of the water supply but it is sincerely to be hoped that in the near future the new Ruiru water scheme will be put into operation thus increasing the volume of the supply.

A large proportion of the sanitary improvements which have taken place in the town during recent years, has been due to the extension of the drainage system and the continuance of the policy of replacing the murrum surface of roads by macadam.

Of the 81¾ miles of roads within the Municipality taken over by the Council, 38¾ miles are macadam surfaced and 43 miles are murrum surfaced.

Marked progress has been made in the method of refuse collection in the central portion of the town by the adoption of motor vehicles to replace the former ox drawn carts.

Special attention is still being paid to the quality of meat passing through the abattoir, as well as to the condition of shops concerned with the sale and preparation of foodstuffs, although in regard to the latter, the the financial depression has precluded the carrying out of anything but the minimum requirements.

The sanitary conditions of the Municipality have been reviewed in some detail in this report.

A report on the Child Welfare and Ante-natal Clinics by the Medical Officer in charge, has been appended to this report. These services are still staffed and carried out by the Medical Department of the Government.

The hope expressed in previous reports, that these auxiliary health services would be taken over by the Council, even if only in part, has not been realised.

2. STAFF.

The establishment of the Public Health Department includes the following staff:—

1 Medical Officer of Health.
1 Chief Sanitary Inspector.
4 District Inspectors.
1 Meat and Food Inspector.
1 Sanitary Overseer.
1 Clerk.
Native Staff.

The Department has been understaffed to the extent of a chief sanitary inspector for the whole year and one sanitary inspector for eight months of the year, in addition, the granting of overseas leave depleted the staff by one inspector for six months and one inspector for four months, whilst sickness accounted for the absence of one inspector for two months and one inspector for half a month.

The application calling for the appointment of one sanitary inspector during 1932, resulted in the appointment of Mr. S. W. White from the Metropolitan Borough of Stoke Newington, London, who assumed duty on August 26th.

From the above it will be seen that 1933 was a bad working year for the Health Department, a fact which has unfortunately been necessarily reflected in the amount of work accomplished. Apart from the post of chief sanitary inspector being unfilled and thus losing 12 inspector months work, only 39½ inspector months work were performed out of a normal total of 60, or including the vacant post of chief sanitary inspector, only 39½ working months were performed out of a normal total of 72, a little over one half.

It certainly speaks well for the enthusiasm and activity of the staff that the amount of work recorded has been accomplished.

Under normal circumstances, owing to overseas leave, on an average one inspector would be absent on leave each year, this leaves three inspectors to deal with the 34 square miles of municipality, obviously this small staff is not sufficient to look after this large area efficiently, especially when the multiplicity of their duties is considered.

The details of the personnel of the staff employed during the year are as under:—

MEDICAL OFFICER OF HEALTH.

Dr. H. W. Tilling carried out the duties throughout the year.

CHIEF SANITARY INSPECTOR.

This post is still vacant, the duties have been carried out by Mr. R. C. Forster. The filling of this post would facilitate the working of the department to a considerable extent.

SANITARY INSPECTORS.

Mr. R. C. Forster left on overseas leave in May returning in November, during the six months of duty, he acted as Chief Sanitary Inspector, for the past two and a half years he has now acted in this capacity.

Mr. F. G. Ward carried out the duties during the year with the exception of a fortnight when he was suffering from a minor complaint.

Mr. D. Mackintosh carried out the duties during the year.

Mr. S. W. White who was newly appointed from England arrived the latter part of August and continued the duties throughout the remainder of the year.

MEAT AND FOOD INSPECTOR.

Mr. A. A. Watts returned from overseas leave and commenced his duties in May, during the latter two months of the year he was unfortunately absent owing to serious illness. During his absence the duties were carried out by the sanitary inspectors.

SANITARY OVERSEER.

Mr. T. Bagnall left on overseas leave in June returning after six months absence. During his leave, the duties were carried out by Mr. J. A. H. Bedbrook, late of the engineering department.

CLERK.

Miss B. Howarth resigned and relinquished her duties at the end of April, the duties since that date have been carried out by Miss A. Ritchie as part time services in conjunction with the Town Clerk's department.

NATIVE STAFF.

The number of boys employed on the office staff comprise 1 notice server and two messengers, a total of 3.

The number employed on outside work comprise 1 motor driver, 6 rat boys, 4 oiling boys and 1 boy to assist in food inspection, making a total of 12. At the beginning of the year 10 boys were employed on anti-malarial work, in May this was increased to 15 and in December the number was increased to 20, owing to the large amount of work that had to be done.

PERSONNEL OF HEALTH DEPARTMENT DURING, 1933.

MEDICAL OFFICER OF HEALTH.

	From	To
Dr. H. W. Tilling	1-1-33	31-12-33

CHIEF SANITARY INSPECTOR.

Vacancy.

SANITARY INSPECTORS.

Mr. R. C. Forster	1-1-33	31-12-33
Mr. F. G. Ward	1-1-33	31-12-33
Mr. D. Mackintosh	1-1-33	31-12-33
Mr. S. W. White	26-8-33	31-12-33

INSPECTOR OF MEAT AND FOOD.

Mr. A. A. Watts	1-1-33	31-12-33

SANITARY OVERSEER.

Mr. T. Bagnall	1-1-33	31-12-33

CLERKS.

Miss B. Howarth	1-1-33	30 -4-33
Miss A. Ritchie (part time)	1-5-33	31-12-33

NATIVE STAFF.

Notice server	1	
Messengers	2	
Motor driver	1	
Rat boys	6	
Oiling boys	4	
Food inspection	1	
Anti-malarial boys		
January to April	10	
May to November ...	15	
December	20	
Average	13	
		28

3. EXPENDITURE.

The expenditure of the Public Health Department for the year 1933 amounted to £6,144 of which the Government, by grants made on account of public health, contributed £3,072, leaving a similar amount to be borne by the Council.

Under the provisions of the Local Government (Municipalities) Ordinance, the Government contributes one half of the cost of the salaries of the medical officer of health and of qualified sanitary inspectors and also one half of the expenditure in connection with infectious diseases. In addition, there was in the past, a diminishing grant paid by the Government in regard to the balance of all monies expended by the Council on behalf of its public health services. However, this diminishing grant ceased at the end of 1931.

Details of the expenditure by the Public Health Department are given under:—

EXPENDITURE.

ADMINISTRATION.

	£	£
Salaries: M.O.H. and Sanitary Inspectors	3,506	
Office Clerk	251	
Boys' wages, etc.	36	
Travelling allowances	198	
Passages	330	
Rent and Telephone	172	
Printing, stationery, etc.	47	
Miscellaneous	38	
		4,578
INFECTIOUS DISEASES PREVENTION.		
Notification fees	42	
Hospital fees	552	
Overseer's salary	534	
Boys' wages, etc.	254	
Oil and stores	57	
Upkeep of lorry	95	
		1,534
FOOD AND DRUG INSPECTION.		
Food analysis	15	
Boys' wages, etc	17	32
Total		6,144
Less Government grants		3,072
Cost borne by the Council		£3,072

Comparison of the expenditure with previous years is as follows:—

Year	Expenditure	Paid by Government	Paid by Council
	£	£	£
1929 ...	7,948 ...	6,955 ...	993
1930 ...	6,993 ...	6,118 ...	875
1931 ...	5,978 ...	3,736 ...	2,242
1932 ...	5,967 ...	2,983 ...	2,984
1933 ...	6,144 ...	3,072 ...	3,072

It will be noted that, with the exception of 1933 when there was a slight increase over the previous year of £177, there has been a continued decrease in the amount expended since the Municipal Council became the local health authority. The small increase in expenditure for 1933 is more than accounted for by certain non-recurrent items which have been included namely, two return and two single passages and the salary of a substitute for one of the staff on overseas leave, but for these items which amount to more than £500, the total amount would have been considerably less than last year.

The total expenditure for 1933 was £1,804 or 22.7% less than the amount expended in 1929.

Since 1929, the Government contribution has fallen from £6,955 to £3,072 a decrease of £3,883 or 55%, whilst the Council contribution has increased from £993 to £3,072, a difference of £2,079 or 209%.

The boys engaged on anti-malarial work, although working under the supervision of the public health department, are on the pay roll of the engineering department.

4. GEOGRAPHICAL.

Nairobi, the capital of Kenya, is situated in the highlands about 250 miles from the coast and is 330 miles by rail from Mombasa and 257 miles by rail from Kisumu on Lake Victoria.

The geographical position is:—
Latitude 1° 16′ 43″ South.
Longitude 36° 50′ East.

HEIGHT ABOVE SEA LEVEL:—From 5,452 to 5,700 feet.

AREA OF MUNICIPALITY:—22,230 acres or approximately 34¾ square miles.

5. METEOROLOGICAL.

Month	Barometer Mbs. corrected	Dry Bulb Mean	Dry Bulb Ext. Max	Dry Bulb Ext. Min	Wet Bulb Mean	Wet Bulb Ext. Max.	Wet Bulb Ext. Min.	Relative Humidity Mean	Shade Temperature Maximum Mean	Shade Temperature Maximum Ext.	Shade Temperature Minimum Mean	Shade Temperature Minimum Ext.
January	828.9	67.7	76	60	61.4	65	58	69	73.4	79	55.3	50
February	829.7	71.9	82	62	60.3	63	55	51	79.2	85	54.5	51
March ...	829.9	73.9	83	64	60.6	67	55	46	81.8	85	55.7	49
April ...	829.2	73.3	84	63	61.3	64	58	50	80.8	84	57.6	50
May ...	834.1	70.1	81	58	60.8	68	55	57	77.8	84	55.8	47
June ...	835.8	68.6	79	59	58.1	68	54	52	76.6	80	51.6	45
July ...	838.4	63.6	76	54	56.0	59	53	62	71.0	77	53.7	49
August ...	835.0	63.9	78	55	56.3	65	49	62	72.0	81	51.3	42
September	836.7	66.1	78	53	56.5	60	53	55	73.6	80	53.6	44
October	833.5	68.9	81	58	58.4	63	54	54	77.1	84	54.8	47
November	832.8	67.5	75	60	59.7	63	57	62	74.0	80	56.6	53
December	830.2	66.7	74	60	60.4	64	57	70	73.0	78	55.7	48
Annual ...	832.8	68.5	84	53	59.1	68	49	57	75.8	85	54.6	42
1932 ...	823.0	67.5	82	54	60.0	62	50	68	74	84	55	45

Barometer readings (9 a.m.) and thermometer readings (9 a.m. and 4 p.m.) from Government Laboratories 5,680 feet.

6. RAINFALL.

Month	Rainfall 1933 In.	Rainfall Average 27 years	Days of Rain 1933 days	Days of Rain Average 26 years
January	5.06	1.77	15	5.4
February	0.00	2.07	0	4.8
March	0.98	4.77	4	10.0
April	1.36	8.42	8	17.5
May	2.20	5.23	12	15.3
June	0.78	1.47	3	7.7
July	0.82	0.68	6	5.3
August	1.79	1.02	10	6.3
September	0.12	1.19	5	6.0
October	3.05	2.16	10	7.6
November	3.47	4.86	16	14.6
December	3.05	2.77	11	10.3
Total	22.68	36.41	100	111.1

Rainfall records from Hill Station 5,700 feet.

Very little rain fell in Nairobi during 1933, in fact the second lowest rainfall for the 37 years since records have been available, was reported, the lowest record being in 1921 when 18.49 inches fell.

The average monthly rainfall for the year was 1.89 inches, compared with the average over 27 years of 3.03 inches.

The average fall of rain per day of rain for 1933 was 0.226 inches compared with the average for 27 years of 0.325 inches.

The rainfall was distributed through the seasons of the year as follows:—

Season.	Inches.	27 years average.
Short dry season (January-February)	5.06	3.84
Long rains (March-April-May)	4.54	18.42
Long dry season (June to September)	3.51	4.36
Short rains (October-November-December)	9.57	9.79
Annual	22.68	36.41

Taking the rainfall by seasons, it will be noted that the main difference between the actual rainfall and the average occurred during the long rains when there was a deficiency of 75%, the short rains were almost normal with a deficiency of only 2%, the long dry season was deficient by about 20% but the short dry season had over 30% more rainfall than the average.

The long rains had the lowest rainfall for at least 27 years, the next lowest being in 1909 when 6.47 inches fell and after that 1921 with 8.24 inches.

The short rains were only slightly below the average, but this is the first year that this season has been below the average since 1927 when the series of 4 years, 1924, 1925, 1926 and 1927 were all below the average.

January with 5.06 inches constitutes a second highest record for that month for 27 years, the highest being in 1930 when 5.76 inches fell.

No rain fell in February, similarly in 1929, 1914, 1910 and 1909 no rain fell during this month.

March with 0.98 inches is the third lowest rainfall recorded for this month, the lowest being in 1909 with 0.18 inches and the second lowest 1921 with 0.72 inches.

April with 1.36 inches had the lowest recorded rainfall for 27 years, the next lowest being in 1925 with 3.04 inches.

May with 2.20 inches had the second lowest recorded rainfall, the lowest being in 1909 with 0.78 inches.

June had the low rainfall of 0.78 inches, only in 10 instances has under 1 inch been recorded during this month.

July the average dryest month of the year had a rainfall of 0.82 inches which was slightly over the average of 0.68.

August the second average dryest month of the year with 1.79 inches was slightly over the average of 1.02.

September with 0.12 inches was well below the average of 1.19. The rainfall for this month is somewhat erratic and has been 17 times below the average during 27 years.

October with 3.05 inches was well above the average of 2.16, only on 5 occasions during 27 years has the rainfall of 3.05 inches been exceeded during this month.

November, the month with the fourth highest average rainfall, had 3.47 inches which was below the average of 4.86, only on 8 occasions has this month recorded so low a rainfall.

December with 3.05 inches was well above the average of 2.77, only 9 times has the rainfall during 27 years for this month exceeded this total.

The longest period during the year without rain being recorded was 36 days from January 29 to March 5.

ANNUAL RAINFALL.

Year	Inches	Year	Inches	Year	Inches.
1897	27.5	1910	25.64	1923	56.22
1898	28.1	1911	41.49	1924	26.72
1899	27.5	1912	56.01	1925	27.83
1900	44.3	1913	31.04	1926	33.25
1901	40.7	1914	42.18	1927	24.86
1902	32.9	1915	28.88	1928	28.91
1903	40.7	1916	43.59	1929	36.50
1904	26.9	1917	51.44	1930	58.88
1905	59.3	1918	23.05	1931	39.58
1906	46.7	1919	38.74	1932	39.85
1907	41.98	1920	51.19	1933	22.68
1908	27.90	1921	18.49		
1909	29.02	1922	37.28		

Records for the years 1897 to 1906 inclusive have been calculated from early figures from the Railway Administration and the Public Works Department and are relatively accurate only.

7. POPULATION.

The population of the Municipality of Nairobi as at mid year 1933 was estimated at:—

Europeans	... ...	5,146
Asiatics	... ...	13,363
Natives	... ...	23,176
Total	...	41,685

These figures show a decrease of 11.9% for the total population compared with the estimated population at the mid-year 1932.

It is noted that all the races show a decrease, the European of 6.4%, the Asiatic of 11.5%, the Native of 13.4%.

The estimated mid-year population 1932 was:—

Europeans	... ...	5.500
Asiatics	... ...	15,100
Natives	... ...	26,765
Total	...	47,365

8. MARRIAGES.

The following marriages were celebrated in Nairobi during 1933.

British	... ...	96
German	... ...	1
Greek	... ...	1
Goan	... ...	4
Seychellois	... ...	2
Native	... ...	7
Total	...	111

These figures are not corrected for persons habitually resident in Nairobi.

9. BIRTHS.

The following particulars in respect to births registered in Nairobi have been supplied by the Registrar of Births and Deaths.

BIRTHS REGISTERED DURING 1933.

	Resident			Non-Resident			Total
	M.	F.	Total	M.	F.	Total	births.
British	51	39	90	21	15	36	126
South African	—	—	—	—	1	1	1
Dutch	1	—	1	—	—	—	1
French	1	1	2	—	1	1	3
Italian	—	1	1	1	1	2	3
Swedish	1	—	1	—	1	1	2
Austrian	1	—	1	—	—	—	1
Portuguese	—	1	1	—	—	—	1
Indian	87	38	125	3	1	4	129
Goan	17	16	33	1	—	1	34
Eurasian	—	1	1	—	—	—	1
Seychellois	3	9	12	—	1	1	13
Mauritian	3	1	4	—	—	—	4
Syrian	1	1	2	—	—	—	2
Total	166	108	274	26	21	47	321

The above statistics are not of sufficient accuracy to be able to state any birth or infant mortality rate as " The Births and Deaths Registration Ordinance, 1928 " under which the registrations are made is made ineffective by the fact that no rules have yet been promulgated under section 27 of the ordinance. Apart from no rules of procedure being in existence, the absence of any rule laying down the time within which the registration must be effected, renders the compulsory clause of little use.

