

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

### **Contributors**

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Nairobi Municipality  
Kenya.

EIGHTH  
ANNUAL REPORT  
OF THE  
Medical Officer of Health.

1936

Ackd.  
6.4.37



*MUNICIPALITY OF NAIROBI*  
*Kenya Colony.*

*With the Compliments*  
*of*  
*The Medical Officer of Health.*

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





Nairobi Municipality  
Kenya.

EIGHTH  
ANNUAL REPORT  
OF THE  
Medical Officer of Health.

1936





National Medical Society  
Kenya

With the Cooperation of

EIGHTH  
The Medical Officers of Health  
ANNUAL REPORT


OF THE  
Medical Officers of Health

1950

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Town Hall,  
Nairobi,  
February 27th, 1937.

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 1936, as required by "The Local Government (Municipalities) Ordinance, 1928," "The Medical Officers of Health Rules, 1929," Sec. 2 (12)d.

I am, Gentlemen,

Your obedient servant,

H. W. TILLING,

M.R.C.S., L.R.C.P., D.P.H.,

Medical Officer of Health.

### 1. GENERAL.

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

The office of the public health department is now situated in the Town Hall recently built in the City Square.

No new legislation of a health nature has been passed during the year.

The only alteration made in the number of personnel of the public health department has been the temporary appointment of a Health Visitor in consequence of the opening of the Indian Child Welfare Clinic. One new appointment of Sanitary Inspector was made to fill a vacancy due to resignation.

The annual expenditure of the department for 1936 showed an increase of £1,989 compared with that for 1935. This is accounted for by the expenditure in connection with the Clinics which were taken over in the last quarter of 1935.

The total amount expended during the year was £9,219 of which the Government by grants made on account of public health contributed £4,511, leaving £4,708 to be borne by the Council.

In addition the Indian Clinic was built and equipped involving a capital expenditure of £359 of which the Government contributed one half.

The rainfall for the year was again disappointing, 1936 being the fourth consecutive year with rainfall below the average. The deficiency for the year amounted to 13.6% whilst the deficiencies for the three preceding years were 12.6%, 35.3%, and 36.6% respectively.

Only three months, namely, January, February, and June, recorded rainfalls over the average. One feature of the rainfall was the absence of long spells of dry weather. Although the rainfall was below the average the number of days of rain was above the average and they were so distributed that the longest spell without rain was 25 days occurring in July, the next longest being 14 days during January-February. The longest period in 1935 without rain was 46 days.

The estimated population of the Municipality for 1936 shows a slight decrease of 430 compared with 1935, the decrease concerning the Asiatic population only. The estimated figure for Natives remained stationary,



whilst that for Europeans increased to the extent of 70. In the absence of another census these figures must be regarded as approximate only.

There was an increase in the number of births among residents notified during the year. The birth rate, although low, shows some improvement compared with 1935.

The percentage of stillbirths to total births during 1936 was decreased from 9.4% to 6.4% in the case of residents, whilst the rate for non-residents was increased from 6.1% to 11.9%.

The natural increase, that is to say, the excess of births over deaths, in the case of Europeans reached a rate of 5.0 per thousand persons, for Asiatics 0.8 per thousand persons, whilst for Natives there was an adverse rate of 5.7 per thousand persons, the excess of deaths over births being 156.

The year under review was not a healthy one as far as Nairobi was concerned, the crude death rate increased from 19.7 to 23.2 per thousand persons, whilst the recorded death rate increased from 13.9 to 15.9.

The death rate for Europeans amounted to 8.9 per thousand persons compared with 6.1 for 1935 whilst the rate for Asiatics and Natives was 16.1 and 17.3 respectively per thousand persons compared with 12.2 and 16.4 for the previous year.

The infant mortality rate among Europeans may be regarded as satisfactory with 51 deaths per 1,000 births when compared with 57 for England and Wales although the small numbers involved make comparison somewhat unreliable.

The infant mortality rate among Asiatics reached the high figure of 518 deaths per 1,000 births, that is over one half of the children born alive died within the first year. The rate for British India is 187.

The rate for Natives, although not so high as for Asiatics, is very much greater than in other places in Africa from which records are available.

The following table comparing vital statistics of various countries and towns is of interest.

It will be noted that in comparison the birth rates of both Europeans and non-Europeans for Nairobi is low, the former the lowest and the latter the lowest but one of the figures quoted.

The death rates for Nairobi take about a middle position in the list.

The infant mortality rate for Europeans in Nairobi also takes a median position of those quoted but the non-European infant mortality rate is the highest of the list and is somewhat startling in its proportions.

#### COMPARISON OF VITAL STATISTICS.

	Year.	Birth rates per 1,000 population.		Death rates per 1,000 population.		Infant mortality rates per 1,000 births.	
		Europ.	Non- Europ.	Europ.	Non- Europ.	Europ.	Non- Europ.
England & Wales ...	1935 ...	14.7	—	11.7	—	57	—
British India ...	1934 ...	—	34	—	25	—	187
Lagos ...	1935 ...	—	26.3	—	13.9	—	129
Penang ...	1935 ...	49.1	36.5	—	19.7	31	148
Pretoria ...	1935-6 ...	22.9	12.4	9.8	14.9	77	374
Pietermaritzburg ...	1935-6 ...	17.2	21.1	8.2	14.8	22	—
Bloemfontein ...	1935-6 ...	18.2	25.4	7.8	27.6	64	390
Cape Town ...	1935-6 ...	18.0	45.7	10.6	22.6	45	145
Port Elizabeth ...	1935-6 ...	28.3	53.5	10.8	37.6	61	—
Kimberley ...	1935-6 ...	19.7	28.8	10.9	—	91	—
Durban ...	1935-6 ...	16.5	—	8.8	—	40	—
<b>NAIROBI ...</b>	<b>1936 ...</b>	<b>13.9</b>	<b>13.7</b>	<b>8.9</b>	<b>16.9</b>	<b>51</b>	<b>479</b>



Excluding malaria, the number of infectious diseases notified totalled 176 compared with 149 for last year, the increase being mainly concerned with tuberculosis, cerebrospinal meningitis, tropical typhus, and plague.

Municipal patient days in hospital increased from 1,989 to 4,046 for tuberculosis, from 627 to 1,478 for measles, and from 192 to 513 for whooping cough, whilst the number of patient days decreased for leprosy, chicken-pox, typhoid fever, and cerebrospinal meningitis. The total number of patient days amounted to 9,765 compared with 7,882 for 1935.

Malaria was notified in 1,000 instances during the year. Of these 902 were resident and 98 non-resident, compared with 3,500 resident and 449 non-resident notifications during last year.

The epidemic of 1935 was not continued into this year. During 1936, there was a peak of incidence in June with a recession in April and from the peak the incidence dropped rapidly to July, then declined less rapidly to November, thus following the rainfall by a period of about two months.

Anti-malaria work was carried out throughout the year consisting of straightening and clearing the many streams within the Municipality, attention to the concrete canals and oiling of breeding places, 9,320 gallons of oil mixture being used for this purpose. In addition 400 gallons of pyrethrum fluid for spraying was issued in order to deal with adult mosquitoes in houses.

More especially during the middle of the year, a plague of field rats was experienced through the Municipality necessitating special precautions being taken regarding the clearing of land and the reduction of harbouring places.

A record number of 32,859 rats were trapped in the commercial area, the greatest number being caught in the months of October and July when 3,343 and 3,298 were killed respectively.

Towards the latter half of the year there was a marked diminution in the yield of the springs in connection with the town's water supply resulting in a shortage of water which became somewhat acute in the last months of the year.

Work is proceeding with the new water supply and there is every reason to believe that this new supply will be available during the coming year.

Work in connection with the inspection of meat at the abattoir is still progressively increasing, a total of 54,984 animals being slaughtered during the year, an increase of 8.5% over the number for the previous year. The increase was largely accounted for by the greater number of sheep and goats dealt with.

It is gratifying to note the decrease in the percentage of grade oxen condemned for measles. The highest percentage was in 1934 when 13.2% were condemned for this cause. In 1935 the figure decreased to 10.2%, whilst during 1936 there was a further decrease to 9.4%. The condemnation of native oxen for measles increased to 22.5%, the highest figure yet recorded.

The estimated weight of meat condemned during the year totalled 1,294,962 lb. being an excess of the figure for the previous year.

The question of the submission to a central depot of milk entering the Municipality from unregistered sources not being consigned to registered premises, has been considered and, provided the necessary by-laws are approved, the scheme will probably be put into operation during the coming year.