Further, section 8 of the ordinance makes the registration of births compulsory only if one or both parents are of European, American or Asian descent or origin

Thus, until this ordinance is supplemented by the necessary rules and enforced, little reliance can be placed on the accuracy of any statistics obtained from this source.

In order to obtain reliable information regarding births occurring within the Municipality, the Municipal Council in June 1933 passed by-laws entitled "The Nairobi Municipality (Notification of Births) By-laws, 1933."

These by-laws lay down that every birth whether alive or dead occuring within the municipality shall be notified within 48 hours, no nationalities or races being exempt.

The statistics obtained from these notifications should be of sufficient accuracy to enable birth and infant mortality rates to be computed by the end of 1934.

The following table indicates the figures obtained from the notification of births under the by-law for the latter half of the year 1933 from July to December inclusive.

BIRTHS NOTIFIED FROM JULY TO DECEMBER 1933.

	Resident			Non-Resident			Total	Stillborn		
	M.	F.	Total	M.	F.	Total	Births	M.	F.	Total
English ...	8	10	18	14	2	16	34	—	—	—
Scottish ...	1	—	1	1	—	1	2	—	—	—
Irish ...	—	2	2	—	—	—	2	—	—	—
South African ...	3	—	3	—	—	—	3	—	—	—
Australian ...	—	1	1	—	—	—	1	—	—	—
Italian ...	—	1	1	—	—	—	1	—	—	—
Swedish ...	—	—	—	1	—	1	1	—	—	—
Danish ...	—	—	—	—	1	1	1	—	—	—
German ...	2	1	3	—	—	—	3	—	—	—
Indian ...	26	26	52	1	2	3	55	17	10	27
Goan ...	6	14	20	1	1	2	22	1	—	1
Seychellois ...	—	3	3	—	—	—	3	2	—	2
Native ...	65	53	118	23	14	37	155	4	4	8
Total ..	111	111	222	41	20	61	283	24	14	38

It is instructive to note that whereas there were no still-births out of the 48 European births notified there were 27 out of 55 or the large figure of 49.09% of the Indian births notified as being stillborn.

Eight out of 155 or 5.16% of the Native births were notified as stillborn.

As pointed out in previous reports, it is obvious that this important subject is not receiving the attention it should from the Indian communities.

10. DEATHS.

Unless otherwise stated, the following statistics refer to residents of Nairobi only but also include the prison population. The rates have been calculated according to the estimated mid-year population for 1933.

The death rate for all races for the year was 14.03 per thousand population as compared with 11.08 for the previous year.

The total number of deaths reported in Nairobi during the year was 744 equivalent to a crude death rate for all races of 17.84.

The number of deaths from all causes among persons stated to be normally resident in Nairobi was 585, equivalent to a recorded death rate for all the races of 14.03 per thousand persons.

Of the 585 deaths among residents, 379 were of males and 206 of females.

37 deaths occurred among Europeans, equivalent to a rate of 7.19 per thousand.

199 deaths occurred among Asiatics, equivalent to a rate of 14.89 per thousand.

349 deaths occurred among Natives and other races, equivalent to a rate of 15.05 per thousand.

DEATHS BY RACE AND SEX.

		White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Sudanese.	Arab.	Nubian.	Total.
Resident.	M.	27	98	10	232	9	1	—	2	—	379
	F.	10	84	7	93	5	4	—	1	2	206
Total		37	182	17	325	14	5	—	3	2	585
Non-Resident.	M.	19	5	1	74	—	1	—	1	—	101
	F.	4	1	—	52	—	—	1	—	—	58
Total		23	6	1	126	—	1	1	1	—	159
TOTAL		60	188	18	451	14	6	1	4	2	744

COMPARISON OF DEATH RATES FOR SEVEN YEARS.

Year.		Crude Rate.		Recorded Rate.
1927	...	21.66	...	18.90
1928	...	25.11	...	17.94
1929	...	17.91	...	13.77
1930	...	20.79	...	16.20
1931	...	16.21	...	13.78
1932	...	13.51	...	11.08
1933	...	17.84	...	14.03

COMPARISON OF DEATH RATES FOR RACES FOR TEN YEARS.

Race	1924*	1925*	1926	1927	1928	1929	1930	1931	1932	1933
European	18.4	10.3	13.5	13.8	12.8	8.4	11.8	4.7	5.6	7.1
Asiatic	16.0	16.1	30.3	29.2	23.3	17.0	20.7	14.3	13.5	14.8
Native	29.9	18.3	17.3	16.5	16.1	13.4	15.2	15.2	10.7	15.0
All races	22.9	16.6	20.5	18.9	17.9	13.7	16.2	13.7	11.0	14.0

* Crude rates.

AVERAGE OF DEATH RATES.

Race	10 years average 1924—1933.	5 years average 1924—1928.	5 years average 1929—1933.
European	10.6	13.7	7.5
Asiatic	19.5	22.9	16.0
Native	16.7	19.6	13.9
All races	16.5	19.3	13.7

The above tables illustrate the declining death rates for all races during the past ten years.

It will be noted that the European death rate during the past five years has declined 45% below that for the previous five years.

For a similar period the Asiatic death rate has declined by 30%, the Native death rate has declined by 29% and the death rate for all races has declined by 29%.

It will be noted that the European death rate for 1933 is below that of the average for the past 5 years to the extent of 0.4, the Asiatic rate shows a reduction to the extent of 1.2 whilst both the Native rate and the rate for all races show increases, the former to the extent of 1.1 and the latter to the extent of 0.3.

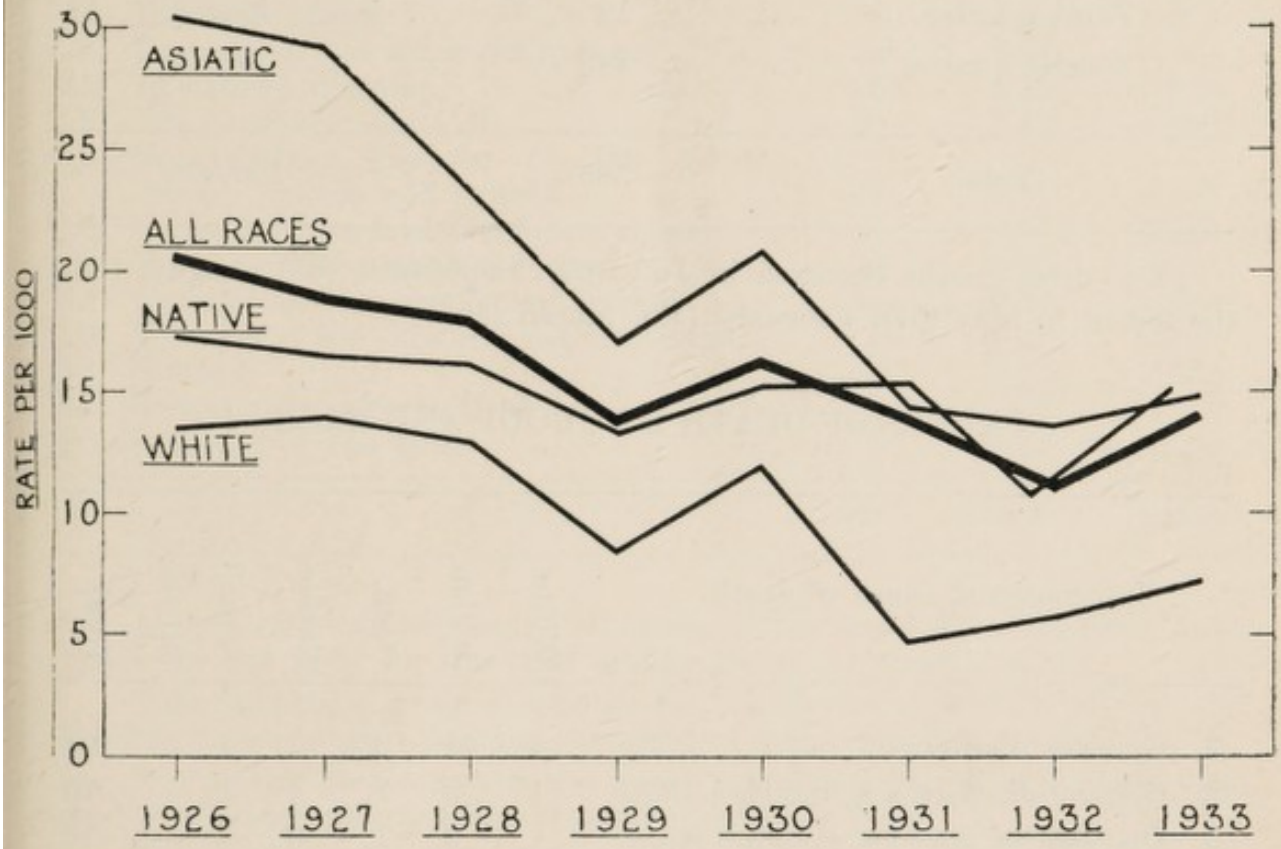
All the death rates for 1933 show appreciable increases over those for the previous year.

Race	1932.	1933.	Increase.
European	5.6	7.1	1.5
Asiatic	13.5	14.8	1.3
Native	10.7	15.0	4.4
All races	11.0	14.0	3.0

The following graph illustrates the declining death rates for the past eight years.

The satisfactory decline demonstrates the value of the strict application of public health measures and also indicates very strongly that there should be no slackening, but rather an increase in public health activities in order to assist the further decline of the rates.

DEATH RATES FOR THE RACES.



MONTHLY INCIDENCE OF DEATHS BY RACE.

Month.		White.	Indian.	Goan.	Native.	Somali.	Other.	Total.	% of Total.
January	...	2	13	2	22	1	1	41	7.01
February	...	—	14	—	23	1	—	38	6.50
March	...	2	9	1	25	1	2	40	6.84
April	...	9	9	1	25	4	—	48	8.20
May	...	3	10	1	20	1	2	37	6.32
June	...	4	16	4	17	—	2	43	7.35
July	...	4	27	—	35	1	—	67	11.45
August	...	6	20	2	35	—	—	63	10.77
September	...	3	22	3	34	2	1	65	11.11
October	...	2	15	2	21	1	1	42	7.18
November	...	1	12	1	36	—	—	50	8.55
December	...	1	15	—	32	2	1	51	8.72
Total	...	37	182	17	325	14	10	585	100.00

DEATHS BY QUARTERS.

	Number of Deaths.	Percentage of total.
First quarter ...	119	... 20.34%
Second quarter ...	128	... 21.88%
Third quarter ...	195	... 33.33%
Fourth quarter ...	143	... 24.45%
Total ...	585	... 100.00%

The most deaths occurred in July (67), September (65), August (63); the fewest in May (37), February (38), March (40).

CAUSES OF DEATH BY GROUP AND RACE.

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Others.	Total.
1. General diseases	4	21	3	72	4	—	104
2. General diseases not included above	4	6	1	4	1	—	16
3. Diseases of nervous system, etc....	1	5	1	9	—	—	16
4. Diseases of the circulatory system	3	5	3	3	—	2	16
5. Diseases of the respiratory system	7	64	1	143	7	1	223
6. Diseases of the digestive system ...	3	11	1	26	1	1	43
7. Non-venereal diseases of the genito-urinary system and annexa ...	2	3	1	10	—	1	17
8. The puerperal state	1	10	1	4	1	3	20
9. Disease of the skin and cellular tissue	—	2	—	3	—	—	5
10. Diseases of the bones	—	—	—	1	—	—	1
11. Congenital malformations ...	—	1	—	—	—	—	1
12. Diseases of early infancy ...	1	35	1	12	—	—	49
13. Old age	1	1	—	1	—	—	3
14. External causes	9	8	—	28	—	—	45
15. Ill defined diseases	1	10	4	9	—	2	26
Total	37	182	17	325	14	10	585

CAUSES OF DEATH BY GROUP WITH THE PERCENTAGE TO TOTAL AND RATE PER 1,000 POPULATION.

International cause of death.	No.	% of total.	Rate per 1,000 pop.
5. Diseases of the respiratory system ...	223	38.12	5.349
1. General diseases	104	17.78	2.495
12. Diseases of early infancy	49	8.38	1.175
14. External causes	45	7.69	1.079
6. Diseases of the digestive system ...	43	7.35	1.031
15. Ill defined diseases	26	4.44	0.624
8. The puerperal state	20	3.42	0.480
7. Non-venereal diseases of the genito-urinary system and annexa	17	2.91	0.408
2. General diseases not included above ...	16	2.74	0.384
3. Diseases of the nervous system ...	16	2.73	0.384
4. Diseases of the circulatory system ...	16	2.74	0.384
9. Diseases of the skin and cellular tissue ...	5	0.85	0.120
13. Old age	3	0.51	0.072
11. Congenital malformations	1	0.17	0.024
10. Diseases of the bones	1	0.17	0.024
Total	585	100.00	14.033

As was to be anticipated, " Diseases of the respiratory system " again heads the list as by far the most prolific group of causes of death.

This important group accounted for 223 deaths or 38.12% of the total deaths, the equivalent rate per thousand of population being 5.349.

During the previous year this group accounted for 34.86% of the total deaths, the rate per thousand of population being 3.863.

The deaths under this heading are:—

Pneumonia	159
Broncho-pneumonia ...	56
Bronchitis	5
Pleurisy	2
Pulmonary collapse ...	1

" General diseases " in Groups I and II are second in point of numbers and accounted for 120 deaths or 20.52% of the total deaths, the equivalent rate per thousand of population for these combined groups being 2.879.

During the previous year, these groups accounted for 23.63% of the total deaths with a rate per thousand of 2.618.

The deaths under these groups include:—

Malaria ...	24	Cerebro-spinal meningitis ...	4	Diphtheria ...	1
Tuberculosis ...	27	Syphilis ...	4	Influenza ...	1
Septicaemia ...	17	Typhoid fever ...	3	Trypanosomiasis .	1
Cancer ...	8	Rickets ...	3	Gonorrhoea ...	1
Measles ...	8	Anaemia ...	2	Diabetes ...	1
Dysentery ...	5	Blackwater fever	2	Tetany ...	1
Whooping cough	4	Yaws ...	2	Ruptured spleen.	1

Deaths from " Diseases of early infancy " totalled 49 or 8.38% of the total deaths, with an equivalent rate per thousand population of 1.175.

The figures for this group for the previous year were 9.52% of the total deaths and a rate of 1.055.

The causes of death are:—

Congenital debility	...	27
Prematurity	...	15
Septic umbilicus	...	6
Asphyxia neonatorum	...	1

The next largest group " External causes " accounted for 45 deaths or 7.69% of the total deaths with a rate per thousand population of 1.079.

As the prison population is included in these statistics, the first item mentioned below tends to make the total for this group unduly high.

In the previous year, this group accounted for 8.75% of the total deaths with a rate of 0.950.

The causes are:—

Judicial hanging	...	16	Fracture	... ...	3
Accidental injury	...	13	Violent death	...	2
Suicide ...	...	6	Electricity	...	1
Homicide ...	...	3	Starvation	...	1

" Diseases of the digestive system " is next with a total of 43 deaths or 7.35% of the total deaths, the rate per thousand of population being 1.031.

In 1932, this group was responsible for 7.81% of the total deaths, the rate being 0.866.

The individual causes are:—

Gastro-enteritis	...	23
Liver conditions	...	9
Intestinal obstruction	...	7
Appendicitis	...	3
Gastric ulcer	...	1

The group of " Ill defined diseases " accounts for 26 deaths or 4.44% of the total deaths making a rate per thousand population of 0.624.

These figures are very similar to those of last year when the group was responsible for 4.57% deaths with a rate of 0.507.

The deaths under this heading include:—

Heart failure	...	11
Unknown	...	10
Anaesthesia	...	3
Post operative shock	...	1
P.U.O.	...	1

" The puerperal state " was responsible for the total of 20 deaths or 3.42% of the total deaths with a rate of 0.480.

This is an appreciable increase for this group over the figures for last year when the group accounted for 2.29% of the total deaths with a rate of 0.253.

The diseases concerned are:—

Puerperal sepsis	...	8
Eclampsia	...	4
Haemorrhage	...	2
Prolonged labour	...	2
Pulmonary embolism	...	2
Ectopic gestation	...	1
Caesarean section	...	1

Nephritis was responsible for 13 out of the 17 deaths from " Non-venereal diseases of the genito-urinary system and annexa."

The total for this group was 17 or 2.91% of the total deaths, the rate being 0.408.

The remaining causes were, one death each from

Ovarian cyst.
Uterine haemorrhage.
Pyonephrosis.
Enlarged prostate.

Last year this group accounted for 1.71% of the total deaths with a rate of 0.190.

The two groups, " Diseases of the nervous system " and " Diseases of the circulatory system " each accounted for 16 deaths or 2.74% of the total deaths, the rate per thousand being 0.384 in each instance.

During 1932, the percentages of the total deaths and the rates for these groups were 4.00% and 1.90% and 0.443 and 0.211 respectively.

The items under the former group are:—

Meningitis	...	...	11
Cerebral haemorrhage	...		2
Infantile convulsions	...		2
Hemiplegia	...	...	1

The items under the latter group are:—

Diseases of the heart	...	10
Diseases of the arteries	...	3
High blood pressure	...	2
Thrombosis	...	1

" Diseases of the skin and cellular tissue " were responsible for 5 deaths or 0.85% of the total deaths, the rate per thousand being 0.120.

The deaths include:—

Pemphigus	...	...	3
Abscess	...	...	2

" Old age " was recorded as the cause of death in 3 cases comprising 0.51% of the total deaths. The rate per thousand of population for this condition was 0.072.

" Congenital malformations " and " Diseases of the bones " were responsible for one death each, the causes being cleft palate and osteomyelitis of spine respectively.

The percentage of total deaths and rate per thousand were 0.17% and 0.024 in each case.

CAUSES OF DEATH.

International causes of death.	White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	Nubian.	Total.
1. General Diseases.									
1. Typhoid fever	1	2	—	—	—	—	—	—	3
5. Malaria	1	6	—	15	2	—	—	—	24
7. Measles	—	6	—	2	—	—	—	—	8
9. Whooping cough	—	—	—	4	—	—	—	—	4
10. Diphtheria	—	1	—	—	—	—	—	—	1
11. Influenza	—	1	—	—	—	—	—	—	1
16. Dysentery	—	—	—	5	—	—	—	—	5
24. Cerebro-spinal meningitis	—	—	2	2	—	—	—	—	4
25. Blackwater fever	—	1	1	—	—	—	—	—	2
25. Yaws	—	—	—	2	—	—	—	—	2
25. Trypanosomiasis	—	—	—	1	—	—	—	—	1
31. Tuberculosis, respiratory system	1	2	—	13	1	—	—	—	17
33. Tuberculosis, intestines	—	—	—	4	—	—	—	—	4
37. Disseminated tuberculosis	—	—	—	6	—	—	—	—	6
38. Syphilis	—	—	—	4	—	—	—	—	4
40. Gonorrhoea	—	—	—	1	—	—	—	—	1
41. Septicaemia	1	2	—	13	1	—	—	—	17
II. General Diseases not included above.									
43. Cancer of buccal cavity	—	—	—	1	1	—	—	—	2
44. Cancer of stomach	1	—	—	—	—	—	—	—	1
44. Cancer of liver	—	—	—	1	—	—	—	—	1
46. Cancer of pelvis	—	—	—	1	—	—	—	—	1
47. Cancer of breast	1	—	—	—	—	—	—	—	1
49. Cancer of pancreas	1	—	—	—	—	—	—	—	1
49. Cancer unspecified	—	1	—	—	—	—	—	—	1
56. Rickets	—	2	1	—	—	—	—	—	3
57. Diabetes	—	1	—	—	—	—	—	—	1
58. Anaemia	—	2	—	—	—	—	—	—	2
61. Parathyroid tetany	1	—	—	—	—	—	—	—	1
64. Rupture of spleen	—	—	—	1	—	—	—	—	1
III. Diseases of the Nervous System.									
71. Meningitis	—	3	1	7	—	—	—	—	11
74. Cerebral haemorrhage	1	—	—	1	—	—	—	—	2
75. Hemiplegia	—	—	—	1	—	—	—	—	1
80. Infantile convulsions	—	2	—	—	—	—	—	—	2
IV. Diseases of the Circulatory System.									
88. Endocarditis	1	1	—	—	—	—	—	—	2
90. Diseases of the heart	1	2	3	1	—	—	1	—	8
91. Diseases of the arteries	1	—	—	1	—	1	—	—	3
92. Mesenteric thrombosis	—	—	—	1	—	—	—	—	1
96. High blood pressure	—	2	—	—	—	—	—	—	2
V. Diseases of the Respiratory System.									
99. Bronchitis	1	2	—	2	—	—	—	—	5
100. Broncho-pneumonia	1	26	—	27	2	—	—	—	56
101. Pneumonia	3	35	1	114	5	—	1	—	159
102. Pleurisy	2	—	—	—	—	—	—	—	2
103. Pulmonary collapse	—	1	—	—	—	—	—	—	1
VI. Diseases of the Digestive System.									
111. Gastric ulcer	—	1	—	—	—	—	—	—	1
113. Gastro-enteritis	—	7	—	10	—	—	—	—	17
114. Gastro-enteritis	—	—	1	5	—	—	—	—	6
117. Appendicitis	1	1	—	—	1	—	—	—	3
118. Intestinal obstruction	2	—	—	4	—	1	—	—	7
122. Cirrhosis of liver	—	—	—	3	—	—	—	—	3
124. Cholecystitis, hepatitis	—	2	—	3	—	—	—	—	3
124. Liver abscess	—	—	—	1	—	—	—	—	1

CAUSES OF DEATH (Continued).

International causes of death.	White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	Nubian.	Total.
VII. Non-venereal Diseases of the Genito-urinary System and Annexa.									
128. Acute nephritis	—	2	—	4	—	—	—	—	6
129. Chronic nephritis	—	1	1	5	—	—	—	—	7
131. Pyonephrosis	—	—	—	1	—	—	—	—	1
135. Disease of prostate	1	—	—	—	—	—	—	—	1
137. Ovarian cyst	—	—	—	—	—	—	—	1	1
140. Uterine haemorrhage ...	1	—	—	—	—	—	—	—	1
VIII. The Puerperal State.									
143. Ectopic gestation	—	—	—	—	—	1	—	—	1
144. Puerperal haemorrhage ...	—	1	—	1	—	—	—	—	2
145. Caesarean section	—	1	—	—	—	—	—	—	1
145. Prolonged labour	—	1	—	—	—	1	—	—	2
146. Puerperal sepsis	1	4	—	2	1	—	—	—	8
147. Puerperal pulmonary embolism	—	2	—	—	—	—	—	—	2
148. Puerperal albuminuria ...	—	1	1	1	—	1	—	—	4
IX. Diseases of the Skin and Cellular Tissue.									
153. Retro-peritoneal abscess ...	—	—	—	1	—	—	—	—	1
153. Acute abscess	—	1	—	—	—	—	—	—	1
154. Pemphigus	—	1	—	2	—	—	—	—	3
X. Diseases of the Bones.									
155. Osteomyelitis of spine ...	—	—	—	1	—	—	—	—	1
X. Congenital Malformations.									
159. Cleft palate	—	1	—	—	—	—	—	—	1
XII. Diseases of Early Infancy.									
160. Congenital debility	—	19	—	8	—	—	—	—	27
161. Premature birth	1	10	1	3	—	—	—	—	15
162. Septic umbilicus	—	5	—	—	—	—	—	—	5
162. Asphyxia neonatorum ...	—	1	—	—	—	—	—	—	1
162. Haemorrhage of new born ...	—	—	—	1	—	—	—	—	1
XIII. Old Age.									
164. Senility	1	1	—	1	—	—	—	—	3
XIV. External Causes.									
165. Suicide by poisoning ...	—	1	—	—	—	—	—	—	1
168. Suicide by hanging	—	1	—	1	—	—	—	—	2
170. Suicide by firearms	3	—	—	—	—	—	—	—	3
179. Accidental burns	—	1	—	2	—	—	—	—	3
182. Accidental drowning ...	3	—	—	—	—	—	—	—	3
183. Accidental injury by firearms	—	1	—	—	—	—	—	—	1
188. Accidental injury by road vehicles	—	2	—	3	—	—	—	—	5
189. Injury by animals	1	—	—	—	—	—	—	—	1
192. Starvation	—	—	—	1	—	—	—	—	1
196. Electricity	—	—	—	1	—	—	—	—	1
198. Homicide by cutting instruments	—	—	—	3	—	—	—	—	3
201. Fracture	—	2	—	1	—	—	—	—	3
202. Judicial hanging	2	—	—	14	—	—	—	—	16
203. Violent death	—	—	—	2	—	—	—	—	2
XV. Ill-defined Diseases.									
205 : 1 Heart failure	1	6	3	—	—	—	1	—	11
205 : 2 P.U.O.	—	1	—	—	—	—	—	—	1
205 : 3 Post operative shock ...	—	—	—	1	—	—	—	—	1
Anaesthesia	—	1	—	1	—	—	—	1	3
Unknown	—	2	1	7	—	—	—	—	10
TOTAL ...	37	182	17	325	14	5	3	2	585

11. INFANT MORTALITY.

The total number of deaths in infants of one year of age and under during 1933 was 180, or 30.76% of the total deaths for all ages.

As it is impossible to compile any infant mortality rate with sufficient accuracy, the only rate that can be stated is the percentage of infant deaths to total deaths, and as this has been the method adopted in the past, comparative figures can be produced which are relatively accurate.

INFANT DEATHS.

Race	Infants deaths	Total deaths	% of total deaths
White	2	37	5.40
Asiatic	104	199	52.26
Native	74	349	21.20
All races	180	585	30.76

INFANT DEATHS FOR SEVEN YEARS.

	Percentage of total deaths							Average
Race	1927	1928	1929	1930	1931	1932	1933	7 years
White	13.5	8.3	23.7	13.2	12.0	9.6	5.4	12.2
Asiatic	37.7	34.5	44.9	42.7	44.6	45.8	52.2	43.2
Native	5.8	13.1	15.4	10.6	20.6	17.3	21.2	14.8
All races	18.6	20.6	24.3	20.6	29.5	28.0	30.7	24.6

It is noted that the percentage of infant deaths to the total deaths for Europeans for the year 1933 is considerably less than that of the previous year and also of the average for the past seven years, unfortunately the same cannot be said for the Asiatic and Native races and also for all races.

The percentage for Asiatics stands at the high figure of 52.2 whereas in 1932 the figure was 41.7, the average for seven years being 43.2.

This high percentage is very unsatisfactory, especially if reviewed in conjunction with the birth statistics.

Taking the birth notifications for the second half of the year as being representative for the whole year, it may be assumed that about one half of the Indian births were stillborn and over one half of those born alive did not survive the first year, in other words, less than one quarter of the Indian children born lived for one year.

The inference is that there is urgent need of extension of child welfare and ante-natal work to include these communities and also strict supervision is required over the Indian midwife.

The percentage of infant deaths to total deaths for Native races for 1933 was 21.2, comparing unfavourably with 17.3 the figure for 1932 and also unfavourably with 14.8 which was the average percentage for the past seven years.

Largely owing to the high Indian figure, the percentage of infant deaths to total deaths for all races reached 30.7% which is the highest percentage reached for at least seven years. It compares unfavourably with 1932 when the percentage was 28.0 and with the average percentage for the past seven years with the figure of 24.6.

INFANT MORTALITY.

	White	Indian	Goan	Native	Somali	Total
Malaria	—	2	—	4	—	6
Measles	—	3	—	—	—	3
Whooping cough	—	—	—	3	—	3
Influenza	—	1	—	—	—	1
Cerebro-spinal meningitis ...	—	—	1	—	—	1
Pulmonary tuberculosis ...	—	—	—	1	—	1
Tuberculosis of intestine ...	—	—	—	1	—	1
Disseminated tuberculosis ...	—	—	—	1	—	1
Syphilis	—	—	—	1	—	1
Septicaemia	—	—	—	1	—	1
Rickets	—	2	—	—	—	2
Parathyroid tetany	1	—	—	—	—	1
Meningitis	—	2	1	—	—	3
Convulsions	—	2	—	—	—	2
Bronchitis	—	2	—	1	—	3
Broncho-pneumonia	—	18	—	17	1	36
Pneumonia	—	19	—	18	1	38
Diarrhoea	—	7	—	9	—	16
Nephritis	—	—	—	1	—	1
Abscess	—	1	—	—	—	1
Pemphigus	—	1	—	2	—	3
Cleft palate	—	1	—	—	—	1
Congenital debility	—	19	—	7	—	26
Prematurity	1	10	1	3	—	15
Septic umbilicus, haemorrhage	—	6	—	1	—	7
Ill defined	—	3	2	1	—	6
Total	2	99	5	72	2	180
Total deaths	37	182	17	325	14	
Percentage of total deaths	5.4%	54.4%	29.4%	22.1%	14.2%	

SEASONAL INFANT MORTALITY.

	Jan.	Feb.	Mar.	Apl.	May	Jne.	Jly.	Aug.	Sep.	Oct.	Nov.	Dec	Total
Malaria	2	1	—	—	—	—	1	—	—	1	—	1	6
Measles	—	1	—	1	—	1	—	—	—	—	—	—	3
Whooping cough	—	—	—	—	—	—	—	1	—	—	—	2	3
Influenza	—	—	—	—	—	1	—	—	—	—	—	—	1
Cerebro-spinal meningitis ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Pulmonary tuberculosis ...	—	—	—	—	—	1	—	—	—	—	—	—	1
Tuberculosis of intestines ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Disseminated tuberculosis ...	—	—	1	—	—	—	—	—	—	—	—	—	1
Syphilis	—	—	—	—	—	—	—	—	1	—	—	—	1
Septicaemia	—	—	—	—	—	—	—	—	1	—	—	—	1
Rickets	—	—	—	1	—	—	—	—	1	—	—	—	2
Parathyroid tetany	—	—	1	—	—	—	—	—	—	—	—	—	1
Meningitis	—	—	—	—	—	—	—	1	1	1	—	—	3
Convulsions	—	—	—	—	—	—	—	1	—	1	—	—	2
Bronchitis	1	—	1	—	—	—	—	—	—	1	—	—	3
Broncho-pneumonia	4	4	2	—	3	2	2	3	4	3	—	9	36
Pneumonia	3	2	5	—	3	2	3	2	6	6	3	3	38
Diarrhoea	1	1	3	1	4	—	—	2	2	—	1	1	16
Nephritis	—	—	—	—	—	—	—	—	—	—	1	—	1
Abscess	—	—	—	—	—	—	—	—	—	1	—	—	1
Pemphigus	—	—	—	1	—	1	—	—	—	—	1	—	3
Cleft palate	—	—	—	—	—	—	—	—	—	1	—	—	1
Congenital debility	4	1	—	1	1	2	5	4	1	—	1	6	26
Prematurity	1	—	1	2	—	—	3	—	5	—	1	2	15
Septic umbilicus	1	—	—	—	—	—	1	2	—	2	1	—	7
Ill defined	—	—	—	3	—	2	—	—	1	—	—	—	6
TOTAL	17	10	14	10	13	12	15	16	23	17	9	24	180

COMPARISON OF THE PERCENTAGE OF THE FOUR PRINCIPAL CAUSES OF INFANT MORTALITY TO TOTAL INFANT DEATHS FOR SEVEN YEARS.

	Percentage to total infant deaths							Average
	1927	1928	1829	1930	1931	1932	1933	7 years
Pneumonia ...	47.9	32.6	32.0	44.6	41.7	36.1	41.1	39.5
Congenital debility ...	15.4	10.6	11.9	10.0	15.9	12.9	14.4	13.0
Prematurity ...	6.5	11.3	13.2	15.0	7.7	17.0	8.3	11.3
Diarrhoea and enteritis ...	6.5	7.8	9.4	6.9	8.7	9.5	8.8	8.2

Pneumonia still holds the premier position of the four principal causes of infant mortality and in 1933 accounted for 41.1% of the total infant deaths, the figure is higher than that for 1932 and is also higher than the average for seven years.

Congenital debility is second on the scale, as against third in 1932, with a percentage of 14.4 which is higher than the percentage for the previous year and also higher than the average for seven years.

Diarrhoea and enteritis is third on the list with a percentage of 8.8 which compares favourably with 9.5 for 1932 but is slightly higher than the average for seven years.

Prematurity is last with a percentage of 8.3 compared with second in 1932 with 17.0% and compares favourably with the average for seven years of 11.3.

12. NOTIFIABLE INFECTIOUS DISEASES.

No alteration to the list of notifiable infectious diseases has been made since malaria was added in 1930.

The number of cases of infectious diseases notified during the year was 1,196 as compared with 964 in 1932, the difference being mainly accounted for by the increase in malaria cases.

For comparison with previous years, excluding the 1,071 cases of malaria notified, the total of 125 compares favourably with the totals for the past six years which were 466, 368, 124, 249, 177 and 128 respectively.

The number of malaria cases notified totalled 1,071 as compared with 836 for 1932, 419 for 1931 and 789 for 11 months of 1930.

24 cases of typhoid fever were notified as against 31 in the previous year.

Puerperal sepsis was more freely notified during 1933, 13 cases being reported compared with 2 during 1932.

Pulmonary tuberculosis was notified in 36 cases during the year compared with 37 during the previous year whilst tuberculosis other than pulmonary accounted for 20 notifications against 15 in 1932.

Diphtheria of a sporadic nature was reported in 5 instances compared with 10 in the previous years.

Tropical typhus cases were notified 5 times in 1933 against 4 cases reported in 1932.

The notifications for cerebro-spinal meningitis totalled 4 which was one in excess of the number reported last year.

Relapsing fever was notified in 4 cases during 1933, no cases being reported during 1932.

There were 4 cases of blackwater fever compared with 2 during the previous year.