The report on Child Welfare, Ante-natal and Venereal Clinics, Dispensaries and Home Visits by Dr. E. F. Hartley, the Medical Officer in charge, is appended.



In connection with this report it should be noted that the Government Medical Department hold a weekly male venereal clinic at Pumwani. At this clinic 1,186 new cases were dealt with during the year, the total attendances numbering 3,879.

On June 1st, the Indian Child Welfare Clinic was commenced in a building erected by the Council in the grounds of the Lady Grigg Indian Maternity Hospital. During the six months since inauguration, this Clinic has progressed very well having registered 2,719 attendances at Child Welfare clinics, 786 attendances at Ante-natal clinics and 2,580 attendances at the Dispensary, whilst the staff paid 853 Home visits.

## 2. STAFF.

The establishment of the public health department includes the following staff :—

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

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

### MEDICAL OFFICER OF HEALTH.

Dr. H. W. Tilling continued to carry out the duties throughout the year.

### LADY MEDICAL OFFICER.

Dr. E. F. Hartley carried out the duties of Medical Officer in charge of Child Welfare work throughout the year.

### CHIEF SANITARY INSPECTOR.

This post has been vacant since 1931, the duties having been carried out by Mr. R. C. Forster.

As pointed out previously the filling of this post would facilitate the efficient working of the department considerably, as the work must be carried out to the detriment of the District when undertaken by a District Inspector.

### SANITARY INSPECTORS.

Mr. R. C. Forster and Mr. S. W. White carried out their duties throughout the year.

Mr. D. Mackintosh was away for seven months on overseas leave.

Mr. P. Cairns was appointed to the position from the first of the year, taking the place of Mr. F. G. Ward, who resigned in March, 1935.

### MEAT AND FOOD INSPECTOR.

Mr. A. A. Watts carried out the duties throughout the year.

### HEALTH VISITORS.

Mrs. E. T. Dugmore was posted to Pumwani Clinic, Miss B. B. Pearson to the Railway Landies, and Miss J. Smith to the Municipal Housing Clinic; they carried out the duties throughout the year.

Mrs. A. G. Gibb was posted to the Indian Clinic in June and carried out the duties during the remainder of the year.



## SANITARY OVERSEER.

Mr. T. Bagnall was employed throughout the year mainly on anti-malarial work.

## CLERK.

Whole-time duties were performed by Miss W. W. Harris throughout the year.

## NATIVE STAFF.

The number of boys employed on the office staff comprise one head-boy, who is notice server, and two messengers.

The native staff of the clinics is composed of one male and four female dressers.

One Goanese female dresser is employed at the Indian Clinic.

The number of boys employed on outside work comprise one motor driver, six rat boys, four oiling boys, and one boy to assist in food inspection.

Twenty boys are employed on anti-malarial work; this gang is on the payroll of the engineering department.

## Personnel of Health Department During 1936.

<i>Appointed.</i>		<i>From</i>	<i>To</i>
	MEDICAL OFFICER OF HEALTH.		
5/ 5/30	Dr. H. W. Tilling ... ..	1/ 1/36	31/12/36
	LADY MEDICAL OFFICER.		
23/ 5/35	Dr. E. F. Hartley ... ..	1/ 1/36	31/12/36
	CHIEF SANITARY INSPECTOR.		
	Vacancy.		
	SANITARY INSPECTORS.		
6/ 8/29	Mr. R. C. Forster ... ..	1/ 1/36	31/12/36
15/ 9/31	Mr. D. Mackintosh ... ..	1/ 1/36	31/12/36
26/ 8/33	Mr. S. W. White ... ..	1/ 1/36	31/12/36
1/ 1/36	Mr. P. Cairns ... ..	1/ 1/36	31/12/36
	INSPECTOR OF MEAT AND FOOD.		
1/ 1/29	Mr. A. A. Watts* ... ..	1/ 1/36	31/12/36
	HEALTH VISITORS.		
1/10/35	Mrs. E. T. Dugmore ... ..	1/ 1/36	31/12/36
1/ 1/36	Miss B. B. Pearson ... ..	1/ 1/36	31/12/36
1/ 1/36	Miss J. Smith ... ..	1/ 1/36	31/12/36
4/ 6/36	Mrs. A. G. Gibb ... ..	4/ 6/36	31/12/36
	SANITARY OVERSEER.		
1/ 6/29	Mr. T. Bagnall ... ..	1/ 1/36	31/12/36
	CLERK.		
1/ 7/35	Miss W. W. Harris ... ..	1/ 1/36	31/12/36
	NATIVE STAFF.		
	Dressers ... ..	6	
	Head boy ... ..	1	
	Messengers ... ..	2	
	Motor Driver ... ..	1	
	Rat boys ... ..	6	
	Oiling boys ... ..	4	
	Food inspection ... ..	1	
	Anti-malarial gang ... ..	20	

### 3. EXPENDITURE.

The expenditure of the public health department for the year 1936 amounted to £9,219 of which the Government by grants made on account of public health, contributed £4,511, leaving £4,708 to be borne by the Council.

In addition there was capital expenditure in connection with the building and equipment of the new Indian Clinic, to the extent of £359 of which the Government contributed one half.

Details of the expenditure by the public health department during the year are given under :—

#### EXPENDITURE.

ADMINISTRATION.							£	£
Salaries : M.O.H. and Sanitary Inspectors	...	...	...	...	...	...	3,936	
Clerk	...	...	...	...	...	...	190	
Boys' wages, etc.	...	...	...	...	...	...	74	
Travelling allowances	...	...	...	...	...	...	145	
Passages	...	...	...	...	...	...	106	
Provident Fund	...	...	...	...	...	...	421	
Rent and telephone	...	...	...	...	...	...	338	
Printing and stationery	...	...	...	...	...	...	75	
Sundry expenses	...	...	...	...	...	...	21	
							—	5,306
INFECTIOUS DISEASES PREVENTION.								
Notification fees	...	...	...	...	...	...	114	
Hospital fees	...	...	...	...	...	...	497	
Overseer's salary	...	...	...	...	...	...	350	
Boys' wages, etc.	...	...	...	...	...	...	233	
Oil and stores	...	...	...	...	...	...	364	
Upkeep of lorry	...	...	...	...	...	...	83	
							—	1,641
FOOD INSPECTION.								
Samples, boys' wages, etc.	...	...	...	...	...	...		15
AUXILIARY HEALTH SERVICES.								
Salaries : Lady Medical Officer	...	...	...	...	...	...	602	
Health Visitors	...	...	...	...	...	...	1,077	
Dressers	...	...	...	...	...	...	153	
Infant food	...	...	...	...	...	...	73	
Medical stores	...	...	...	...	...	...	266	
Printing, stationery, telephone	...	...	...	...	...	...	25	
Maintenance of clinics	...	...	...	...	...	...	61	
							—	2,257
Total	...	...	...	...	...	...		9,219
Less Government grants	...	...	...	...	...	...		4,511
Cost to Council	...	...	...	...	...	...		4,708



Comparison of the expenditure with previous years is made in the table following :—

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
1934	6,547	3,273	3,274
1935	7,230	3,703	3,527
1936	9,219	4,511	4,708

It is noted that the expenditure for the year was £1,989 greater than in 1935. This is accounted for by the amount expended in connection with the Clinics, of which only three months' working was shown for 1935; in addition the Provident Fund has been shown in this year's figures.

There being no expenditure under the heading of emergency work during the year, the total expenditure for infectious diseases prevention was less than during 1935.

#### 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 the port of 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 feet to 5,700 feet.

Area of Municipality : 20,712 acres or 32.4 square miles.

#### 5. RAINFALL.

The following rainfall records are from the Hill Station at 5,700 feet.

Month.	RAINFALL.			DAYS OF RAIN.		
	1936.	Average 30 years.		1936.	Average 30 years.	
January	2.05	1.67	8	5		
February	5.53	2.37	13	5		
March	4.51	4.53	7	10		
April	7.34	8.05	20	17		
May	1.86	5.12	11	16		
June	2.49	1.60	11	8		
July	0.10	0.67	3	5		
August	0.77	1.01	7	6		
September	0.61	1.11	6	6		
October	1.53	2.11	9	8		
November	2.84	4.69	18	14		
December	1.24	2.68	6	10		
Annual	30.87	35.61	119	110		



Less than the average amount of rain fell in Nairobi during 1936. This is the fourth consecutive year that rainfall has been below the average. The total for the year amounted to 30.87 inches, the average being 35.61 inches, or a deficiency of 13.6%. The deficiency for 1935, 1934, and 1933 was 12.6%, 35.3%, and 36.6% respectively.