Leprosy accounted for 3 notifications as against one in 1932.

Anthrax, erysipelas and trypanosomiasis were notified in two instances each compared with 12, 1, and 0 respectively for 1932.

One case of ophthalmia neonatorum was reported.

There was no case of plague within the Municipality during 1933.

INFECTIOUS DISEASES NOTIFIED.

	White	Asiatic	Native	Total
Malaria	45	232	794	1,071
Typhoid fever	3	7	14	24
Puerperal sepsis	1	9	3	13
Diphtheria	1	2	2	5
Tropical typhus	5	—	—	5
Celebro-spinal meningitis	—	2	2	4
Relapsing fever	—	—	4	4
Blackwater fever	—	3	1	4
Leprosy	—	—	3	3
Anthrax	—	—	2	2
Erysipelas	—	1	1	2
Trypanosomiasis	—	—	2	2
Ophthalmia neonatorum	—	—	1	1
Tuberculosis-pulmonary	1	6	29	36
meningitis	—	—	1	1
intestines	1	—	4	5
vertebral column ...	—	—	2	2
joints	—	—	3	3
skin, etc.	—	—	1	1
glands	—	—	5	5
generalised	—	—	3	3
Total	57	262	877	1,196

Seasonal Incidence of Infectious Diseases Notified.

	Jan.	Feb.	Mch.	Apr.	May.	Jne.	Jly.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Malaria	31	61	110	137	171	202	121	85	32	44	35	42	1071
Typhoid	—	1	4	2	4	1	2	2	—	5	—	3	24
Puerperal sepsis ...	1	—	1	1	—	1	1	2	3	1	2	—	13
Diphtheria ...	—	—	1	—	1	1	—	—	—	—	1	1	5
Tropical typhus ...	1	—	—	—	—	—	—	—	3	1	—	—	5
Cerebro-spinal meningitis	—	—	—	—	1	—	—	1	—	—	2	—	4
Relapsing fever ...	2	—	—	—	—	—	—	—	2	—	—	—	4
Blackwater fever ...	1	—	—	—	—	1	—	1	1	—	—	—	4
Leprosy	—	—	1	1	1	—	—	—	—	—	—	—	3
Anthrax	—	1	—	—	1	—	—	—	—	—	—	—	2
Erysipelas ...	—	—	—	1	1	—	—	—	—	—	—	—	2
Trypanosomiasis ...	1	—	—	—	—	—	1	—	—	—	—	—	2
Ophthalmia neonatorum	—	—	—	—	—	—	1	—	—	—	—	—	1
Tuberculosis :													
Pulmonary ...	1	2	7	4	—	6	6	1	—	3	2	4	36
Meningitis ...	—	—	—	—	—	—	—	—	—	1	—	—	1
Intestines ...	1	—	—	—	2	1	—	—	—	—	1	—	5
Vertebral column	1	—	—	—	—	—	—	—	—	1	—	—	2
Joints	—	—	1	1	—	—	—	—	—	1	—	—	3
Skin, etc.	—	—	—	—	—	—	—	1	—	—	—	—	1
Glands	—	—	1	—	1	—	1	1	—	1	—	—	5
Generalised ...	—	—	1	—	—	—	—	2	—	—	—	—	3
TOTAL	40	65	127	147	183	213	133	96	41	58	43	50	1196

Incidence and Death Rates for Notifiable Infectious Diseases.

Disease.	Number of cases.	Number of deaths.	Incidence per 100,000.	Deaths per 100,000.
Malaria	1071	24	2568.25	57.55
Typhoid fever group	24	3	57.55	7.19
Puerperal sepsis	13	8	31.17	19.18
Diphtheria	5	1	11.99	2.39
Tropical typhus	5	—	14.38	—
Cerebro-spinal meningitis ...	4	4	9.59	9.59
Relapsing fever	4	—	9.59	—
Blackwater fever	4	2	9.59	4.79
Leprosy	3	—	7.19	—
Anthrax	2	—	4.79	—
Erysipelas	2	—	4.79	—
Trypanosomiasis	2	1	4.79	2.39
Ophthalmia neonatorum ...	1	—	2.39	—
Tuberculosis	56	27	134.28	64.74
TOTAL	1196	70	2868.00	167.86

COMPARISON OF NOTIFICATIONS OF INFECTIOUS DISEASES FOR 11 YEARS.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Plague	—	23	8	43	70	26	—	112	51	7	—
Malaria	Notifiable Feb. 1930.							789	419	836	1071
Tuberculosis	23	19	44	47	44	61	48	50	54	52	56
Enteric fever group ...	15	12	15	28	29	128	27	26	23	31	24
Tropical typhus ...	3	6	7	2	3	2	4	6	11	4	5
Anthrax	29	6	5	3	5	8	3	5	7	12	2
Cerebro-spinal meningitis	18	9	8	7	16	18	6	19	7	3	4
Puerperal sepsis ...	1	4	—	—	3	8	16	10	6	2	13
Leprosy	4	4	9	14	6	5	1	4	4	1	3
Relapsing fever	2	20	46	27	9	4	9	3	3	—	4
Ophthalmia neonatorum	—	—	—	—	—	—	1	1	2	—	1
Blackwater fever ...	Notifiable Nov. 1928.					4	—	5	2	2	4
Diphtheria	—	6	1	5	4	7	4	4	2	10	5
Scarlet fever	—	—	—	—	—	1	—	1	1	—	—
Malta fever	3	5	3	3	5	—	—	—	1	1	—
Beri-beri	—	—	2	—	—	1	—	—	—	—	—
Erysipelas	—	3	—	1	—	—	2	2	—	1	2
Smallpox	1	—	1	1	6	3	—	—	—	—	—
Trypanosamiasis ...	—	—	—	1	—	1	2	1	—	—	2
Acute anterior poliomyelitis	—	—	—	—	—	—	—	—	2	—	—
Encephalitis lethargica ..	—	—	—	—	—	—	—	—	1	2	—
Glanders	—	—	—	—	—	—	—	—	—	—	—
Rabies	—	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—	—	—	—	—

13. INFECTIOUS AND COMMUNICABLE DISEASES.

Acute Anterior Poliomyelitis.

No cases were reported during the year, the only instance of this disease being recorded in Nairobi was in 1931 when two cases were notified.

Anthrax.

Two cases, both natives, were notified, with no deaths, one in February and one in May. This is the lowest number of cases of this disease notified for 10 years, the highest number being in 1923 when 29 cases were reported and the next lowest in 1926 and 1929 when three cases were reported in each year.

Beri-beri.

No case was notified during the year. This disease has only been reported in three instances during the past 10 years, in 1925 there were two cases and in 1928 there was one case.

Blackwater Fever.

This condition was made notifiable in 1928, since when there have been 17 cases. During 1933, four cases were reported comprising 3 Asiatics and one Native. Two Asiatic cases had a fatal termination. From 1928 to 1932 there were 4, 0, 5, 2 and 2 cases respectively.

Cerebro-spinal Meningitis.

Four cases occurred during the year among two Asiatics and two Natives, all four cases being fatal. Although there is one more case than in 1932, it is evident that this condition is becoming less frequent, as is exemplified by the numbers reported during the previous 10 years, which were 18, 9, 8, 7, 16, 18, 6, 19, 7, and 3 respectively.

Chickenpox, Measles, Whooping Cough, Mumps.

These conditions are not notifiable and therefore no correct idea of their incidence can be formulated, but they occurred very frequently during 1933 and the incidence assumed epidemic proportions towards the end of the year. Some idea of the increase of the incidence in the second half of the year may be obtained from the table on page 35 giving the admissions to the Infectious Diseases Hospital and the patient days in hospital.

Four deaths among Natives were attributed to whooping cough and eight deaths among six Asiatics and two Natives were attributed to measles.

Cholera.

There are no records to indicate that this disease has occurred in Nairobi.

Diphtheria.

As in the past, this condition did not assume epidemic proportions, five cases were reported at widespread intervals, one case each occurring in March, May, June, November and December. The cases were equally divided among the races, one being European, two Asiatic and two Natives. There was one fatal Asiatic case. During the previous 9 years, 43 cases have been reported, averaging under 5 per year. The average of 5 has only been exceeded in three years, namely 1924, 1928 and 1932 when there were 6, 7 and 10 cases respectively.

DYSENTERY.

This disease is not notifiable, so no idea can be obtained of its incidence. Although the deaths this year amount to one less than the previous year, reports received during the year appear to indicate that the incidence has been increased.

The five deaths were all among natives and occurred, two in July, one in November and two in December.

ENCEPHALITIS LETHARGICA.

No cases were notified. The only cases to be recorded in Nairobi were two fatal Asiatic cases in 1932 and one fatal European case in 1931.

TYPHOID FEVER GROUP.

There were 24 cases notified during the year, 3 European, 7 Asiatic and 14 Native.

This condition did not assume epidemic proportions, the cases being fairly evenly spread out during the year, five cases occurring in October and four cases both in March and May.

One European and two Asiatic deaths were attributed to this disease.

Except in 1931 when there were 23 notifications, there were fewer cases reported during 1933 than in the previous 7 years.

ERYSIPELAS.

Only one European case and one Native case of this disease were notified, neither case was fatal.

GLANDERS, RABIES.

No cases of these diseases have yet been recorded in Nairobi, although it is noted that rabies has been present in other parts of the Colony.

LEPROSY.

Three cases all among Natives were reported. There were no deaths from this condition.

For the past 10 years there has been an average of 5 cases a year notified, thus the incidence is almost stationary as far as notified cases are concerned.

MALTA FEVER.

No cases were notified as compared with one case in 1932 and 1931, the last case previous to this was in 1927.

MALARIA.

Details of the notification of this disease are given in another section of this report.

OPHTHALMIA NEONATORUM.

One case, that of a Native was notified. This condition is apparently not prevalent, two cases being reported in 1931 and one each in 1930 and 1929.

PLAGUE.

No case of human plague occurred during the year. In 1932 there were 7 cases with 6 deaths.

Since 1916, during five years only, namely 1918, 1919, 1922, 1929 and 1933 have there been no plague cases reported.

PNEUMONIA.

During 1933, pneumonia was responsible for 159 deaths and broncho-pneumonia for 56 making a total of 215 deaths or 36.7% of the total deaths, of these deaths 4 were European, 62 Asiatic and 149 Native.

The percentage of deaths from pneumonia to total deaths for the previous four years from 1932 to 1929 was 34.1, 36.1, 36.3 and 40.0 respectively.

Of the 215 deaths from this condition, 74 were of infants under one year of age.

The annual death rates per thousand of population for the races for the pneumonias during 1933 were :—

Race.		Death rate.
White	...	0.77
Asiatic	...	4.63
Native	...	6.42
All races	...	5.15

For the past eight years, the death rates for all races have been :—

1926	...	5.2	1930	...	5.8
1927	...	5.9	1931	...	4.9
1928	...	7.6	1932	...	3.7
1929	...	5.5	1933	...	5.1

Although the rate for 1933 shows a considerable increase over the two previous years, there would appear to be an indication of a progressive decrease.

PUERPERAL SEPSIS.

Cases under this heading were more freely notified during the year, but even now it cannot be assumed that the number is by any means accurate.

Of the 13 cases reported, 1 was European, 9 Asiatic and 3 Native; 8 of these cases namely, 1 European, 4 Asiatic and 3 Native had a fatal termination.

RELAPSING FEVER.

There was a slight increase in the number of cases of this disease reported, namely 4, as compared with none in 1932 and 3 each in 1930 and 1931, although compared with 1924, 1925 and 1926, when 20, 46 and 27 were notified respectively, there was a considerable decrease. All four cases occurred among Natives and none were fatal.

SCARLET FEVER.

No case was reported during 1933. One case occurred in each of the years 1928, 1930 and 1931.

SMALLPOX.

No case was reported. The last case occurred in 1928.

TRYPANOSOMIASIS.

Two cases were notified both in natives with one death. The last case was in 1930, previous to that date, there were two cases in 1929, one in 1928 and one in 1926.

TROPICAL TYPHUS.

Five European cases were reported with no deaths, one in January, one in October and three in September. These cases are in all probability not accurately representative of the total number of cases occurring within the Municipality.

It is remarked that the number of tick infested houses is considerable and it is surprising that more cases of this disease do not occur.

In the interests of health, it is recommended that householders should not keep dogs within the house unless strict and constant attention is paid to disinfestation.

The quantity of ticks is doubtless maintained to a large extent by the number of cattle that are permitted to wander about and graze within the Municipality and until the movements of cattle can be restricted within the township, the number of ticks supplied from this reservoir will not be reduced.

TUBERCULOSIS.

Tuberculosis of all forms was notified in 56 instances, among 2 Europeans, 6 Asiatics and 48 Natives; 27 of these cases had a fatal termination, among 1 European, 2 Asiatics and 24 Natives.

Thirty-six of these cases were pulmonary with 17 deaths, the cases occurred in 1 European with a fatal termination, 6 Asiatics with 2 deaths and 29 Natives with 14 deaths.

Of the 20 cases notified as other than pulmonary, 10 were fatal and occurred all among Natives with the exception of one fatal European case of peritonitis.

The 19 cases among Natives were classified as being tuberculosis of:—

Glands	...	5
Intestines	...	4
Joints	...	3
Generalised	...	3
Vertebral column		2
Meningitis	...	1
Abscess	...	1

The notification rate for all forms of tuberculosis equalled 1.34 per thousand population for all races.

Tuberculosis accounted for 4.61% of the total deaths for the year, which compares favourably with the figure of 5.52 for 1932.

The death rate for this condition was 0.647 per thousand of population which compares favourably with 0.612 for the previous year.

14. ADMISSIONS TO HOSPITAL.

The following details are of Municipal patients admitted to each of the three institutions available, namely

European Hospital,
Native Hospital,
Infectious Diseases Hospital.

for infectious or communicable diseases requiring segregation for the public welfare.

The institutions are conducted by the Government but the Municipality is responsible for the patients admitted to Hospital to the extent of paying for treatment in accordance with the undermentioned scale:—

Europeans	Shs. 24-00 per diem
Asiatics	Shs. 3-00 per diem
Natives	Sh. 1-00 per diem

The numbers of admissions have been increased this year owing to an epidemic of chickenpox, whooping cough and measles which occurred during the latter part of the year.

Whilst leprosy appears to be somewhat stationary, the days in hospital for tuberculosis are apparenlly increasing.

The accompanying tables give details as to the number of admissions and patient days for each race monthly for the individual hospitals and also a summary, and finally there is a table of the patient days for the races indicating the conditions for which the patients were admitted.

MUNICIPAL PATIENTS—EUROPEAN HOSPITAL.

Month.	Admissions.	Patient days.
January	2	35
February	—	—
March	—	—
April	1	24
May	—	31
June	—	6
July	—	—
August	—	—
September	2	17
October	1	52
November	—	31
December	—	31
Total	6	227

MUNICIPAL PATIENTS—NATIVE HOSPITAL.

Month.	Asiatic.		Native.		Total	
	Admissions.	Patient. days.	Admissions.	Patient. days.	Admissions.	Patient days.
January	—	15	6	110	6	125
February	—	—	2	33	2	33
March	—	—	2	56	2	56
April	—	—	2	89	2	89
May	1	14	1	93	2	107
June	—	—	3	93	3	93
July	—	—	3	67	3	67
August	—	—	5	130	5	130
September	—	—	3	96	3	96
October	—	—	2	99	2	99
November	—	—	2	91	2	91
December	—	—	2	79	2	79
Total	1	29	33	1036	34	1065

MUNICIPAL PATIENTS—INFECTIOUS DISEASES HOSPITAL.

Month.	European. Admissions.	European. Patient days.	Asiatic. Admissions.	Asiatic. Patient days.	Native. Admissions.	Native. Patient days.	Total. Admissions.	Total. Patient days.
January ...	—	—	—	31	8	333	8	364
February ...	—	—	—	28	13	429	13	457
March ...	—	—	—	31	25	626	25	657
April ...	—	—	—	26	10	453	10	479
May ...	—	—	—	—	7	320	7	320
June ...	—	—	—	—	7	311	7	311
July ...	—	—	—	—	15	486	15	486
August ...	1	15	—	—	22	800	23	815
September	—	—	—	—	68	1063	68	1063
October ...	—	—	—	—	54	1258	54	1258
November ...	—	—	—	—	64	1693	64	1693
December ...	—	—	—	—	53	1473	53	1473
Total ...	1	15	—	116	346	9245	347	9376

MUNICIPAL PATIENTS—SUMMARY.

Hospital.	European. Admissions.	European. Patient days.	Asiatic. Admissions.	Asiatic. Patient days.	Native. Admissions.	Native. Patient days.	Total. Admissions.	Total. Patient days.
European ...	6	227	—	—	—	—	6	227
Native ...	—	—	1	29	33	1036	34	1065
Infectious Diseases ...	1	15	—	116	346	9245	347	9376
Total ...	7	242	1	145	379	10281	387	10668

MUNICIPAL PATIENT DAYS BY DISEASES.

Disease.	White.	Asiatic.	Native.	Total.
Chickenpox	— ...	— ...	2,335 ...	2,335
Tuberculosis	87 ...	116 ...	2,111 ...	2,314
Leprosy	— ...	— ...	2,039 ...	2,039
Measles	— ...	— ...	1,774 ...	1,774
Whooping cough ...	— ...	— ...	862 ...	862
Scabies	— ...	— ...	502 ...	502
Mumps	— ...	— ...	255 ...	255
Typhoid fever	9 ...	29 ...	183 ...	221
Relapsing fever ...	— ...	— ...	74 ...	74
Tropical typhus ...	69 ...	— ...	— ...	69
Puerperal sepsis ...	62 ...	— ...	— ...	62
Anthrax	— ...	— ...	47 ...	47
Diphtheria	— ...	— ...	41 ...	41
Blackwater fever ...	— ...	— ...	28 ...	28
Erysipelas	15 ...	— ...	11 ...	26
Trypanosomiasis ...	— ...	— ...	10 ...	10
Meningitis	— ...	— ...	9 ...	9
Total patient days ...	242 ...	145 ...	10,281 ...	10,668

15. MALARIA.

Malaria was made notifiable from February, 1930.

During 1933, 1,419 cases were notified as suffering from malaria, 1,015 being residents and 348 non-residents, compared with 1,015 cases during 1932, comprising 836 residents and 179 non-residents.

Particulars of the notifications for 1933 relating to seasonal incidence and race are given in the following table:—

MALARIA NOTIFICATIONS.

Month.	Resident.				Non-Resident.				Total.
	White.	Asiatic.	Native.	Total.	White.	Asiatic.	Native.	Total.	
January	3	7	21	31	6	2	12	20	51
February	4	3	54	61	2	1	13	16	77
March	3	4	103	110	1	4	21	26	136
April	2	31	104	137	2	5	32	39	176
May	9	54	108	171	10	9	29	48	219
June	4	68	130	202	4	14	63	81	283
July	10	23	88	121	1	1	26	28	149
August	4	18	63	85	—	11	22	33	118
September	3	6	23	32	3	3	13	19	51
October	—	9	35	44	4	1	8	13	57
November	—	2	33	35	1	1	6	8	43
December	3	7	32	42	2	3	12	17	59
	45	232	794	1071	36	55	257	348	1419

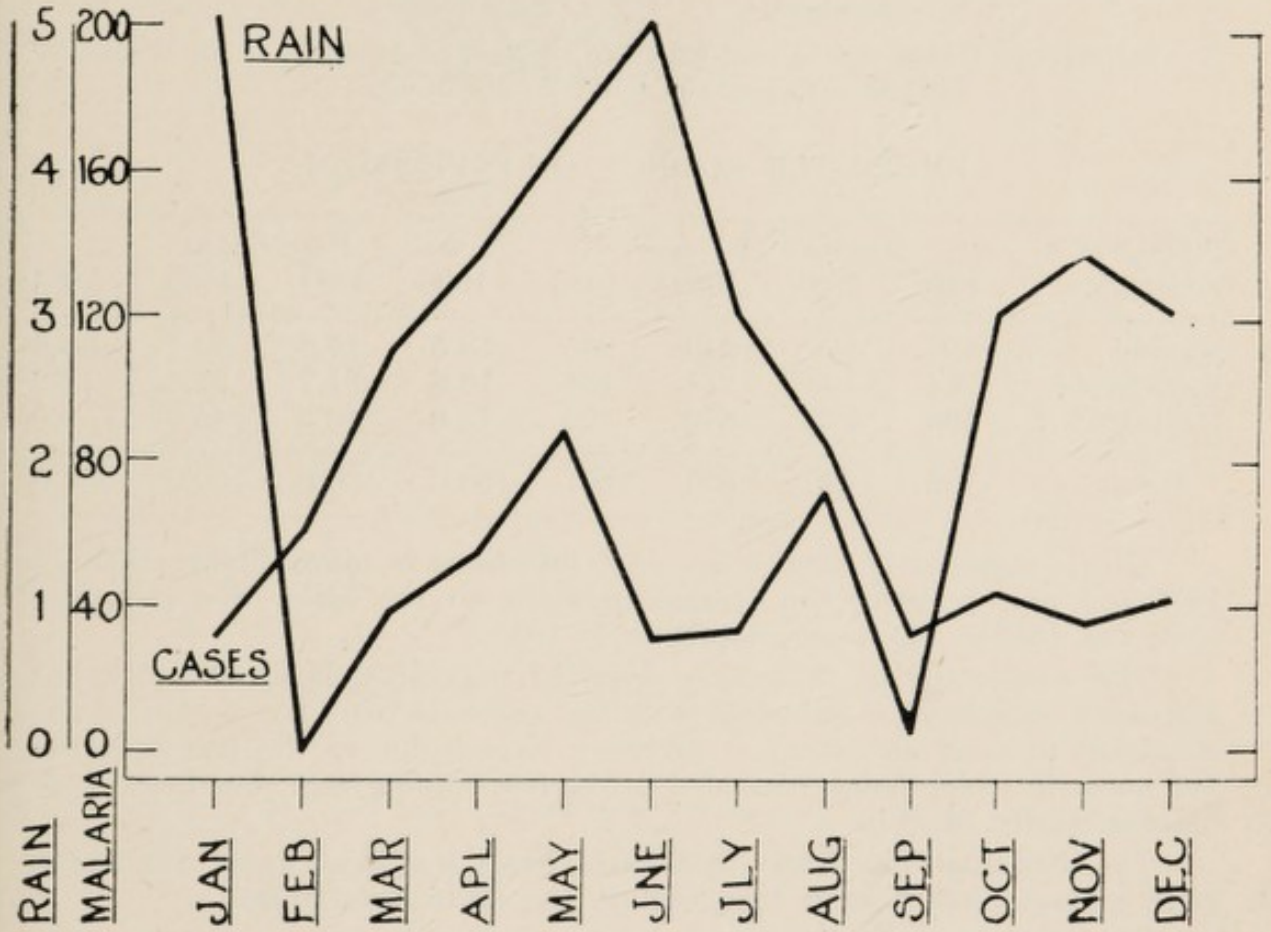
LOCALLY ACQUIRED INFECTIONS.

Month.	White.	Asiatic.	Native.	Total.
January	1	5	12	18
February	2	2	31	35
March	3	4	84	91
April	2	28	89	119
May	4	51	85	140
June	3	67	117	187
July	6	22	80	108
August	2	18	51	71
September	—	4	18	22
October	—	9	23	32
November	—	1	18	19
December	—	4	19	23
	23	215	627	865

The seasonal incidence of the locally acquired infections as shown on the accompanying graph indicates a rise from the commencement of the year terminating in a peak during June then descending to about the commencing level during September, from that month until the end of the year the graph remains almost level.

The monthly rainfall has been added to the chart for comparative purposes.

MALARIA AND RAINFALL.



INCIDENCE OF NOTIFIED MALARIA PER 1000 PERSONS.

Race.	1930	1931	1932	1933
White	23.88	13.19	13.81	8.18
Asiatic	30.51	10.87	7.41	15.36
Native	10.84	6.73	24.20	29.66
All races ...	16.62	8.81	17.64	22.60

The following tables present an analysis of the notified resident cases of malaria.

It should be noted that the diagnosis of all the notified cases with the exception of those termed "Clinical" has been supported by laboratory examination.

In the case of those classified as "Clinical" the laboratory finding was either absent or negative and evidence was produced that reasonable care had been taken in diagnosis.

Endeavour has been made since the inception of the notification of malaria to classify each case according to the location of the probable source of infection.

All the cases are placed in one of the following classes:—

1. NAIROBI — More or less conclusive evidence of infection taking place within the Municipality.
2. EX-NAIROBI — Evidence of infection being contracted outside the Municipality.
3. DOUBTFUL — Cases not falling into the previous categories or in which no definite information could be obtained.

PROBABLE SOURCE OF INFECTION.

Source of infection.	Number of Cases.				Percentage.			
	1930	1931	1932	1933	1930	1931	1932	1933
Nairobi ...	107	79	243	865	13.6	18.8	29.1	80.8
Ex-Nairobi	84	133	214	184	10.6	31.7	25.6	17.2
Doubtful ...	598	208	379	22	75.8	49.5	45.3	2.0
Total ...	789	420	836	1071	100.0	100.0	100.0	100.0

The percentage of locally acquired infections is much higher than in 1932 and now occupies the premier position on the scale, the first time since the disease was made notifiable in 1930.

The proportion of infections acquired outside the Municipality has decreased considerably compared with the previous year, the reason of the alteration to such an extent is probably largely due to the fact that the last question which has been added to the notification form, has been more conscientiously filled in.

The very small percentage of doubtful cases is without doubt due to the more accurate information tendered on the notification form.

Classification of the reported cases according to the type of infection and the probable source of infection is indicated in the accompanying tables.

TYPE OF INFECTION AND PROBABLE SOURCE.

Probable source.	Clinical	Benign tertian	Quartan	Sub-tertian	Double infections	Total cases
Nairobi ...	100	47	26	708	16	865
Ex-Nairobi	17	8	10	151	2	184
Doubtful ...	—	—	3	19	—	22
Total Residents	117	55	39	878	18	1071
Total Non-Residents	32	11	17	292	4	348
TOTAL ...	149	66	56	1170	22	1419

PERCENTAGE OF TYPES OF INFECTIONS.

Type.	Nairobi.	Ex-Nairobi	Doubtful.	Non-Residents.	Percentage total cases
Clinical ...	11.3	9.1	—	9.1	10.3
Benign tertian	5.3	4.3	—	3.1	4.6
Quartan ...	3.0	5.4	13.7	4.8	3.9
Subtertian ...	80.4	81.2	86.3	83.0	81.2

The subtertian infection represents 81.2 per cent. of the total cases as compared with 87.0 per cent. last year, quartan 3.9 per cent. and benign tertian 4.6 per cent. as against 3.4 per cent. and 3.9 per cent. respectively during 1932.

For comparative purposes and for the purpose of this report, the Municipality has been divided into 10 districts, the names of these districts being sufficient to indicate their position.

The following table indicates the number of cases of malaria notified from each of the undermentioned districts:—

NAIROBI INFECTIONS.

District.	Number of cases notified. 1930	1931	1932	1933
1. Upper Parklands ...	—	—	1	3
2. Muthaiga	3	—	1	8
3. Westlands	1	—	1	—
4. Parklands	10	4	9	31
5. Forest Road	11	6	14	133
6. Racecourse Road ...	—	3	42	128
7. Eastleigh	2	—	8	30
8. Kilimani	2	2	10	19
9. Hill	5	2	23	63
10. Commercial	73	62	134	450
Total	107	79	243	865

The "Commercial" district includes the area surrounding the Nairobi swamp and the large number of cases originating from this district clearly indicates the serious menace to the Municipality arising from this unhealthy area with its undesirable cultivation made possible by the use of uncontrolled irrigation from badly constructed irrigation channels.

Whilst this "potential mosquito farm" exists in its present state in the heart of the Municipality so long will large numbers of malaria cases be reported.

The "Racecourse Road" district includes the native locations and is in proximity to the Nairobi River, this combined with the frequent advent of natives from the reserves to the locations, renders the district difficult of control.

The "Forest Road" district is largely composed of flat black soil land and is extremely difficult to drain. Little can be done in this district to control malaria and other conditions due to lack of drainage until some efficient form of extensive drainage has been instituted.

DOUBLE INFECTIONS.

Source of infection.	Subtertian & quartan.	Subtertian & benign tertian.	Quartan & benign tertian.	No. cases notified.
Nairobi ...	4	12	—	865
Ex-Nairobi ...	2	—	—	184
Doubtful ...	—	—	—	22
Non-Resident	2	2	—	348
Total	8	14	—	1419
Percentage of total cases ...	0.56	0.98	—	

Double infections were recorded in about the same frequency as in the previous year, 22 or 1.55 per cent. of the total cases notified being recorded as double infections, compared with 20 or 1.97 per cent. in 1932, 5 or 0.69 per cent. in 1931 and 25 or 2.3 per cent. in 1930.

There was a mortality rate of 2.18 per cent. of the total cases of malaria notified.

The mortality rate among residents amounted to 2.24 per cent. and among non-residents to 2.01 per cent.

The mortality rate of the resident cases notified in 1932, 1931 and 1930 was 2.56 per cent., 2.62 per cent. and 3.68 per cent. respectively.

The death rate from malaria per thousand of population during 1933 was 0.50, a slight increase compared with 0.42 for 1932 and 0.35 for 1931 but a considerable decrease compared with 0.82 for 1930.

Details of the deaths from malaria during the year will be found under:

DEATHS FROM MALARIA.

Month.	Number of cases notified.	Number of deaths.	Percentage mortality rae.
January	31	3	9.67
February	61	2	3.27
March	110	1	0.90
April	137	2	1.45
May	171	1	0.58
June	202	2	0.99
July	121	4	3.30
August	85	3	3.52
September	32	3	9.37
October	44	1	2.27
November	35	—	—
December	42	2	4.76
Total	1071	24	2.24
Non-resident	348	7	2.01
TOTAL	1419	31	2.18

There were 7 deaths among non-residents attributed to malaria including 1 European, 1 Asiatic, 1 Seychellois and 4 Natives.

DEATH RATE FOR MALARIA PER 1000 POPULATION FOR THE RACES.

Race.	Number of deaths 1930	1931	1932	1933	Rate per 1000. 1930	1931	1932	1933
White ...	1	—	—	1	0.22	—	—	0.18
Asiatic ...	12	12	10	6	1.09	0.76	0.66	0.39
Native ...	26	5	10	17	0.81	0.18	0.37	0.63
All races	39	17	20	24	0.82	0.35	0.42	0.50

DEATHS FROM MALARIA AND RATES FOR 15 YEARS.

Year.	Number of deaths.	Death rate per 1000
1919	47	—
1920	37	—
1921	22	—
1922	29	—
1923	28	—
1924	32	—
1925	19	—
1926	130	—
1927	25	1.1
1928	27	0.60
1929	27	0.56
1930	39	0.82
1931	17	0.35
1932	20	0.42
1933	24	0.50

16. ANTI-MALARIAL WORKS.

No additions have been made to the two systems of concrete canals which were commenced in 1929 and finished in 1931. These two systems are separate, the one with a length of 11,500 feet commences at Masari Road and continues along 1st Avenue Parklands, crosses the Limuru Road and passes through the City Park emptying into the Mathari River; the other system is Y shaped, the northern arm commences at Government House grounds crosses Caledonian Road and runs in an easterly direction to Kirk Road near the old Museum and joins up with the southern arm on the south side of Sixth Avenue; the southern arm commences at the Waterworks Reserve crosses Lenana Road and proceeds down Crauford Road to the junction of Valley Road and Sixth Avenue, it then passes parallel to Sixth Avenue through the Cathedral grounds and joins with the northern arm midway between the Cathedral and the old Treasury buildings. After the junction of the two arms, the combined drain passes in a south easterly direction, crosses Whitehouse Road and approximately follows the course of the old river bed until it empties into the Ngong River. The length of this second system is 19,600 feet.

17. ANTI-MALARIAL MEASURES.

During last year a start was made to straighten and clean the stream feeding the Masari Road—Mathari River section of the anti-malarial canals and the work was completed as far as Marlborough Road. This work was continued during 1933 up to the Lower Kabete Road, a distance of 4,300 feet from the canal.

On the western side of the Lower Kabete Road reaching as far as the Spring Valley Estate which is the boundary of the Municipality, there was an extensive swamp.

This swamp has been drained by cutting two main drains 7,400 feet in length and side feeder drains to the extent of 670 feet. This work has been successful in completely draining the area and maintaining a continual flow of water from the Municipal boundary through the City Park to the Mathari River.

The outlet of the canal at City Park Bridge has been widened and straightened to allow a lessened resistance to the flow of water.

From the termination of the southernmost anti-malarial canal on Plot L.R. 2729, the stream has been cleaned and the banks repaired for a distance of 3,600 feet as far as Abdul Wahid's quarries.

A drain has been constructed to take the overflow from the water supply tank on the waterworks reserve to the Lenana Road canal, numerous murrum pits in the vicinity being either filled or drained.

The stream arising on the Kilimani plain and running to the Ngong Road, a distance of 5,535 feet, was cleared straightened in places and the banks repaired. The work on this stream entailed a considerable amount of bush cutting and burning as well as the filling of numerous murrum pits.

Drains dealing with storm water were constructed between the railway and the main road on both sides of the railway crossing on Salisbury Road. Pits were filled and land levelled in this vicinity.

The Kirichwa Kubwa stream was cleaned and the banks repaired from the Arboretum through Chiromo to the Ainsworth Bridge, a distance of 6,550 feet. The badly overgrown state of this stream necessitated a large amount of bush cutting.