The average monthly rainfall for the year was 2.57 inches against the average over 30 years of 2.97 inches.

The days of rain during 1936 totalled 119 compared with an average of 110, whilst the average fall of rain per rainy day during the year amounted to 0.26 inches compared with the average of 0.32 inches.

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

Season.	1936.	Average 30 years.
Short dry season (January, February) ... ..	7.58	4.04
Long rains (March, April, May) ... ..	13.71	17.70
Long dry season (June to September) ... ..	3.97	4.39
Short rains (October, November, December) ...	5.61	9.48
Annual ... ..	30.87	35.61

It is noted that the short dry season was the only one that registered an increase above the average and that to the extent of 87.6%.

The long rains, long dry season and the short rains were deficient to the extent of 22.5%, 9.5%, and 40.8% respectively.

Only three months during the year, namely January, February, and June recorded a rainfall in excess of the average.

The rainfall during January is usually erratic ranging from nil to a total of 5.06 inches which fell in 1930; the fall during 1936 was 2.05 inches compared with an average of 1.69 inches, an excess of 22.7%.

The fall during February amounted to 5.53 inches against an average of 2.37 inches. This was the third highest record for this month, previous excessive falls occurring in 1912 with 13.93 inches and in 1917 with 6.07 inches.

March with 4.51 inches was very near the average of 4.53 inches.

The fall during April being 7.34 inches was 8.8% below the average.

May with a fall of only 1.86 inches constituted the lowest record for that month with the exception of 1909 when only 78 points fell.

June with a fall of 2.49 inches was 55.6% above the average of 1.60 inches. This is the fifth highest record for this month.

July had the fourth lowest record for that month with a fall of only 0.10 inches. Last year no rain at all fell during July.

August and September had poor rainfalls of 0.77 inches and 0.61 inches respectively compared with averages of 1.01 inches and 1.11 inches.

October with a fall of 1.53 inches was 27.4% below the average, whilst November had the fourth lowest record for the month with 2.84 inches, the average being 4.69 inches.

December had also a very low rainfall being over 50% below the average, the amount registered being only 1.24 inches.



Although the annual rainfall was below the average, the number of rainy days was somewhat more than the average, being 119 compared with 110, thus making the average fall per rainy day 0.26 inches against the average of 0.32 inches.

Although the total rainfall for the year was 13.6% below the average, the days of rain were remarkably well distributed so much so that there were no long spells of dry weather as might be expected.

The longest spell of dry weather occurred in July when there were 25 days without rain; the next longest was in January-February with 14 days. A dry spell of 14 days occurred in March, one of 13 days in August and also August-September, one of 12 days in May-June, and two of 11 days, one in January, and one in October. None of the remaining dry spells exceeded eight days.

#### ANNUAL RAINFALL.

Year.	Inches.	Year.	Inches.	Year.	Inches.
1897	27.5	1911	41.49	1925	27.83
1898	28.1	1912	56.01	1926	33.25
1899	27.5	1913	31.04	1927	24.86
1900	44.3	1914	42.18	1928	28.91
1901	40.7	1915	28.88	1929	36.50
1902	32.9	1916	43.59	1930	58.88
1903	40.7	1917	51.44	1931	39.58
1904	26.9	1918	23.05	1932	39.85
1905	59.3	1919	38.74	1933	22.68
1906	46.7	1920	51.19	1934	23.12
1907	41.98	1921	18.49	1935	31.24
1908	27.90	1922	37.28	1936	30.87
1909	29.02	1923	56.22		
1910	25.64	1924	26.72		

Records for the years 1897 to 1906 are relatively accurate only.

#### 6. POPULATION.

The population of the Municipality of Nairobi for 1936 has been estimated as under :—

Race.	Population.
Europeans	5,600
Asiatics	16,000
Natives and others	28,000
All races	49,600

This total shows a slight decrease compared with 1935 when the total population was estimated at 50,300.

It is estimated the Europeans have increased by 70 or 1.26% and the Asiatics have decreased by 500 or 3.03%. Natives and others have remained stationary.

In the absence of another Census, these figures must be regarded as approximate only.



## 7. MARRIAGES.

The following marriages were celebrated in Nairobi during 1936. The figures are not corrected for persons habitually resident in Nairobi.

European	...	...	...	95
Goan	...	...	...	4
Seychellois	...	...	...	6
Mauritian	...	...	...	3
Native	...	...	...	6
				<hr/>
				114
				<hr/>

## 8. BIRTHS.

During 1933, the Municipal Council passed by-laws entitled "The Nairobi Municipality (Notification of Births) By-Laws, 1933." These by-laws require any birth, whether alive or dead, occurring within the Municipality to be notified within 48 hours, no races being exempt.

These by-laws have now been in force two years and the results are getting more accurate each year. It is estimated that over 80% of the Asiatic and Native births are notified. The statistics obtained from these notifications are set out in the table following:—

### BIRTHS NOTIFIED.

RESIDENT.								NON-RESIDENT.						TOTAL.			
		Births.			Stillborn.					Births.			Stillborn.				
		M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	Births.S.B.			
British	...	39	36	75	1	—	1	26	15	41	—	1	1	116	2		
German	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—		
Danish	...	—	1	1	—	—	—	—	—	—	—	—	—	1	—		
Swedish	...	—	1	1	—	—	—	1	1	2	—	—	—	3	—		
Norwegian	...	—	—	—	—	—	—	1	—	1	—	—	—	1	—		
Greek	...	—	—	—	—	—	—	—	1	1	—	—	—	1	—		
Indian	...	125	95	220	11	11	22	7	11	18	—	1	1	238	23		
Goan	...	24	29	53	—	2	2	1	2	3	—	—	—	56	2		
Japanese	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—		
Seychellois	...	2	—	2	1	—	1	—	—	—	—	—	—	2	1		
Native	...	159	162	321	7	10	17	90	79	169	19	7	26	490	43		
Arab	...	2	3	5	—	—	—	—	—	—	—	—	—	5	—		
Somali	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—		
Nubian	...	—	1	1	—	1	1	—	—	—	—	—	—	1	1		
Total	...	354	328	682	20	24	44	126	109	235	19	9	28	917	72		

### MULTIPLE BIRTHS.

Twins were recorded in one instance among non-resident British, in three instances among resident Asiatics, in six instances among resident Natives and in two instances among non-resident Natives.

The sexes of these multiple births are enumerated below.

### TWINS.

Race.				Resident.	Non-resident.
British	...	...	...		M-M
Indian	...	...	...	F-F	
				F-F	
				M-F	
Native	...	...	...	F-F	F-F
				F-F	M-M
				M-M	
				M-F	
				M-F	
				M-F	
Total	...	...	...	4 F-F 1 M-M 4 M-F	2 M-M 1 F-F

### BIRTH RATES.

It will be noted that Asiatics have the highest birth rate of the different races with 17.0 per thousand of population, Natives have the lowest with 11.8, and Europeans hold the middle position with 13.9. The birth rate for all races for 1936 was 13.7 per thousand of population.

### BIRTH RATES AND NATURAL INCREASE.

Race.		Births.		Rate per 1000 population.		Deaths.		Natural increase. Number. Rate per 1000 population.	
European	...	78	...	13.9	...	50	...	28	5.0
Asiatic	...	273	...	17.0	...	259	...	14	0.8
Native	...	331	...	11.8	...	487	...	-156	-5.7
All races	...	682	...	13.7	...	796	...	-114	-2.3

Owing to the difficulty in obtaining accurate figures for Native births, the total given must be regarded as approximate only.

The low rate for Natives is largely accounted for by the fact that about 88% of the natives within the Municipality are males, their families being left in the Reserves.

### STILLBIRTHS.

The figures relating to stillbirths are given in the tables following.

The difference between the percentage of stillbirths to resident natives and non-resident natives should be noted.

There can be little doubt that the work performed by the Ante-natal Clinics is partly responsible for the large difference.



The proportions of stillbirths to total births for the races were as under :

### RESIDENTS.

Race.				Births.	Stillbirths.			Percentage to births.
European	...	...	...	78	...	1	...	1.2
Goan	...	...	...	53	...	2	...	3.7
Indian	...	...	...	220	...	22	...	10.0
Natives	...	...	...	321	...	17	...	5.2
Others	...	...	...	10	...	2	...	20.0
Total	...	...	...	682	...	44	...	6.4

### NON-RESIDENTS.

Race.				Births.	Stillbirths.			Percentage to births.
European	...	...	...	45	...	1	...	2.2
Goan	...	...	...	3	...	—	...	0.0
Indian	...	...	...	18	...	1	...	5.5
Native	...	...	...	169	...	26	...	15.3
Others	...	...	...	—	...	—	...	—
Total	...	...	...	235	...	28	...	11.9

## 9. DEATHS.

Unless otherwise stated, the following statistics refer to residents of Nairobi only, including the prison population. They have been corrected for outward transfers but not for inward transfers.

Rates have been calculated according to the estimated population for 1936.

The total number of deaths reported in Nairobi during the year was 1,164, equivalent to a crude death rate for all races of 23.29 per thousand persons compared with a rate of 19.78 for 1935.

The number of deaths from all causes among persons stated to be normally resident in Nairobi was 796, equivalent to a recorded death rate for all races of 15.92 per thousand persons, compared with 13.90 for 1935 and 14.86 for 1934.

Of the 796 deaths among residents, 511 were of males and 285 were of females.

294 or 36.9% of the deaths were of infants of one year and under.

50 deaths occurred among Europeans, 28 male and 22 female, equivalent to a rate of 8.92 per thousand persons of that race.

259 deaths occurred among Asiatics, 154 male and 105 female, equivalent to a rate of 16.18 per thousand persons of that race.

487 deaths occurred among Natives and other races, 329 males and 158 females, equivalent to a rate of 17.39 per thousand persons.

## DEATHS BY RACE AND SEX.

		White.	Indian.	Goan.	Native.	Somali.	Sey-chellois.	Arab.	Nubian.	Total.
Resident.	M.	28	144	10	312	9	7	1	—	511
	F.	22	101	4	151	6	—	1	—	285
Total		50	245	14	463	15	7	2	—	796
Non-resident	M.	16	8	—	223	3	—	—	—	250
	F.	11	2	1	101	1	—	—	2	118
Total		27	10	1	324	4	—	—	2	368
TOTAL		77	255	15	787	19	7	2	2	1164

## COMPARISON OF DEATH RATES FOR RACES FOR 11 YEARS.

		European.		Asiatic.		Native.		All Races.
1926	...	13.5	...	30.3	...	17.3	...	20.5
1927	...	13.8	...	29.2	...	16.5	...	18.9
1928	...	12.8	...	23.3	...	16.1	...	17.9
1929	...	8.4	...	17.0	...	13.4	...	13.7
1930	...	11.8	...	20.7	...	15.2	...	16.2
1931	...	4.7	...	14.3	...	15.2	...	13.7
1932	...	5.6	...	13.5	...	10.7	...	11.0
1933	...	7.1	...	14.8	...	15.0	...	14.0
1934	...	8.5	...	15.1	...	15.9	...	14.8
1935	...	6.1	...	12.2	...	16.4	...	13.9
1936	...	8.9	...	16.1	...	17.3	...	15.9

## AVERAGE DEATH RATES.

Race.		10 years' average 1927-36		5 years' average 1927-31		5 years' average 1932-36		1936
European	...	8.7	...	10.3	...	7.2	...	8.9
Asiatic	...	17.6	...	20.9	...	14.3	...	16.1
Native	...	15.1	...	15.2	...	15.0	...	17.3
All Races	...	15.0	...	16.0	...	13.9	...	15.9

It is noted that the European death rate during the past five years has declined by 30.0% below that for the previous five years.

Over a similar period the Asiatic death rate has declined by 31.5% and the Native death rate has declined by 1.3%. The rate for all races has decreased by 13.1%.

The European death rate for 1936 is above that of the average for the past five years to the extent of 1.7 or 23.6%.

The Asiatic death rate for 1936, compared with a similar period, has increased by 1.8 or 12.5%, and the native rate is above the five years' average to the extent of 2.0 or 14.3%.



## MONTHLY INCIDENCE OF DEATHS BY RACE.

Month.	White.	Indian.	Goan.	Native.	Somali.	Other.	Total.	Percentage of total.
January ...	1	14	3	38	1	—	57	7.16
February ...	4	20	—	25	1	2	52	6.53
March ...	3	23	1	32	1	3	63	7.92
April ...	3	25	—	33	2	—	63	7.92
May ...	9	29	1	44	1	1	85	10.68
June ...	5	25	4	42	1	—	77	9.68
July ...	5	25	3	46	1	—	80	10.05
August ...	6	22	—	50	1	1	80	10.05
September ...	4	11	—	52	2	1	70	8.79
October ...	2	13	1	33	—	1	50	6.28
November ...	4	20	—	32	2	—	58	7.29
December ...	4	18	1	36	2	—	61	7.66
Total ...	50	245	14	463	15	9	796	100.00

## DEATHS BY QUARTERS.

	Number of deaths.	Percentage of total.
First quarter ...	172	21.61
Second quarter ...	225	28.27
Third quarter ...	230	28.89
Fourth quarter ...	169	21.23
Total ...	796	100.00

The most deaths occurred in May (85), July (80), August (80), and the fewest in October (50), February (52), January (57).

## CAUSES OF DEATH BY GROUP AND RACE.

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Others.	Total.
1. General diseases ...	6	35	3	96	5	—	145
2. General diseases (not included above)	6	13	—	4	1	1	25
3. Diseases of the nervous system ...	4	10	1	20	—	1	36
4. Diseases of the circulatory system	9	8	—	5	—	1	23
5. Diseases of the respiratory system	10	100	7	214	7	2	340
6. Diseases of the digestive system ...	—	18	1	21	—	—	40
7. Non-venereal diseases of the genito-urinary system and annexa ...	4	4	1	8	—	—	17
8. The puerperal state ...	1	4	—	2	1	—	8
9. Diseases of the skin ...	—	—	—	1	—	—	1
10. Diseases of the bones ...	—	—	—	1	—	—	1
11. Congenital malformations ...	1	3	—	2	—	—	6
12. Diseases of early infancy ...	2	36	1	35	1	1	76
13. Old age ...	1	3	—	3	—	—	7
14. External causes ...	6	3	—	29	—	2	40
15. Ill defined causes ...	—	8	—	22	—	1	31
Total ...	50	245	14	463	15	9	796

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

International cause of death.	Number.	% of of total.	Rate per 1,000 population.
1. General diseases ... ..	145	18.22	2.901
2. General diseases (not included above) ...	25	3.14	0.500
3. Diseases of nervous system ... ..	36	4.52	0.720
4. Diseases of the circulatory system ... ..	23	2.89	0.460
5. Diseases of the respiratory system ... ..	340	42.71	6.803
6. Diseases of the digestive system ... ..	40	5.02	0.800
7. Non-venereal diseases of the genito-urinary system and annexa ... ..	17	2.14	0.340
8. The puerperal state ... ..	8	1.01	0.160
9. Diseases of the skin ... ..	1	0.13	0.020
10. Diseases of the bones ... ..	1	0.13	0.020
11. Congenital malformations ... ..	6	0.75	0.120
12. Diseases of early infancy ... ..	76	9.55	1.520
13. Old age ... ..	7	0.88	0.140
14. External causes ... ..	40	5.02	0.800
15. Ill defined causes ... ..	31	3.89	0.620
Total ... ..	796	100.00	15.924

The order of importance of the groups corresponds substantially with the order given in last year's report.

The figures in brackets in the text relate to the returns for 1935.

As is usual " Diseases of the respiratory system " heads the list as being concerned with the greatest number of deaths.

This group accounted for 340 (267) deaths or 42.7% (38.3%) of the total deaths, equivalent to a rate of 6.80 (5.33) per thousand of population.

Deaths under this heading were:—

Pneumonia ... ..	229 (191)
Broncho-pneumonia ... ..	97 (66)
Bronchitis ... ..	8 (6)
Asthma ... ..	5 (4)
Gangrene of lung ... ..	1

" General diseases " comes next in point of numbers with 145 (165) deaths or 18.2% (23.7%) of the total deaths, the equivalent rate per thousand population being 2.90 (3.29).

Deaths under this group include:

Malaria ... ..	32 (58)	Plague ... ..	5
Syphilis ... ..	23 (15)	Dysentery ... ..	5
Cerebrospinal meningitis ... ..	16 (16)	Influenza ... ..	4 (1)
Tuberculosis ... ..	16 (29)	Erysipelas ... ..	4 (3)
Septicaemia ... ..	13 (7)	Tetanus ... ..	4 (4)
Typhoid fever ... ..	7 (17)	Blackwater fever ... ..	2 (3)
Measles ... ..	6	Diphtheria ... ..	2 (3)
Whooping cough ... ..	6 (1)		

Deaths under the heading of " Diseases of early infancy " totalled 76 (58) or 9.5% (8.3%) of the total deaths, the equivalent rate per thousand of population was 1.52 (1.15).