In order to remedy the intense nuisance arising from the foul pollution and stagnant state of the stream running from the Ngong Road past the Native Hospital and K.A.R. and crossing the aerodrome road, it was decided to canalize this section. A start has been made from the aerodrome road end, and a length of 920 feet has already been dug as far as the small bridge near the K.A.R., the old river bed being filled in during the process of digging the new ditch. This work is continuing and the new drain will eventually meet the Kilimani stream referred to above at the Ngong Road.

As a routine, the whole length of the anti-malarial canals as well as the newly constructed drains, have been inspected weekly, clearing and repairing taking place where necessary.

Oiling has been continued throughout the year, 1,140 gallons of mixture being used as against 524 gallons used in 1932. This large increase is due almost entirely to the unsatisfactory condition of the drains along Eastern Road and Kiambu Road and this extra expense of approximately £30 will continue as long as this state of affairs exists.

When not engaged in oiling, the boys have been employed in clearing the canals and cutting and burning bush.

Including the Law Courts which are attended to monthly, 293 rooms have been disinfected during the year.

Detainees have been frequently used in cutting and burning bush and grass on Crown Land, during the year they have cleaned plots on Girouard Road, 1st Avenue Parklands, and land near Maia Carberry Home and Ngong Road bridge.

631 mosquito breeding places of which a considerable proportion were roadside drains, were dealt with.

The lorry used in connection with this work registered a mileage of 4,348 miles.

The boys used for anti-malarial work although working under the supervision of the public health department are on the pay roll of the engineering department.

18. RODENT DESTRUCTION.

Routine rat trapping was carried out during the year, rats were not so plentiful or at all events so easily caught as in the previous year.

The rat gang consists of six boys who use both cages and break back traps and work under the direction of the sanitary inspectors.

As this gang did not vary in numbers and as similar methods and conditions prevailed, the varying number of rats caught monthly may possibly give an indication as to the variation in the rat population.

In this connection it is noted that during the first half of the year a greater number of rats were caught in the township, more especially in the first quarter, whereas on Railway land, the greater number were caught during the second half of the year, more especially during the third quarter.

The Railway Administration provide their own rat gang of three boys who operate on railway premises and land.

Only three dead rats were found during 1933, one in the Bazaar area and two in the outskirts of the town, none of these dead rats were found to be positive to b. pestis on examination.

The number of rats destroyed by the Municipal rat gang totalled 16,679 compared with 21,208 during 1932.

RATS TRAPPED.

Month.	Municipal gang.	Railway gang.	Total.
January	1,779	391	2,169
February	1,803	346	2,149
March	2,036	427	2,463
April	1,238	297	1,535
May	1,150	319	1,469
June	1,026	621	1,647
July	1,108	480	1,588
August	1,216	764	1,980
September	1,359	532	1,891
October	1,285	668	1,953
November	1,338	546	1,884
December	1,342	460	1,802
Total	16,679	5,851	22,530

19. WATER SUPPLY.

The water supply of Nairobi which was taken over from the Railway Authority by the local authority in 1921, is derived from springs at Kikuyu about 12 miles from the township. The majority of the springs discharge into a natural bed reservoir holding about 3½ million gallons and the daily yield is about 600,000 gallons a day.

The water from the reservoir is led away by two mains, one nine inches and the other four inches in diameter.

At a short distance from the reservoir is a separate concreted and covered spring called No. 3 Spring which delivers about 150,000 gallons a day; the water from this spring is taken off by two pipes, one four inches in diameter which joins up with the nine inch main from the reservoir and the other a five inch pipe which supplies Kabete.

About a mile from the former springs is another concreted and covered spring called No. 1 Spring which was added two years after the undertaking was taken over by the local authority. This spring delivers about 400,000 gallons a day. The water from this source is led off by a nine inch main into a box at the junction of the two mains from the reservoir.

From the junction of these mains, a nine inch main carries the water to the large 1,020,000 gallon tank situated on the waterworks reserve in the Hill district and from this tank the major part of the town reticulation commences. Just above the junction of mains referred to above, a nine inch main is carried off and joins up with the five inch pipe to Kabete and is continued as a seven inch main to the 100,000 gallon tank at Sclaters Road, from which the remainder of the town reticulation commences.

The pressure of the whole water system is controlled by gravitation.

The total annual yield of the Kikuyu springs during 1933 was 462,589,300 gallons, the daily yield varying from 1,250,000 gallons to 1,299,570 gallons.

The annual consumption of water during the year was 427,977,650 gallons thus making the average daily consumption 1,172,570 gallons.

3,450,000 gallons of water were used in making the annual cleansing of the reservoir and the amount used for flushing mains and for road service totalled 7,640,000 gallons for the year.

Although the quality of the water supply left a lot to be desired and could hardly be described as safe, it was not until 1932 that any attempt was made to treat it.

During that year a chlorination plant was installed at the most convenient spot which was near the reservoir at a situation where the nine inch main from the reservoir after the junction of the four inch pipe from No. 3 spring, the four inch main from the reservoir and the five inch pipe from No. 3 spring, were in close proximity.

This plant is working satisfactorily and has made a considerable difference to the bacteriological quality of the water, it is unfortunate that it deals with only 65 per cent. of the water supply, in order to treat the whole supply it would be necessary to instal another plant near the junction of the pipe from No. 1 spring with the mains from the reservoir.

Another important point contributing to the quality of the water is the absence of a covering on the Sclaters Road tank. Examination of the water has shown that after chlorination and before entry into the tank, it

is practically sterile whereas after passing through the tank, an undesirable number of organisms is present pointing obviously to dust contamination occurring in the tank itself.

A few observations on the results of examination of the water supply before and after chlorination are of interest, the following table gives some details:

Date	Reservoir Bact. per litre	5000 ft. below plant Bact. per litre	After entry No. 1 spring Bact. per litre	Town tap Bact. per litre
12-7-32	6,250	nil.	—	—
1-9-32	B.coli 1000	not in 75 c.c.	—	—
20-9-32	3,152	not in 40 c.c.	—	—
22-7-32	—	—	less than 312	—
9-11-33	—	—	—	*less than 312

* Average before chlorination 624 per litre.

For some considerable period, the Council has had under consideration a scheme for a new water supply obtained from the Ruiru River, a large amount of work has been performed in connection with this suggested scheme and everything points to a commencement being made in regard to this new water supply in the near future.

Until such a supply with its increased volume of water available, is actually in being, little can be done to extend the water carriage of sewerage which is of such importance to a town like Nairobi where unusual conditions exist.

20. DRAINAGE AND SEWERAGE.

It is of the greatest importance in the interests of health that there should be an adequate sewerage system throughout the Municipality, not only in the central area but also in the outlying districts, as a very large percentage of the nuisances and offensive features of the town are obviously due to the lack of proper drainage facilities.

The health of any town is largely dependant on its drainage, but this fact is especially emphasised in the case of a town like Nairobi, which apart from climatic considerations is built on an unsuitable building site, mostly flat where the surface is mainly composed of either black soil, murrum or rock.

Sewage disposal is obtained at present by discharging sewage into the existing sewers,which empty without treatment into the Nairobi River opposite Pumwani village; by the objectionable single bucket conservancy system, the night soil being buried in trenches; by means of septic tanks where the soil and plot are suitable; by means of septic tanks and conserving tanks where the soil is not suitable for absorption of the effluent and by means of pits, outside the conserved areas, where conditions are not unfavourable.

As for waste water on premises not connected with the sewer, there is very little choice of methods of disposal, it has to be dispersed by irrigation, not a very commendable procedure as eventually if the area of ground is not extensive the surface becomes "sewage sick." This is more noticeable on plots where the soil is not absorptive.

In a considerable number of instances, owing to the non-absorptive character of the soil, the waste water is allowed to flow along spade cut drains which are difficult to keep in a sanitary condition, into roadside drains where insanitary pools are formed causing intense nuisance for which there is no remedy short of a proper drainage system.

A large proportion of the "central zone" of the town is now connected to the sewers.

During 1933, sewers were constructed along Latema Road and Reata Road and subsidiary sewers were laid, in the sanitary lane behind Victoria Street between the Central Hotel and Duke Street; in the sanitary lane behind Victoria Street between Desai Memorial and Latema Road and in the sanitary lane behind Victoria Street between Latema Road and Reata Road.

During 1932, only two short lengths of sewer were laid, one behind Stewart Street and one off Duke Street.

In 1931, two new sewers were constructed, one behind River Road and one in Stewart Street.

The lack of rain during the year has emphasised nuisances caused by the non-flushing of open concrete drains and street water tables.

21. CONSERVANCY AND SEWAGE DISPOSAL.

The far from ideal method of single bucket conservancy is still in use, the night soil carts being drawn by oxen as in the past. The night soil is buried in trenches on a site to the south of the Nairobi River near the Municipal landies opposite the southern portion of Eastleigh.

No conservancy is undertaken in the outlying areas of the Municipality and there has been little or no alteration in the area of the districts conserved.

During the year approximately 3,355 buckets have been attended to daily by the conservancy department, a slight increase over the figure for the previous year.

Many reports have been made in connection with the unsuitability of the present single bucket system with all its unavoidable sanitary disadvantages but up to date, no radical alterations have been instituted and no improvements have been noted.

The central portion of the town, with the one exception of Protectorate Road, is the only area served by sewers, and a great deal of the sanitary improvement of the town is due to their existence.

Twelve new premises with 65 closets were connected to the sewer during the year, making a total of 995 water closets in use connected to the sewerage system of the town.

The practice of approving the installation of septic tanks, where the soil and conditions were suitable, has been continued, 68 new septic tanks being installed during 1933 making a total of 323 in the Municipality.

Approval was given in 1931 for the installation of impervious "conserving" tanks to be used in connection with septic tanks erected on land not capable of dealing with the effluent, the contents of the "conserving" tank being removed by the Municipality. Since this system has been approved, only 4 of these plants have been installed.

In areas outside those served by conservancy, disposal of night soil is effected by septic tanks and pits where the soil is suitable, but pit latrines are not allowed within conserved areas even if the soil is suitable.

It is once again strongly recommended that the present conservancy system be reviewed with the object of improving the system and obviating the many nuisances which are common under the existing conditions.

22. REFUSE COLLECTION AND DISPOSAL.

Since 1931, when the modern destructor was built, there has been a very great sanitary improvement in the disposal of house and trade refuse which before this date was disposed of by means of uncontrolled tipping. This destructor has been built adjacent to the abattoir so that the steam generated at the destructor can be utilised by the by-products plant.

The system of refuse collection from the commercial area, has been modernised by the introduction of two motor freighters used in conjunction with the "container" principle of collection.

This system is being extended to the nearer suburbs, the service being augmented by a tractor and large trailer. This system of collection has replaced many ox drawn carts and therefore eliminated many nuisances, but until by-laws are in force regulating the size of dust bins and thus permitting them to be emptied direct into the container, the unsatisfactory practice of emptying the refuse on to sacking will continue.

It is noted that during the period that the destructor is closed down for repairs and overhaul, the disposal of refuse is carried out by promiscuous tipping on land in the vicinity of the abattoir. This method of uncontrolled tipping cannot be too strongly condemned as with the knowledge of the present day practice of controlled tipping there can be no excuse for reverting even temporarily to the old fashioned insanitary methods. This is another very good reason for the appointment of a qualified cleansing superintendent.

23. PUBLIC LATRINES.

Throughout the Municipality, there are 21 public latrines for non-European use, they are situated as under:—

Site.	Number of latrines.	Number of buckets.	
Ainsworth Bridge	1	8	
Swamp Road	2	16	
Ngara Road	3	16	
Native Market	1	16	
Old Slaughter House	1	8	
Municipal Landhies	2	16	
Pangani	3	24	
Municipal Native Housing ...	3	64	
Near Masonic Hall	1	6	
Near D.C.'s Office	1	8	
Whitehouse Road	1	4	
	19	186	
River Road	1	20	water carriage
Municipal Market	1	24	water carriage
TOTAL	21	230	

Comparing these figures with previous reports, the alterations of note are, the demolition of the latrines in connection with the old Jeevanjee Market and the removal of the Duke Street latrine and also the addition of further accommodaion at the new Municipal Market.

The only public sanitary conveniences provided for Europeans are those situated in the recently constructed Municipal Market.

24. SCHOOLS.

The large majority of the schools within the Municipality are maintained in an excellent condition.

The European Girls Secondary School, Protectorate Road, is an exception to the rule, the dormitories and the conveniences remaining in a very unsatisfactory state, the building itself is old and has repeatedly been condemned. The school is sited in such a position that it is almost impossible to connect it to the sewer.

Under these conditions, little can be expected in the way of improvement until such time that funds are forthcoming to permit of complete demolition of the present structure.

25. FACTORIES AND WORKSHOPS.

Until legislation is passed with special reference to factories and workshops, any health matters must of necessity be dealt with under the nuisance section of the Public Health Ordinance.

Ventilation in workshops may be efficient and overcrowding may be non-existent, yet many workers appear to be affected by climatic conditions when working under an iron roof without a ceiling.

Judging by English standards, quite a number of workshops are overcrowded and in a number the lighting is deficient, and also sleeping in workshops is by no means an uncommon practice, but these matters are difficult to regulate without legislation and with lack of staff especially in these days of financial stringency.

26. SANITATION.

COMMERCIAL AREA.

This area has shewn a very marked sanitary improvement during the last few years, owing mainly to increased drainage facilities and the making of macadam roads.

The sewering of the River Road district has resulted in the reduction of a number of nuisances. This reduction has been augmented by the building up of many of the old 'set backs' in the sanitary lanes which were an invitation for the commitment of nuisances.

It is becoming increasingly evident that both Asiatics and Natives are becoming more accustomed to the use of water carriage latrines.

Sewers have been constructed in Latema and Reata Roads and various subsidiary sewers have been laid, the roads themselves have been macadamised and midroad gardens are being developed.

Many wood and iron premises in this district have been reconstructed in stone and made rat proof.

Recent years have witnessed the erection of a considerable number of large modern buildings in the central portion of the town, amongst the most prominent being:—

National Bank of India.	St. Peter Claver's Church.
Shell Building.	Empire Theatre.
Standard Bank of South Africa.	Capitol Theatre.
McMillan Library.	Princes Theatre.
Bhora Mosque.	Rahimtulla Trust Building.
Jamie Mosque.	Desai Memorial Building.

Plot No. 136 otherwise known as the Nairobi Swamp, situated in the heart of the town, still constitutes the same sanitary menace to the health of the community as of old.

The foundations of the new Law Courts have been laid in the centre of the City Square and the completion of this fine building with its surrounding open spaces, should assist considerably not only in the beautification of the town but also create an example for future buildings in the City Square.

Owing to the increased amount of traffic in the town, some of the bridges have been found to be of insufficient width for the safety of vehicles and pedestrians; in consequence, Ainsworth Bridge, Racecourse Road Bridge and Whitehouse Road Bridge have been widened.

The conversion of the murrum surface of roads to macadam, has decreased the dust nuisance to a considerable extent and the continuation of this policy of conversion will be welcome.

The employment of small squads of native children raising the dust in the sanitary lanes and on murrum surfaced roads on the pretext of street cleaning, does not tend to the reduction of the dust problem.

A main outfall drain to Nairobi river to collect and dispose of the sullage from existing private drains on the Cordeiro estate is urgently required, together with the making up and levelling of the sanitary lanes.

FACTORY SITES.

The roads in this area are kept in a fair condition, but here again in common with the majority of the other areas, the drainage is very unsatisfactory. The main concrete open drain along Commercial street has been the cause of many complaints.

Existing buildings on the offensive factory sites are used for hide scraping and drying, bone boiling, artificial manure manufacture and soap making. This latter trade uses in each instance the cold process which if conducted properly could be excluded from the offensive schedule.

It appears a common belief that because a trade is offensive and located on the offensive factory sites nothing need be done to reduce nuisances and carry on business in as inoffensive manner as possible.

With the exception of one or two buildings erected during the past two or three years, the sheds and other premises are far from satisfactory and the time has arrived when the standard demanded for this class of trade should be raised, but any increase of the standard will be difficult to maintain without efficient drainage.

In the inoffensive factory sites, many wood and iron premises are also kept in an unsatisfactory state, more notably those used in connection with the timber and firewood trade but as construction of these premises took place many years ago, action can only be taken when the general condition becomes a nuisance or menace to health.

The premises occupied by the oil companies are kept in exceptionally good order.

During 1933, the only notable building erected in this locality was a cement factory. This factory is used for the grinding, storing and packing of cement, the clinker being imported. About 40 natives are employed at this factory in addition to two Europeans.

THE HILL AREA.

The Hill district is essentially residential, the number of trading plots being almost negligible.

The increased number of houses being built in this area points to its growing popularity for residential purposes.

Owing to the difficulty of drainage, a large portion of the Upper Hill Estate is likely to remain an open space for some time. This area is very flat and unfortunately composed of black cotton soil, thus a definite drainage and sewerage scheme is needed before extensive building can take place if healthy conditions are to be maintained.

During the seasons of rain, these black soil flats soon become quagmires, the flat nature of the ground not permitting even the surface water to be carried away and in consequence the disposal of house sullage is almost impossible.