The causes of death were :—

Marasmus	...	...	...	38	(18)
Prematurity	...	...	...	29	(35)
Asphyxia neonat.	...	...	...	5	(2)
Pulmonary collapse	...	...	...	2	(1)
Cerebral haemorrhage	...	...	...	1	
Intestinal obstruction	...	...	...	1	

The next group in point of numbers is " External causes " which accounted for 40 (46) deaths or 5.0% (6.6%) of the total deaths, with an equivalent rate per thousand population of 0.80 (0.91).

Deaths under this group include :—

Judicial hanging	...	...	13	(10)	Fracture	...	...	...	2	(3)
Road accidents	...	...	11	(11)	Burns	...	...	...	1	(5)
Suicide	...	...	5	(6)	Aeroplane accident	...	...	...	1	
Homicide	...	...	3	(5)	Electrocution	...	...	...	1	(1)
Drowning	...	...	3	(1)						

It should be noted that although the deaths from road accidents are similar in number to last year, the total is high. The deaths from this cause for the past six years have been : 5, 6, 5, 8, 11, and 11 respectively.

" Diseases of the digestive system " accounted for 40 (35) deaths or 5.0% (5.0%) of the total deaths, the equivalent rate per thousand being 0.08 (0.69).

The individual causes were :—

Diarrhoea (under two)	...	...	22	(18)	Ascariasis	...	...	...	1	(1)
Diarrhoea (over two)	...	...	2	(3)	Appendicitis	...	...	...	1	
Intestinal obstruction	...	...	6	(2)	Hypertrophy of liver	...	...	...	1	
Cirrhosis of liver	...	...	2	(3)	Peritonitis	...	...	...	1	(2)
Tonsillitis	...	...	2	(1)	Cellulitis neck	...	...	...	1	
Gastric ulcer	...	...	1	(1)						

" Diseases of the nervous system " was responsible for 36 (39) or 4.5% (5.6%) of the total deaths, with an equivalent rate per thousand population of 0.72 (0.77).

The details were :—

Meningitis	...	...	13	(18)	Cerebral abscess	...	...	...	2	
Convulsions	...	...	4	(4)	Myelitis	...	...	...	1	(2)
Hemiplegia	...	...	4		Cerebral embolism	...	...	...	1	
Cerebral haemorrhage	...	...	4	(8)	Cerebral thrombosis	...	...	...	1	
Encephalitis	...	...	3	(1)	Epilepsy	...	...	...	1	(1)
Cerebral tumour	...	...	2	(1)						

The group of " Ill defined causes " is next in order of numbers with 31 (28) deaths or 3.8% (4.0%) of the total deaths, the equivalent rate per thousand population being 0.62 (0.55).

The recorded causes under this group were :—

Unknown ... ..	18 (20)	Debility ... ..	1
Heart failure ... ..	7 (3)	Coma ... ..	1
Natural causes ... ..	2 (3)	P.U.O. ... ..	1 (1)
Surgical shock ... ..	1		

Group 2 of " General diseases " is next with 25 (16) deaths or 3.1% (2.3%) of the total deaths, making a rate per thousand population of 0.50 (0.32).

The diseases concerned were :—

Cancer ... ..	8 (7)	Alcoholism ... ..	1
Rickets ... ..	5	Parathyroid tetany ... ..	1
Anaemia ... ..	3 (1)	Cretinism ... ..	1
Rheumatism ... ..	2 (1)	Diabetes ... ..	2 (1)
Haemophilia ... ..	1	Neoplasm ... ..	1 (1)

" Diseases of the circulatory system " accounted for 23 (14) deaths or 2.8% (2.0%) of the total deaths; the equivalent rate per thousand population was 0.46 (0.28).

Diseases under this heading include :—

Heart disease ... ..	16 (12)	Aneurysm ... ..	1
Pulmonary embolism ... ..	2	Endocarditis ... ..	1 (1)
Angina pectoris ... ..	2	Pericarditis ... ..	1 (1)

" Non-venereal diseases of the genito-urinary system and annexa " comes next with 17 (11) deaths or 2.1% (1.5%) of the total deaths, with a rate per thousand population of 0.34 (0.22).

The causes of death were :—

Nephritis ... ..	13 (6)	Pyometritis ... ..	1
Pyosalpinx ... ..	1 (2)	Vesico-vaginal fistula ... ..	1
Fibroids uterus ... ..	1 (1)		

" The puerperal state " accounted for 8 (9) or 1.0% (1.2%) of the total deaths, making a rate per thousand population of 0.16 (0.18).

The diseases concerned were :—

Eclampsia ... ..	3 (2)	Caesarean section ... ..	1
Puerperal sepsis ... ..	1 (2)	Placenta praevia ... ..	1
Alba dolens ... ..	1	P.P.H. ... ..	1 (2)

Seven deaths occurred under the group " Old age " compared with four during the previous year.

" Congenital malformations " was responsible for six deaths compared with two during 1935.

The items were :—

Congenital heart disease ... ..	2	Cephalocele ... ..	1
Myelocele ... ..	1	Monstrosity ... ..	1
Anencephaly ... ..	1		

One death occurred under each of the groups " Diseases of the skin " and " Diseases of the bones," the former being due to cellulitis and the latter to septic arthritis.



AGE GROUP DISTRIBUTION OF POPULATION AND  
DEATH BY RACES.  
EUROPEAN.

Age group.	Estimated distribution population.	Estimated population.	Number of deaths.	Deaths % of age group.	Distribution of deaths.
0—1	37.865	212	5	2.35	100.000
2—4	55.548	311	1	0.32	20.000
5—9	81.706	458	2	0.43	40.000
10—14	50.914	285	—	—	—
15—19	45.609	255	—	—	—
20—24	82.743	463	1	0.21	20.000
25—29	124.754	699	1	0.14	20.000
30—34	126.645	709	2	0.14	40.000
35—39	117.864	660	5	0.75	100.000
40—44	94.633	530	7	1.32	140.000
45—49	66.340	372	2	0.53	40.000
50—54	48.692	274	4	1.46	80.000
55—59	29.877	167	5	2.99	100.000
60—64	18.597	104	4	3.84	80.000
65—69	9.268	52	4	7.69	80.000
70—74	5.121	29	2	6.89	40.000
75—79	2.560	14	2	14.28	40.000
80—84	0.914	5	3	60.00	60.000
85—89	0.060	1	—	—	—
90—94	—	—	—	—	—
999.990 ... 5,600 ... 50 ... 0.89 ... 1,000.000					

ASIATIC.

Age group.	Estimated distribution population.	Estimated population.	Number of deaths.	Deaths % of age group.	Distribution of deaths.
0—1	62.319	997	140	14.04	540.540
2—4	93.620	1,498	20	1.33	77.220
5—9	111.620	1,786	11	0.61	42.471
10—14	79.755	1,276	5	0.39	19.305
15—19	91.716	1,467	1	0.06	3.861
20—24	135.989	2,176	5	0.22	19.305
25—29	119.539	1,913	8	0.41	30.888
30—34	99.941	1,599	7	0.43	27.021
35—39	72.306	1,157	14	1.21	54.042
40—44	52.732	844	9	1.06	34.749
45—49	31.982	512	6	1.17	23.166
50—54	20.185	323	13	4.02	50.193
55—59	7.402	118	7	5.93	27.021
60—64	9.164	147	—	—	—
65—69	4.935	79	2	2.53	7.722
70—74	3.313	53	3	5.66	11.583
75—79	1.504	24	1	4.16	3.861
80—84	1.363	22	3	13.63	11.583
85—89	0.258	4	2	50.00	7.722
90—94	0.188	3	1	33.33	3.861
95—99	0.164	2	1	50.00	3.861
999.995 ... 16,000 ... 259 ... 1.61 ... 999.975					

## NATIVE.

Age group.	Estimated distribution population.	Estimated population.	Number of deaths.	Deaths % of age group.	Distribution of deaths.
0—1 ...	Not known	...	150	...	308.008
2—4 ...	"	...	33	...	67.762
5—9 ...	"	...	19	...	39.014
10—14 ...	"	...	14	...	28.747
15—19 ...	"	...	9	...	18.480
20—24* ...	"	...	29	...	59.548
24—29 ...	"	...	119	...	244.353
30—34 ...	"	...	43	...	88.296
35—39 ...	"	...	36	...	73.922
40—44 ...	"	...	4	...	8.213
45—49 ...	"	...	12	...	24.641
50—54 ...	"	...	8	...	16.427
55—59 ...	"	...	4	...	8.213
60—64 ...	"	...	3	...	6.160
65—69 ...	"	...	—	...	—
70—74 ...	"	...	2	...	4.107
74—79 ...	"	...	—	...	—
80—84 ...	"	...	1	...	2.053
85—89 ...	"	...	—	...	—
90—94 ...	"	...	1	...	2.053
95—99 ...	"	...	—	...	—
— ...	28,000	...	487	...	999.997

\* 68 Native deaths recorded as "adults" have been included in the groups 20—39.  
The age group distribution for Nairobi has been taken in the same proportion as the age group distribution for the whole Colony, as published in the report on non-native census taken in 1931.

## CAUSES OF DEATHS.

International causes of deaths.	White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	TOTAL.
Group I. GENERAL DISEASES.								
1. Enteric fever ...	1	2	—	4	—	—	—	7
5. Malaria ...	—	9	—	20	3	—	—	32
7. Measles ...	—	4	—	2	—	—	—	6
9. Whooping cough ...	2	—	1	3	—	—	—	6
10. Diphtheria ...	—	2	—	—	—	—	—	2
11. Influenza ...	—	1	1	2	—	—	—	4
16. Dysentery ...	—	3	—	2	—	—	—	5
17. Plague ...	—	—	—	5	—	—	—	5
21. Erysipelas ...	—	4	—	—	—	—	—	4
24. Cerebrospinal meningitis	1	2	—	13	—	—	—	16
25. Blackwater fever ...	—	2	—	—	—	—	—	2
29. Tetanus ...	—	1	—	3	—	—	—	4
31. Pulmonary tuberculosis ...	1	1	1	7	—	—	—	10
33. Tubercular peritonitis ...	—	1	—	1	—	—	—	2
34. Tuberculosis of spine ...	—	—	—	1	—	—	—	1
36. Tubercular glands ...	—	1	—	—	—	—	—	1
37. Disseminated tuberculosis	—	—	—	2	—	—	—	2
38. Syphilis ...	—	—	—	23	—	—	—	23
41. Septicaemia ...	1	2	—	8	2	—	—	13



## CAUSES OF DEATHS (Continued).

International causes of deaths.			White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	Total.
Group II. GENERAL DISEASES (not included above).										
44.	Cancer of stomach	...	1	1	—	—	—	—	—	2
45.	Intestinal cancer	...	—	1	—	1	—	—	—	2
47.	Cancer of breast	...	—	1	—	—	—	—	—	1
49.	Secondary carcinoma	...	1	—	—	—	—	—	—	1
	Carcinoma of pancreas	...	—	1	—	—	—	—	—	1
	Sarcoma	...	—	—	—	1	—	—	—	1
50.	Neoplasm	...	—	1	—	—	—	—	—	1
51.	Rheumatism	...	—	1	—	—	—	1	—	2
56.	Rickets	...	—	4	—	—	1	—	—	5
57.	Diabetes	...	1	1	—	—	—	—	—	2
58.	Anaemia	...	2	1	—	—	—	—	—	3
60.	Cretinism	...	—	1	—	—	—	—	—	1
61.	Parathyroid tetany	...	—	—	—	1	—	—	—	1
66.	Alcoholism	...	—	—	—	1	—	—	—	1
69.	Haemophilia	...	1	—	—	—	—	—	—	1
Group III. DISEASES OF THE NERVOUS SYSTEM.										
70.	Encephalitis	...	2	1	—	—	—	—	—	3
	Cerebral abscess	...	—	1	—	1	—	—	—	2
71.	Meningitis	...	—	2	—	10	—	1	—	13
73.	Myelitis	...	—	—	—	1	—	—	—	1
74.	Cerebral haemorrhage	...	2	—	—	2	—	—	—	4
	Cerebral embolism	...	—	1	—	—	—	—	—	1
	Cerebral thrombosis	...	—	—	—	1	—	—	—	1
75.	Hemiplegia	...	—	2	1	1	—	—	—	4
78.	Epilepsy	...	—	—	—	1	—	—	—	1
80.	Convulsions	...	—	3	—	1	—	—	—	4
84.	Cerebral tumour	...	—	—	—	2	—	—	—	2
Group IV. DISEASES OF THE CIRCULATORY SYSTEM.										
87.	Pericarditis	...	1	—	—	—	—	—	—	1
88.	Endocarditis	...	—	1	—	—	—	—	—	1
89.	Angina pectoris	...	1	1	—	—	—	—	—	2
90.	Heart disease	...	6	5	—	4	—	1	—	16
91.	Aneurysm	...	—	—	—	1	—	—	—	1
92.	Pulmonary embolism	...	1	1	—	—	—	—	—	2
Group V. DISEASES OF THE RESPIRATORY SYSTEM.										
99.	Bronchitis	...	2	2	1	3	—	—	—	8
100.	Broncho pneumonia	...	1	36	3	55	1	—	1	97
101.	Pneumonia	...	6	59	3	154	6	1	—	229
104.	Gangrene of lung	...	—	—	—	1	—	—	—	1
105.	Asthma	...	1	3	—	1	—	—	—	5
Group VI. DISEASES OF THE DIGESTIVE SYSTEM.										
108.	Cellulitis of neck	...	—	—	—	1	—	—	—	1
109.	Tonsillitis	...	—	1	—	1	—	—	—	2
112.	Gastric ulcer	...	—	—	—	1	—	—	—	1
113.	Diarrhoea (under 2)	...	—	14	1	7	—	—	—	22
114.	Diarrhoea (over 2)	...	—	—	—	2	—	—	—	2
116.	Ascariasis	...	—	—	—	1	—	—	—	1
117.	Appendicitis	...	—	1	—	—	—	—	—	1
118.	Intestinal obstruction	...	—	—	—	6	—	—	—	6
122.	Cirrhosis of liver	...	—	—	—	2	—	—	—	2
124.	Hypertrophy of liver	...	—	1	—	—	—	—	—	1
126.	Peritonitis	...	—	1	—	—	—	—	—	1

## CAUSES OF DEATHS (Continued).

International causes of deaths.			White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	Total.
Group VII. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM.										
128.	Acute nephritis	...	—	—	—	1	—	—	—	1
129.	Chronic nephritis	...	3	3	1	5	—	—	—	12
134.	Vesico-vaginal fistula	...	—	—	—	1	—	—	—	1
138.	Pyosalpinx	...	—	1	—	—	—	—	—	1
139.	Fibroids of uterus	...	1	—	—	—	—	—	—	1
141.	Pyometritis	...	—	—	—	1	—	—	—	1
Group VIII. THE PUERPERAL STATE.										
144.	Placenta prævia	...	—	1	—	—	—	—	—	1
	Postpartum hæmorrhage	...	—	1	—	—	—	—	—	1
145.	Caesarean section	...	1	—	—	—	—	—	—	1
146.	Puerperal septicaemia	...	—	1	—	—	—	—	—	1
147.	Alba dolens	...	—	—	—	—	1	—	—	1
148.	Eclampsia	...	—	1	—	2	—	—	—	3
Group IX. DISEASES OF THE SKIN AND CELLULAR TISSUE.										
153.	Cellulitis	...	—	—	—	1	—	—	—	1
Group X. DISEASES OF THE BONES AND JOINTS.										
156.	Septic arthritis	...	—	—	—	1	—	—	—	1
Group XI. CONGENITAL MALFORMATIONS.										
159.	Congenital heart disease	...	1	—	—	1	—	—	—	2
	Myelocele	...	—	1	—	—	—	—	—	1
	Anencephaly	...	—	1	—	—	—	—	—	1
	Cephalocele	...	—	1	—	—	—	—	—	1
	Monstrosity	...	—	—	—	1	—	—	—	1
Group XII. DISEASES OF EARLY INFANCY.										
160.	Congenital debility	...	—	15	—	22	1	—	—	38
161.	Prematurity	...	1	16	—	12	—	—	—	29
162.	Asphyxia neonatorum	...	1	3	—	—	—	1	—	5
	Pulmonary collapse	...	—	2	—	—	—	—	—	2
	Cerebral hæmorrhage	...	—	—	1	—	—	—	—	1
	Intestinal obstruction	...	—	—	—	1	—	—	—	1
Group XIII. OLD AGE.										
164.	Senility	...	1	3	—	3	—	—	—	7
Group XIV. EXTERNAL CAUSES.										
165.	Suicide by poison	...	—	1	—	—	—	—	—	1
168.	Suicide by hanging	...	2	—	—	1	—	—	—	3
170.	Suicide by firearms	...	1	—	—	—	—	—	—	1
179.	Burns	...	—	—	—	1	—	—	—	1
182.	Drowning	...	—	—	—	3	—	—	—	3
185.	Aeroplane accident	...	1	—	—	—	—	—	—	1
188.	Road accidents	...	—	2	—	8	—	—	1	11
196.	Electrocution	...	—	—	—	—	—	1	—	1
197.	Homicide by firearms	...	1	—	—	—	—	—	—	1
199.	Homicide by other means	...	—	—	—	2	—	—	—	2
201.	Fracture	...	1	—	—	1	—	—	—	2
202.	Judicial hanging	...	—	—	—	13	—	—	—	13
Group XV. ILL DEFINED DISEASES.										
205.	Heart failure	...	—	6	—	—	—	1	—	7
	Natural causes	...	—	—	—	2	—	—	—	2
	P.U.O.	...	—	1	—	—	—	—	—	1
	Coma	...	—	—	—	1	—	—	—	1
	Debility	...	—	—	—	1	—	—	—	1
	Surgical shock	...	—	1	—	—	—	—	—	1
	Unknown	...	—	—	—	18	—	—	—	18
TOTAL			50	245	14	463	15	7	2	796



### 10. INFANT MORTALITY.

The total number of deaths in infants of one year of age and under during 1936 was 294 or 36.9% of the total deaths compared with 217 and 31.1% during the previous year.