Should this district be built on extensively, it will be necessary to extend the conservancy services to deal with the night soil as even pits are out of the question owing to the character of the soil and this will open up the question of the formation of depots for the collection of buckets, the contents of which could be transported to the present trenching grounds or a nearer site could be chosen for the disposal.

The large modern Government Laboratory building was erected in this area in 1931.

KILIMANI AND THOMPSON ESTATE.

These districts like the Hill have their unsuitable building plots, but the major portion is excellent building land.

The Hill, Kilimani and Thompson Estate are approached by the Ngong road which is macadamised for about 3½ miles from the centre of the town, the other roads are surfaced with murrum which are kept in a good state of repair considering the volume of traffic which passes over them.

Certain portions of Thompson Estate have deep red soil similar to Muthaiga and the drainage is simple and effective.

Eleven new premises were built in this district during the year, two of them being business premises on recognized trading sites, both these shops were reconstructions, one due to pressure from this department.

MUTHAIGA.

A large proportion of the available land has now been developed in this locality and many good type residences have been erected.

The soil generally is good and drainage has presented no difficulties.

Nuisances and complaints of a sanitary nature have been negligible.

The main road running through the district as well as the main roads to Limuru and Kiambu are macadamised, the remaining roads being surfaced with murrum, however there is little dust nuisance.

Both the Mathari and Getathuru rivers run through various plots in this estate and while much has been done by owners and occupiers in keeping their particular banks clear, swampy areas still exist and are potential mosquito breeding places.

There is no conservancy service in connection with Muthaiga but as the plots are large and the soil is good, no difficulty is experienced with the efficiency of septic tanks.

PARKLANDS AND WESTLANDS.

This area is served by good roads, most of the main access roads being macadamised, recent additions to the alteration of surface from murrum to macadam include, Davidson road, Church road, School lane and portions of 2nd and 3rd Avenues.

A considerable amount of house construction has taken place during the year, 60 plans for new premises and alterations and additions to existing premises were dealt with.

With the exception of Marlborough estate, conservancy services can now be obtained practically anywhere in this area. The soil in many of the outlying parts of the district is suitable for the installation of septic tanks, the plots being of reasonable size. 60 septic tanks have been installed in the district during the past two years, making a total of approximately 200.

In six cases, repairs or alterations to existing installations with increased subsoil irrigation were found to be necessary.

In parts of this district, more especially the portion bounded by Sclaters road, Kikuyu road and Salisbury road and also that portion immediately beyond the junction of Sclaters and Salisbury roads, great difficulty is experienced in disposing of sullage and storm water on account of the lack of fall of the ground and the character of the soil.

FOREST ROAD AREA.

This district has now to all intents and purposes been completely built over during the last three years with good type Asiatic dwellings in permanent material. This area is drained by open concrete drains which enter earth drains running into the anti-malarial canal in the City Park; whilst the concrete drains are in good condition, the earth drains become foul and leave much to be desired.

The eastern side of Fort Hall road has developed considerably during the past two years and owing to the flatness of the ground and the character of the soil, a scheme of drainage is very urgently needed to serve this area. The roadside drains at present receive sullage and as these drains are not constructed in permanent material, they cannot be kept correctly graded and as a consequence, serious nuisances exist which cannot be abated until the drains have been properly constructed.

Until such time as a drainage system has been installed, further building in this particular area should not be permitted.

The sanitation of this district is of necessity served by conservancy on account of the character of the soil.

NGARA ROAD AREA.

A large proportion of the remainder of this estate has been developed during the past three years, the dwellings mostly being of permanent material, detached and of good Asiatic type.

Chambers road and the whole of Ngara road has been macadamised.

The plots are generally of insufficient size to instal septic tanks and only two exist in the neighbourhood the rest of the area being served by conservancy.

EASTLEIGH.

This large and thinly populated area on the outskirts of the Municipality continues to be the site of many nuisances. The absence of made roads and drains and the unsuitable character of the soil in this district, has led to the rejection of building plans, and this state of affairs will apparently continue until a suitable drainage system has been instituted.

The absence of a direct road from this area to the vicinity of the refuse destructor and the trenching grounds, has hindered the extension of the conservancy and refuse collection services.

Most of the area is unsuitable for pit latrines and many nuisances are caused by the pail contents and household garbage being thrown indiscriminately over the veldt, the major part of the remaining nuisances is caused by sullage water not being absorbed by the soil but pooling in the nearest holes.

NATIVE LOCATIONS.

Little alteration can be reported in the sanitary state of the native locations during the past year.

The drainage of Pangani is of the crudest type, there being no drainage system for this village.

A very large proportion of the houses in this village have pit latrines and in addition there are two native type bucket latrines of 12 units each, the urine from these conveniences running into shallow pits.

For some time negotiations have been carried on with a view to the evacuation of this village, but so far these negotiations have not attained the desired object.

The drainage of the native village of Pumwani is of a better type than that of Pangani, open concrete drains take the storm water, the bath waste, house sullage and effluent (or more correctly the overflow) from the tanks in connection with the latrines, to the Nairobi river.

There are 9 flushing type trough latrines in this village, but they are far from satisfactory.

Water for flushing purposes is taken from the Nairobi river not far from the sewer outfall, by means of a ram which pumps this liquid sewage into storage tanks, the water then being distributed to each latrine which has two 40 gallon tanks for flushing.

Each latrine has two concrete pits and as the sewage reaches a certain level it passes through holes and escapes into the open concrete drain which discharges into the river. These pits have to be periodically emptied.

During a drought when the water in the river is too low to permit the ram working, the storage tanks are fed by a ½ inch pipe taken from the main running through the location. Plans and estimates for constructing a closed drainage system at Pumwani have been presented but the work has not been put into operation.

The drainage of the Government African housing scheme consists of a poor type of loose agricultural drain which does not function in time of rain.

This area has an underground sewerage system which has not been connected up with the latrines.

The latrines are of bucket type, no proper drains being provided, thus the urine and the washings pass over the ground and may if of sufficient volume find their way to the main drain.

The drainage of the Municipal native housing scheme comprises open concrete drains leading the bath water, sullage, etc., into the roadside drain on Racecourse road, this water eventually reaches the Nairobi river after wandering along the unpaved street drain and passing through some vegetable gardens.

Latrines consisting of 64 bucket type units for men and women exist on this location.

27. SANITARY INSPECTIONS.

Details of the work performed by the inspectorial staff of the Public Health Department will be found in the summary which follows.

As has been explained in another part of this report, the department has been understaffed during the year and in addition various causes have contributed to the working time of the existing staff being much reduced. In consequence there have been no house to house inspections and also the number of inspections in connection with nuisances has been considerably reduced, compared with the previous year. It will be noted, however, that in spite of these limitations, 1,580 defects were remedied.

Potential mosquito breeding places, largely caused by the unauthorised digging of pits for murrum, received special attention.

The number of Statutory notices served was slightly more than last year, being 45 as against 41 and the number of Intimation notices served increased from 114 to 139.

The defects remedied totalled 1,580 which was only a little more than one half of the figure for 1932, but 1,298 of these defects were remedied after verbal intimation only.

SUMMARY OF WORKS PERFORMED.

NUISANCES.

Inspections made to:—	
Dwelling houses	1,824
Restaurants and Eating Houses	651
Laundries	178
Hotels and Bars	119
Offensive Trades	195
Stables and Cattle Sheds	10
Offices and Trade premises	2,682
Public buildings	130
Open spaces, Streets etc.	861
Complaints registered and investigated	39
Defects remedied:—	
Premises dirty or verminous	322
Premises inadequately ventilated or lighted	5
Dwellings without proper water supply	4
Dwellings damp	3
Dwellings unfit for habitation	54

Yards unpaved	40
Rat infestation	10
Dilapidation	5
Latrine accommodation defective	32
Latrine accommodation inadequate	13
Drains, closed water carriage, choked	75
Drains, closed water carriage, defective	15
Drains, open, choked	112
Drains, open, defective	29
Drains absent or inadequate	10
Septic tanks or cesspits defective	12
Septic tanks or cesspits choked	21
Waste water disposal defective or inadequate	28
Soil or waste pipes choked	12
Soil or waste pipes defective	14
Accumulations of refuse	348
Dustbins absent or defective	37
Foodstuffs unprotected against rats	86
Sleeping in kitchens or food stores	29
Mosquito breeding	170
Animals causing nuisance	4
Miscellaneous	90
Defects remedied by verbal intimation	1,298
written intimation	236
statutory notices	46

SEWERAGE CONNECTIONS.

Premises connected to sewer	12
Pail closets, etc. converted into water closets	41
New closets installed to sewer	65

ERECTION AND ALTERATION OF BUILDINGS.

Plans dealt with	323
Inspections made	1,237
Completion certificates issued	212

LICENCING OF TRADE PREMISES.

Inspections made	663
Reinspections made	181

INFECTIOUS DISEASES.

Cases investigated	5
Inspections made	4
Rooms disinfected	268
Articles disinfected	8
Second hand clothing inspected	42

RATS.

Number destroyed	22,530

NOTICES SERVED.

Public Health Ordinance:—	
Nuisances, Section 119	6
Cleansing and disinfecting, Section 23	4

Municipal By-laws:—

Cleansing plots, By-law 499	12
Inadequate latrine accommodation, By-law 510	4
Connecting drains to sewers, By-laws 484, 486	14
Others, By-laws 509, 513, 518, 510	5

Intimation notices:—

Number sent	139
Prosecutions and convictions	4

28. LIQUOR LICENCES.

There were twenty seven retail licences issued by the Nairobi Liquor Licencing Court for the year 1933, of these seven were in connection with hotels, three in connection with theatres and two in connection with restaurants.

Seven hotel, two restaurant and two club licences were issued in addition to ten licences for the wholesale sale of liquor and twenty-seven wine merchants and grocers licences.

The sanitation of licenced premises receives special attention from the Public Health Department.

29. FOOD CONTROL.

GENERAL

The continued depression has been the reason for financially embarrassed traders not bringing their premises up to a desirable standard.

Small repairs, cleansing and minor alterations are all that can be expected and demanded at the present time. Several shopkeepers in the Bazaar could not carry out the essential minimum requirements during the year with the result that a number of premises had to be vacated.

It is hoped that during the coming year, the financial depression will not be so acute and that it will be possible to record a more desirable and higher standard in connection with premises dealing with foodstuffs.

The remarks about food premises made under this section of the report do not include those situated in the native locations, as these are not governed by the same by-laws.

In the case of all premises where food is stored, sold or prepared, special attention is given by the inspector to the possible contamination by rats and other vermin, but the total elimination of rats from certain areas cannot be hoped for on account of the unsatisfactory state of the existing buildings.

The matter of sanitary improvement is in every case a financial question and necessarily must be a gradual process depending on education and availability of money.

During 1933, 3,256 inspections were carried out in connection with premises subject to control under special by-laws

MARKETS.

The new Municipal Market, situated in Stewart street, which was erected and opened last year, functioned satisfactorily and is a great sanitary improvement over the former Jevanjee market which has now been demolished.

The building of this modern structure has had a stimulating effect upon building in the immediate vicinity, several commercial buildings having been erected in Stewart street somewhat to the detriment of the letting of the market stalls.

The Native Market off Racecourse road was inspected daily and found with minor exceptions to have been kept in a reasonably satisfactory sanitary condition.

Butchers Shops.

During the year 19 butchers shops were registered, 6 being European and 13 Asiatic compared with 21 in 1932.

All these shops now conform to the minimum requirements for this trade although only the European shops can be said to have attained a desirable standard.

The remarks mentioned above concerning depression and inability to modernize buildings on account of financial embarrassment applies more particularly to this important food trade.

It is encouraging to note that one or two European shops are of excellent design and leave nothing to be desired.

Frequent inspections have established the fact that these premises generally are kept in a reasonably good condition.

In one case, an Asiatic butcher was cautioned against the delivery of meat from Ngong which had not been examined, the caution being apparently effectual.

Bakeries.

Five European and five Asiatic bakeries were licenced during the year.

These premises have been kept in a fairly good sanitary condition, although it is difficult to keep free from dust, corrugated iron buildings and buildings of rough stone or concrete blocks, especially where the roof principles and other timbers are exposed, the burning of wood fuel also militates against the reduction of dust.

Simplicity of design with a minimum of dust collecting projections and corners, is the standard to be strived for and there is hope that in the future, this standard may be arrived at by a certain number of the bakeries in Nairobi.

The condition of the premises generally has been good, two wood and iron premises have been closed during the past three years, a new stone bakery has been erected in Ngara Road and improvements have been carried out to a European bakery in Victoria Street.

One European bakery is now using small covered hand carts for the delivery of bread, a method of delivery which could profitably be copied by others.

Fishmongers.

Nine European and two Asiatic licences were issued during the year.

These traders are usually vendors of other foods principally meat or vegetables, the fish being kept separate from the other foods.

In cases where the sale of fish is the main trade, construction of premises is required permitting of complete and thorough washing of the shop and furniture.

The majority of fishmongers carry little stock over from day to day but rely on the almost daily supply of fish to the town.

VEGETABLE SELLERS.

Four European and sixteen Asiatic premises were licenced during 1933 as compared with 22 during 1932.

These traders are still a constant source of nuisances due to the exposing of goods on the footpath with the consequent obstruction and fouling of the path quite apart from the practice leading to the contamination of the food itself by dust and other causes.

The majority of these traders have been required to provide adequate store accommodation, however, all the premises conform to a simple standard which has been in use for some years and are reasonably satisfactory with the exception of some buildings in the Bazaar and River Road areas which are structurally undesirable.

Owing to the continued nuisances caused by this type of trade, there are strong reasons for the segregation of this activity under more stringent regulations.

PROVISION SHOPS.

There has been a decided improvement in the condition of these premises, a greater number having adopted rat-proof types of containers for grains and foodstuffs and also trestles for lifting their stocks off the floor.

The majority of food preparing establishments display their goods in metal, covered, dust-proof receptacles.

MILK SHOPS AND DAIRIES.

Thirty-two registration certificates were issued under " The Milk and Dairies Regulations, 1925," 12 being European and 20 being Asiatic, compared with 26 during the previous year.

In every case the specification of the department has been given effect to, the majority of the premises are built of permanent material and part tiled whilst facilities exist for a constant supply of hot water.

Generally the standard of cleanliness of these premises has been well maintained.

The sale of milk in sealed bottles is increasing in popularity and now four European dairies are delivering milk in small hand carts specially made for carrying bottles.

The native practice of retailing milk in cans and unsatisfactorily stoppered bottles still exists, a most insanitary procedure, as the containers are often exposed to the dusty atmosphere of the Bazaar and River road areas. This highly undesirable practice is difficult to control but undoubtedly will decrease as the public is educated to the importance of a pure milk supply.

A strict supervision is exercised over the production of milk within the Municipality and the distribution of such milk, but obviously a lesser supervision only can be exercised over the milk produced outside the Municipality owing mainly to insufficient staff.

Seventeen samples of milk were analysed of which 9 were genuine, 1 doubtful and 7 adulterated. One conviction was obtained.

346 milk vendors were examined and licenced during the year.

Aerated Water Factories.

Two European and three Asiatic factories were licenced in 1933 and these were maintained in a satisfactory state of cleanliness.

Laundries and Dhobies.

Of the 20 licences issued as compared with 24 for the previous year, 3 were European and 17 Asiatic.

The majority of the dhobies were situated in the Jeevanjee dhobie quarters which have not been kept in a good state of repair.

Restaurants.

Eight European restaurants were in being during the year, two of which were in connection with theatres.

Eatinghouses.

Thirty-two Asiatic and Native eatinghouses were licenced; the majority of these premises were not satisfactory owing to the buildings themselves being unsuitable.

In dealing with this difficult trade, it is essential that the premises should be self-contained and built of permanent material and also preferably connected with the sewer.

TRADE PREMISES SUBJECT TO CONTROL UNDER SPECIAL BY-LAWS.

	1929	1930	1931	1932	1933
Aerated water factories ...	5	5	4	4	5
Bakeries	13	10	13	11	10
Butchers' shops	18	17	21	21	19
Dairies and Milk shops ...	12	20	28	26	32
Fishmongers	10	9	14	15	11
Laundries and dhobies ...	21	23	21	24	20
Restaurants	5	5	6	7	8
Eating houses	34	46	40	40	32
Vegetable dealers ...	19	17	19	22	20

UNSOUND FOOD CONDEMNED.

Bread	...	24 lbs.
Fish	...	1,457 ,,
Fruit	...	7,603 ,,
Provisions	...	827 ,,
Meat	...	3,879 ,,
Vegetables	...	600 ,,
Tinned goods	..	605 ,,
Bottled goods		300 ,,
Poultry	...	213 ,,
Total		15,508 lbs.

30. ABATTOIR.

The new municipal abbatoir built on the site of the former municipal landhies, which is a modern structure constructed on up-to-date lines, was put into use in November, 1932.

It has a by-products plant in close proximity which obtains its power from steam generated in the adjoining refuse destructor.