Reference to the age distribution table in the previous section shows among Europeans, out of every 1,000 deaths, 100 were of the 0—1 age group and that during 1936, 2.35% of that age group died.

Similarly among Asiatics, out of every 1,000 deaths, 540 were of the 0—1 age group and during the year 14.04% of that age group died.

Not knowing the age group distribution for Natives all we are able to say is that out of every 1,000 deaths, 308 were of the 0—1 age group.

In previous years infant mortality has been expressed as a percentage of total deaths and the practice will be continued for comparative purposes.

#### INFANT DEATHS.

Race.	Infant deaths.	Total deaths.	Percentage of total deaths.
White ... ..	4	50	8.00
Asiatic ... ..	140	259	54.05
Native and other ... ..	150	487	30.80
All races ... ..	294	796	36.93

#### INFANT DEATHS FOR TEN YEARS.

Race.	Percentage of total deaths.										Average 10 years
	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	
White ... ..	13.5	8.3	23.7	13.2	12.0	9.6	5.4	17.3	8.8	8.0	11.9
Asiatic ... ..	37.7	34.5	44.9	42.7	44.6	45.8	52.2	42.1	50.9	54.0	44.9
Native ... ..	5.8	13.1	15.4	10.6	20.6	17.3	21.2	19.2	24.1	30.8	17.8
All races ... ..	18.6	20.6	24.3	20.6	29.5	28.0	30.7	26.5	31.1	36.9	26.2

It will be noted that the percentage of infant deaths for all races to total deaths during 1936 increased by 18.6% compared with 1935 and by 40.8% compared with the ten years average. The rate for Europeans was slightly decreased but the rates for Asiatics and Natives were appreciably increased.

The true infant mortality, that is the percentage of deaths to live births, is set out in the table under.

#### INFANT MORTALITY RATES.

Race.	Live births.	Deaths.	Per 1,000 live births.
White ... ..	77	4	51.9
Asiatic ... ..	249	129	518.0
Native ... ..	312	140	448.7
Total ... ..	638	263	412.2

As it is of practical interest to know at what months these infant deaths occurred, the three tables giving this information are appended.

## DEATHS AT ONE MONTH OR UNDER.

Race.		WEEKS.				One month or under.
		1	2	3	4	
WHITE.	Deaths ... ..	3	1	—	—	4
	Percentage live births ...	3.8	1.2	—	—	5.1
ASIATIC.	Deaths ... ..	28	9	3	10	50
	Percentage live births ...	11.2	3.6	1.2	4.0	20.0
NATIVE.	Deaths ... ..	22	5	2	15	44
	Percentage live births ...	7.0	1.6	0.6	4.8	14.1
TOTAL :	Deaths ... ..	53	15	5	25	98
	Percentage live births ...	8.3	2.3	0.7	3.9	15.3

## DEATHS FROM ONE MONTH TO SIX MONTHS.

Race.		MONTHS.					6 months or under.
		1	2	3	4	5	
WHITE.	Deaths ... ..	4	—	—	—	—	4
	% live births ...	5.1	—	—	—	—	5.1
ASIATIC.	Deaths ... ..	50	11	6	3	4	84
	% live births ...	20.0	4.4	2.4	1.2	1.6	33.7
NATIVE.	Deaths ... ..	44	10	12	7	4	87
	% live births ...	14.1	3.2	3.8	2.2	1.2	27.8
TOTAL :	Deaths ... ..	98	21	18	10	8	175
	% live births ...	15.3	3.2	2.8	1.5	1.2	17.5

## DEATHS FROM SEVEN MONTHS TO TWELVE MONTHS.

Race.								7 months to 1 year.
		7	8	9	10	11	12	
WHITE.	Deaths ... ..	—	—	—	—	—	—	—
	% live births ...	—	—	—	—	—	—	—
ASIATIC.	Deaths ... ..	6	6	5	2	5	21	45
	% live births ...	2.4	2.4	2.0	0.8	2.0	8.4	18.0
NATIVE.	Deaths ... ..	5	6	5	6	3	28	53
	% live births ...	1.6	1.9	1.6	1.9	0.9	8.9	16.9
TOTAL :	Deaths ... ..	11	12	10	8	8	49	98
	% live births ...	1.7	1.8	1.5	1.2	1.2	7.6	15.3



The causes of infant mortality and the seasonal incidence are indicated in the following tables :—

# INFANT MORTALITY.

	White.	Indian.	Goan.	Native.	Somali.	Seych.	Arab.	Total.
Anencephalus ... ..	—	1	—	—	—	—	—	1
Apnoea ... ..	1	—	—	—	—	—	—	1
Asphyxia neonatorum ...	—	3	—	—	—	1	—	4
Bronchitis ... ..	—	1	1	3	—	—	—	5
Broncho-pneumonia ...	—	32	1	45	1	—	1	80
Cellulitis ... ..	—	—	—	1	—	—	—	1
Cerebral haemorrhage ...	—	—	1	—	—	—	—	1
Congenital heart disease ...	—	—	—	1	—	—	—	1
Convulsions ... ..	—	1	—	1	—	—	—	2
Cretinism ... ..	—	1	—	—	—	—	—	1
Diarrhoea ... ..	—	14	1	5	—	—	—	20
Diphtheria ... ..	—	1	—	—	—	—	—	1
Dysentery ... ..	—	2	—	—	—	—	—	2
Encephalocele ... ..	—	1	—	—	—	—	—	1
Erysipelas ... ..	—	3	—	—	—	—	—	3
Hernia ... ..	—	—	—	1	—	—	—	1
Ill defined ... ..	—	1	—	5	—	1	—	7
Influenza ... ..	—	—	—	2	—	—	—	2
Intestinal obstruction ...	—	—	—	1	—	—	—	1
Malaria ... ..	—	3	—	4	—	—	—	7
Marasmus ... ..	—	14	—	15	—	—	—	29
Measles ... ..	—	4	—	—	—	—	—	4
Meningitis ... ..	—	—	—	3	—	1	—	4
Monstrosity ... ..	—	—	—	1	—	—	—	1
Myelocele ... ..	—	1	—	—	—	—	—	1
Pneumonia ... ..	—	29	1	20	2	—	—	52
Prematurity ... ..	1	16	—	12	—	—	—	29
Pulmonary collapse ...	—	2	—	—	—	—	—	2
Rickets ... ..	—	4	—	—	—	—	—	4
Septicaemia ... ..	—	—	—	2	—	—	—	2
Syphilis ... ..	—	—	—	17	—	—	—	17
Tetanus ... ..	—	1	—	1	—	—	—	2
Tetany ... ..	—	—	—	1	—	—	—	1
Whooping cough ... ..	2	—	—	2	—	—	—	4
TOTAL ... ..	4	135	5	143	3	3	1	294