This abattoir superseded the former slaughterhous situated on Race-course Road, which was erected about 1906 and which had become entirely unsuited to the present needs of the town.

Previous to 1925, the inspection of meat was carried out under the supervision of the Veterinary Department but subsequent to that date it has been carried out under the direction of the local health authority.

Some idea of the growth of the town may be gained by comparing the figures of the number of oxen slaughtered. In 1923 approximately 800 oxen were killed monthly, whereas in 1933 an average of nearly 1,400 were slaughtered per month; an increase of 75%.

It is interesting to note that the effective kill of oxen, that is the number passed for consumption or in other words, the beef consumption, has increased from the average monthly figure for 1930 of 858, to 1,072 for 1933; the increase for 1931 over the previous year being an average of 32 beasts per month, for 1932, 8 beasts per month and the increase for 1933 over 1932 was an average of 74 beasts per month.

It is difficult to explain this large increase during 1933 which occurred in spite of a fall in the population, and one can only assume that more Natives are including this food in their diet or else are eating a larger amount.

The number of calves passed for consumption has increased from an average of 20 a month in 1930 to 32 a month for 1933.

The number of sheep passed has decreased from an average of 784 a month during 1930 to 639 a month for 1933.

The number of goats passed for consumption has materially increased from an average of 1,552 a month in 1930 to 1,660 a month in 1933.

There has also been an increase in the average number of pigs passed for consumption during the past four years, the figure for 1930 being 123 a month whilst the corresponding figure for 1933 was 149.

As heretofore, the principal cause of condemnation in oxen was infection with cysticercus bovis, the large total of 15.6% being rejected for this cause.

Tables are shown giving the numbers and percentages of condemnations under this heading for the types of oxen.

The number of oxen condemned for all causes amounted to 3,024 or 19.0% of the total slaughtered.

Next to cysticercus, the greatest number of oxen rejected for any one cause was 244 from dropsy.

111 oxen were condemned for being in a fevered condition and 57 were suffering from jaundice, 37 were rejected for redwater, 15 for emaciation, 13 for East Coast fever, 11 for tuberculosis and 23 for septic conditions.

Of the calves, 125 or 24.1% of the inspections were rejected, the great majority, namely 116, being condemned for cysticercus.

Only 38 sheep or 0.49% of the number slaughtered were condemned, this number included 10 for being fevered, 8 for jaundice and 14 for septic conditions.

908 goats or 4.35% of the kill failed to pass the examination, the majority namely 564 of the rejections were on account of heartwater, the next principal cause was for being fevered when 214 were condemned.

The small percentage of 0.88 of pigs were rejected, the main cause being cysticercus cellulosae which accounted for 7 out of the 16 carcasses condemned.

The number of grade oxen slaughtered has progressively decreased during the past seven years from a total of 5,634 in 1927 to 2,924 in 1933, a reduction of almost 50% although the total number of oxen killed during that period increased by a similar percentage from 10,812 in 1927 to 15,892 in 1933.

The percentage of oxen condemned for cysticercus bovis has increased during the past four years, in the case of grade beasts from 6.5 to 11.1 and in the case of native beasts from 9.4 to 16.6, the percentage for total oxen having increased from 8.3 to 15.6.

The estimated weight of total meat condemned reached the high figure of 1,311,685 pounds, as compared with 1,092,831 pounds for 1932.

All this meat was put through the by-products plant with a wastage of 63.9% by weight resulting in the production of 473,124 pounds of product consisting of 41.5 tons of fat, 126.9 tons of meat and bone meal and 42.7 tons of blood meal in addition to hoof and horn meal.

New stamps have been introduced into the abattoir in connection with meat marking so as to differentiate between grade and native animals and also between first and second quality meat.

INSPECTIONS.

1933.	Number of carcasses Inspected.	Condemned	Perc'tage of carcasses condemned.
Oxen, Grade ...	2,924	399	13.64
Native ...	12,968	2,625	20.24
Total ...	15,892	3,024	19.02
Calves	518	125	24.13
Sheep	7,710	38	0.49
Goats	20,835	908	4.35
Pigs	1,802	16	0.88
Total ...	46,757	4,111	48.79

ORGANS CONDEMNED APART FROM CARCASSES.

Hearts ...	5,851
Tongues ...	4,009
Kidneys ...	12,149
Livers ...	16,752
Other ...	36,874
Total ...	75,635

ESTIMATED WEIGHT OF TOTAL MEAT CONDEMNED.

Beef	...	1,239,175 lbs.
Veal	...	14,343 lbs.
Mutton	...	8,083 lbs.
Goat	...	44,715 lbs.
Pork	...	5,369 lbs.
Total	...	1,311,685 lbs.

CONDITIONS NECESSITATING CONDEMNATIONS.

	Oxen. Grade.	Oxen. Native.	Calves.	Sheep.	Goats.	Pigs.	Total.	% of Total.
Anaplasmosis ...	3	8	—	—	—	—	11	0.3
Blackquarter	—	1	—	—	—	—	1	0.0
Bruising	1	2	—	1	2	—	6	0.1
Cysticercus bovis ...	326	2,158	116	—	—	—	2,600	63.2
do. cellulosae ...	—	—	—	—	—	7	7	0.2
Dropsy	33	214	1	—	48	—	296	7.2
East Coast fever ...	—	13	—	—	—	—	13	0.3
Emaciation	1	14	—	—	14	—	29	0.7
Fevered	19	92	4	10	214	3	342	8.3
Heartwater	—	2	—	—	564	—	566	13.8
Jaundice	7	50	2	8	20	—	87	2.1
Lymphadenitis ...	—	1	—	3	—	—	4	0.1
Pleuropneumonia ...	—	3	—	—	1	—	4	0.1
Pleurisy, peritonitis ...	—	3	—	—	—	—	3	0.1
Redwater	1	36	1	—	—	—	38	0.9
Septic conditions ...	6	17	1	14	34	2	74	1.8
Septic pneumonia ...	—	1	—	—	10	—	11	0.3
Toxaemia	—	1	—	—	1	1	3	0.1
Tuberculosis	2	9	—	2	—	3	16	0.4
Total	399	2,625	125	38	908	16	4,111	100.0
Percentage of inspections	13.64	20.24	24.13	0.49	4.35	0.88	8.79	

OXEN SLAUGHTERED AND CONDEMNED FOR ALL CAUSES.

	Grade			Native			Total		
Year	No. killed	No. cond.	% cond.	No. killed	No. cond.	% cond.	No. killed	No. cond.	% cond.
1927 ...	5,634	232	4.1	5,178	335	6.4	10,812	567	5.2
1928 ...	4,907	290	5.9	6,827	480	7.0	11,734	770	6.5
1929 ...	4,151	252	6.0	7,617	762	10.0	11,768	1,014	8.6
1930 ...	4,214	313	7.4	7,243	738	10.1	11,457	1,051	9.1
1931 ...	4,306	471	10.9	9,375	1,318	14.0	13,681	1,789	13.0
1932 ...	3,054	363	11.8	11,044	1,757	15.9	14,098	2,120	15.0
1933 ...	2,924	399	13.6	12,968	2,625	20.2	15,892	3,024	19.3

OXEN SLAUGHTERED AND CONDEMNED FOR "MEASLES."

Year	Grade			Native			Total		
	No killed	No. cond.	% cond.	No. killed	No. cond.	% cond.	No. killed	No. cond.	% cond.
1927 ...	5,634	—	—	5,178	—	—	10,812	490	4.5
1928 ...	4,907	—	—	6,827	—	—	11,734	740	6.3
1929 ...	4,151	—	—	7,617	—	—	11,768	975	8.2
1930 ...	4,214	277	6.5	7,243	683	9.4	11,457	960	8 3
1931 ...	4,306	388	9.0	9,375	1,227	13.0	13,681	1,615	11.8
1932 ...	3,054	321	10.5	11,044	1,568	14.1	14.098	1,889	13.3
1933 ...	2.924	326	11.1	12,968	2,158	16.6	15,892	2,484	15.6

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Medical Officer of Health.

REPORT ON CHILD WELFARE, ANTE-NATAL AND VENEREAL CLINICS, DISPENSARIES AND HOME VISITS.

By Dr. B. P. Darling,

Acting Medical Officer in Charge.

Child Welfare.

The work of this Department has advanced steadily throughout the year and is becoming increasingly popular among the Native section of the population. There still exists a superstition among a small number that when a child shews signs of becoming seriously ill, that is the time to avoid the Health Clinics, to hide the child away and deny its presence in the house to the inquisitive Health Visitor. Fortunately this minority is growing still smaller. It is felt that the confidence of the Native mother has been won and she responds by bringing not only her sick children for treatment at the Dispensaries, but also by regular weekly attendance at the Child Welfare Clinics, where the healthy children are examined and weighed and the earliest symptoms of illness may be detected and treated. To such an extent has the necessity for this weekly inspection been impressed on the mother's mind that on occasions when the mother is unable to come herself she will send two little toddlers on their own, a child of four years of age clasping the hand of her little brother two years her junior.

An impression exists among many people that the native woman is necessarily dirty. The holders of this opinion would be amazed to see the change brought about by the Health Visitors in the women attending the Clinics. They and their children arrive with well scrubbed bodies and spotlessly clean clothes, and those who fall short of this standard are left in no doubt as to the reception they will receive if they again appear in a dirty condition.

Ante-Natal.

Ante-Natal care is a very grave necessity in the life of the Kikuyu woman. In many cases her pelvis is no longer suited to the stress of child bearing owing to distortion caused by generations of bad feeding and cruel weight carrying. The tribal custom of female circumcision also adds very considerably to her difficulties. It is very encouraging the way the women of all tribes are beginning to realise the necessity for ante-natal care, and the attendances at these Clinics continue to mount steadily. There remains, of course, much to be done before the maternal death rate, and that of still-born babies, can be lowered in the Native Reserves.

The Lady Grigg African Maternity Hospital has seven beds only, which are always filled, and on occasions room has had to be found for as many as double that number. The growing popularity of this Hospital would warrant an addition of another twenty beds and is, in fact, an urgent necessity. Already women are returning to have their third child in that Hospital.

Visits of Health Visitors.

Visits to the home by the Health Visitor continue to play a very important part in Child Welfare work. In some instances the Health Visitor is still regarded with grave suspicion, but in the majority of homes her interest is appreciated and understood. It is by means of the house to house visiting that the confidence of the native woman is being won and she prepares to give a trial to the customs of the White People.

It is also in the home where many early cases of sickness are discovered and immediately despatched for treatment.

The Native Dressers and Ayahs have been trained to take over a certain portion of this work—and this they can do efficiently. Their services are also required to act as a stimulant and bring to the Clinic the more lethargic among the patients.

Dispensaries.

The Dispensaries at Pangani, Pumwani and the K.U.R. Landhies still continue to do good work.

Throughout the year whooping cough has been very prevalent and new cases are still met with. An epidemic of measles appeared during the months of September, October and November, but this has quietened down now.

There has been a larger number of septic cases treated this year than in any previous one, making the Dispensary work unusually heavy.

Infant Mortality Rate.

The benefit derived from the Child Welfare Clinics may be shewn by the Infant Mortality Rate among Clinic patients.

Pumwani	...	...	...	2.0%
Pangani	...	...	...	3.2%
Railway Landhies		...	...	4.1%

The Railway Landhies has the largest figures owing to the character of its population. These people are mainly Kavirondos who after a few months in Nairobi are returned to Kisumu for a certain period of time. Thus it frequently happens a sick child has to undertake the journey and treatment is interrupted. For the same reason epidemic diseases have very little chance of dying down, as fresh families are continually arriving and becoming infected.

Sewing Class.

Early in the year a sewing-class was instituted at the K.U.R. Landhies, and received instant approval from the mothers. They attend regularly and have done some very good work, making clothes for themselves and their children.

Venereal Disease.

During the year there has been a marked decrease in attendances of women at V. D. Clinics; the average attendance at each Clinic for 1932 being 19.5, and for 1933, 12.5. This decrease took place in January of this year and maintained approximately the same level throughout the year.

Among children the attendances show a very slight increase over those of last year, the cases being mainly of Yaws.

Gonorrhoea, unfortunately, remains untreated in the female. It has not yet proved possible to surmount the intense opposition to vaginal treatment. The women fear that this will cause sterility and after once submitting are never seen again. It is only by education that this difficulty will be overcome.

STAFF.

The Child Welfare Department had the misfortune to lose the services of Dr. M. M. Shaw at the end of March. Dr. Shaw was the first Medical Officer appointed to this post, and it is due in part to her great keenness that this work has developed so well.

Dr. Joyce M. Lister was appointed Medical Officer and took over on April 1st. On August 14th, Dr. Lister was transferred to Mombasa during the absence of the Medical Officer in charge there.

The Health Visitors, Miss R. K. Sharp and Miss E. M. Buncle, have continued their work throughout the year.

THE NATIVE STAFF.

The staff has received the addition of one female dresser. This addition was occasioned by the marked increase in work at the K.U.R. Landhies.

PREMISES.

The Municipal Council are kindly making some alterations to the Clinic building in Pangani, which will add considerably to the comfort of working conditions. Also a car shelter at Pangani and Pumwani are in the process of being added. At the K.U.R. Landhies, owing to the kindness of the General Manager, the large waiting-room has been ceiled and a cupboard added.

SUMMARY OF ATTENDANCES.

CHILD WELFARE CLINICS. Total attendances = 11,448.

An *increase* of *3,525* over the preceding year.

ANTE-NATAL CLINICS. Total attendances = 1,958.

An *increase* of *332* over the preceding year.

DISPENSARIES. Total attendances = 19,861.

A *decrease* of *3,455* below the preceding year.

This decrease in attendances is due to the result of the visits made by the Health Visitors, and also partly to the fact that adult male patients are encouraged to attend at the General Dispensary. It has been shown that early cases of sickness, particularly among children, are seen in the home by the Health Visitor and brought immediately to the Dispensary for treatment. The number of attendances are thus halved by early treatment of the case.

HOME VISITS BY HEALTH VISITORS.

Total visits = 4,373.

An *increase* of *737* over the preceding year.

These figures do not include the visits made by the male and female Dressers. These visits are of invaluable assistance to the Health Visitor, as lack of time does not allow her to make them herself. The number of visits made by the Native staff average 240 per month for the year.

VENEREAL DISEASE CLINICS.

Total attendances = 2,889.

A *decrease* of *1,330* below the preceding year.

This decrease in attendances has maintained a steady level throughout the year, and may be due to various causes, probably the main one being the reduction in the number of Natives in the Municipality, other probable causes being the energetic treatment meted out in recent years and the decrease of first infections.

CHILD WELFARE CLINICS.

	Pumwani.	Pangani.	K.U.R. Landhies.	Total.
Clinics held	48	51	51	150
Attendances	3,688	2,226	5,534	11,448

ANTE-NATAL CLINICS.

	K.U.R. Landhies.	Pangani	Lady Grigg African Maternity Hosp.	Total.
Clinics held	51	50	50	151
Attendances	940	108	910	1,958

VENEREAL CLINICS.

		Syphilis.		Yaws.		
		Attend.	New cases.	Attend.	New cases.	Total Attend.
Health Office—Women ...		131	25	79	34	269
Children ...		1	1	44	22	68
Total ...		132	26	123	56	337
Pumwani— Women ...		944	119	236	46	1,345
Children ...		15	5	52	19	91
Total ...		959	124	288	65	1,436
Pangani— Women ...		403	57	204	32	696
Children ...		23	4	54	12	93
Total ...		426	61	258	44	789
K.U.R. Landhies—Women ...		449	96	110	39	694
Children ...		10	1	124	41	176
Total ...		459	97	234	80	870
Total— Women ...		1,927	297	629	151	3,004
Children ...		49	11	274	94	428
Total ...		1,976	308	903	245	3,432

DISPENSARIES.

	Pumwani.	Pangani.	K.U.R. Landhies.	Total.
Men	1,520	—	—	1,520
Women	1,870	1,031	1,852	4,753
Children	3,342	1,593	8,653	13,588
Total	6,732	2,624	10,505	19,861

HOME VISITS BY HEALTH VISITORS.

In connection with.	Pumwani.	Pangani.	K.U.R. Landhies.	Total.
Child welfare	401	309	2,237	2,947
Ante-natal	—	19	488	507
Venereal disease ...	81	14	190	285
Sick	47	25	562	634
Total	529	367	3,477	4,373

COMPARISON OF ATTENDANCES AND VISITS FOR 6 YEARS.

Attendances.	1928	1929	1930	1931	1932	1933
Child Welfare clinics	2,100	3,110	3,822	5,574	7,923	11,448
Venereal clinics ...	1,720	2,179	2,725	3,123	4,219	3,432
Dispensaries	13,933	2,794	7,988	23,413	23,316	19,861
Ante-natal clinics ...	—	—	118	991	1,626	1,958
Total attendances ...	17,852	8,083	14,653	33,101	37,085	36,699
Home visits	—	2,486	5,849	7,554	3,646	4,373

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Acting Medical Officer in charge.