## SEASONAL INFANT MORTALITY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Anencephalus ...	—	—	—	—	—	—	—	—	1	—	—	—	1
Apnoea ...	—	—	1	—	—	—	—	—	—	—	—	—	1
Asphyxia neonatorum ...	—	—	3	—	—	—	1	—	—	—	—	—	4
Bronchitis ...	2	1	—	—	—	1	1	—	—	—	—	—	5
Broncho-pneumonia ...	7	5	7	5	11	9	7	11	5	3	3	7	80
Cellulitis ...	—	—	—	—	—	—	—	—	—	—	—	1	1
Cerebral haemorrhage ...	1	—	—	—	—	—	—	—	—	—	—	—	1
Congenital heart disease ...	—	—	—	—	—	—	—	—	—	—	1	—	1
Convulsions ...	—	—	—	1	—	—	—	—	—	—	1	—	2
Cretinism ...	—	—	—	1	—	—	—	—	—	—	—	—	1
Diarrhoea ...	2	—	2	4	3	2	—	1	—	2	2	2	20
Diphtheria ...	—	—	1	—	—	—	—	—	—	—	—	—	1
Dysentery ...	—	—	1	1	—	—	—	—	—	—	—	—	2
Encephalocele ...	—	1	—	—	—	—	—	—	—	—	—	—	1
Erysipelas ...	1	—	—	—	—	—	1	1	—	—	—	—	3
Hernia ...	—	—	1	—	—	—	—	—	—	—	—	—	1
Ill-defined ...	—	—	—	1	2	2	—	—	—	2	—	—	7
Influenza ...	—	1	—	—	—	—	—	—	1	—	—	—	2
Intestinal obstruction ...	—	—	—	—	1	—	—	—	—	—	—	—	1
Malaria ...	1	3	—	—	1	1	—	—	—	—	—	1	7
Marasmus ...	5	1	2	1	5	3	5	5	—	1	1	—	29
Measles ...	—	—	1	3	—	—	—	—	—	—	—	—	4
Meningitis ...	—	4	—	—	—	—	—	—	—	—	—	—	4
Monstrosity ...	1	—	—	—	—	—	—	—	—	—	—	—	1
Myelocele ...	—	—	—	—	—	—	—	—	—	1	—	—	1
Pneumonia ...	4	1	2	7	7	7	8	3	5	1	4	3	52
Prematurity ...	3	2	1	3	5	2	—	1	1	4	4	3	29
Pulmonary collapse ...	—	—	—	—	—	—	—	—	—	—	1	1	2
Rickets ...	—	—	—	—	2	—	—	—	—	—	1	1	4
Septicaemia ...	—	—	—	—	—	—	—	1	—	—	—	1	2
Syphilis ...	1	1	1	2	1	1	2	1	1	2	1	3	17
Tetanus ...	—	—	—	1	—	—	—	—	—	—	1	—	2
Tetany ...	—	—	—	—	—	—	—	—	1	—	—	—	1
Whooping cough ...	2	—	—	1	1	—	—	—	—	—	—	—	4
	30	21	23	30	39	28	25	24	15	16	20	23	294

## SEASONAL INFANT MORTALITY FOR THE RACES.

	White.	Indian.	Goan.	Native.	Somali.	Seychellois.	Arab.	Total.
January ...	—	10	1	18	1	—	—	30
February ...	1	9	—	10	—	1	—	21
March ...	1	13	—	8	—	1	—	23
April ...	1	13	—	16	—	—	—	30
May ...	1	19	—	18	—	—	1	39
June ...	—	17	1	10	—	—	—	28
July ...	—	9	2	14	—	—	—	25
August ...	—	13	—	10	1	—	—	24
September ...	—	5	—	10	—	—	—	15
October ...	—	6	—	9	—	1	—	16
November ...	—	9	—	10	1	—	—	20
December ...	—	12	1	10	—	—	—	23
	4	135	5	143	3	3	1	294



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

	Percentage to total of Infant Deaths.										Average 10 yrs.
	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	
Pneumonia ... ..	47.9	32.6	32.0	44.6	41.7	35.1	41.1	37.4	44.7	44.9	40.3
Congenital debility ...	15.4	10.6	11.9	10.0	15.9	12.9	14.4	9.6	8.3	9.8	11.8
Prematurity ... ..	6.5	11.3	13.2	15.0	7.7	17.0	8.3	12.8	15.6	9.8	11.7
Diarrhoea ... ..	6.5	7.8	9.4	6.9	8.7	9.5	8.8	9.0	6.9	6.8	8.0

It will be noted that pneumonia still holds the position as principal cause of infant deaths, during 1936. This condition accounted for 44.9% of the total deaths, being considerably above the ten years average and slightly above the figure for 1935.

Prematurity and debility each accounted for 9.8% of the total deaths, in both cases well below the ten years average. Although in the former the figure is below that of the previous year, in the latter case the figure is in excess.

The proportion of deaths from diarrhoea is about the same as in 1935 and considerably less than the average for ten years.

## 11. 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 totalled 927 compared with 3,649 notified during 1936, the difference being mainly accounted for by the decrease of malaria cases.

Excluding the 751 malaria cases notified, the total of 176 may be compared with the totals for the previous five years of 149, 130, 125, 128, and 177 respectively.

The number of cases of malaria notified totalled 751 compared with a total of 3,500 for 1935.

There was a reduction in the notifications of blackwater fever from 14 for 1935 to 2 for 1936.

Tuberculosis was notified in 70 instances. Of these 55 were pulmonary cases and 15 cases were other than pulmonary.

The increase in the number of tuberculosis cases appears to indicate that either the disease is becoming more widespread or else more cases are coming up for treatment.

Notifications for the enteric group totalled 37, showing a decrease compared with the figure of 46 for the previous year.

Cerebrospinal meningitis occurred in almost epidemic proportions during the year, accounting for 21 notifications. This is the largest number of notifications for this disease recorded for the Municipality during the past 14 years.

Tropical typhus was recorded in eight instances among Europeans.

An increase in the number of diphtheria cases was reported from four during 1935 to seven during 1936.

Seven cases of plague from within the Municipality were recorded.

Five cases of relapsing fever and three cases of anthrax, all among natives, were notified.

Eight cases of erysipelas were recorded but only four instances of puerperal sepsis were notified.

Leprosy, malta fever, and encephalitis lethargica accounted for 2, 1, and 1 notifications respectively compared with 0, 0, and 1 for the previous year.

#### INFECTIOUS DISEASES NOTIFIED.

	White.	Indian.	Goan.	Native.	Somali.	Total.
Malaria	32	506	—	213	—	751
Anthrax	—	—	—	3	—	3
Blackwater fever	—	2	—	—	—	2
Cerebrospinal meningitis	2	7	—	12	—	21
Diphtheria	—	6	1	—	—	7
Encephalitis lethargica	—	1	—	—	—	1
Erysipelas	1	7	—	—	—	8
Leprosy	—	—	1	1	—	2
Malta fever	—	—	—	1	—	1
Plague	—	—	—	7	—	7
Puerperal sepsis	—	4	—	—	—	4
Relapsing fever	—	—	—	5	—	5
Tropical typhus	8	—	—	—	—	8
Tuberculosis, pulmonary	2	5	4	41	3	55
„ abdomen	—	1	—	3	—	4
„ spine	—	1	—	1	—	2
„ joints	—	3	—	2	—	5
„ adenitis	—	—	—	3	—	3
„ disseminated	—	—	—	1	—	1
Typhoid fever	5	12	—	20	—	37
Total	50	555	6	313	3	927



## SEASONAL INCIDENCE OF INFECTIOUS DISEASES NOTIFIED.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Malaria ... ..	37	78	114	48	111	175	57	36	22	34	13	26	751
Anthrax ... ..	—	—	1	—	—	1	—	—	—	—	—	1	3
Blackwater fever ... ..	—	—	1	—	—	1	—	—	—	—	—	—	2
Cerebrospinal meningitis	1	—	1	—	—	1	4	3	2	2	3	4	21
Diphtheria ... ..	—	—	1	—	1	3	1	1	—	—	—	—	7
Encephalitis lethargica	—	—	—	—	—	—	—	—	—	—	1	—	1
Erysipelas ... ..	1	—	2	—	1	—	2	1	—	1	—	—	8
Leprosy ... ..	1	—	—	1	—	—	—	—	—	—	—	—	2
Malta fever ... ..	—	—	—	—	—	1	—	—	—	—	—	—	1
Plague ... ..	—	—	1	1	—	—	—	—	5	—	—	—	7
Puerperal sepsis ... ..	—	1	2	—	—	—	—	1	—	—	—	—	4
Relapsing fever ... ..	1	—	—	—	1	—	—	—	2	—	1	—	5
Tropical typhus ... ..	—	2	2	—	1	—	—	1	1	—	1	—	3
Tuberculosis, pulm. ...	6	6	5	8	6	3	2	6	3	3	3	4	55
„ abdomen ... ..	—	—	1	—	—	—	—	—	2	1	—	—	4
„ spine ... ..	—	—	1	—	—	—	—	—	1	—	—	—	2
„ joints ... ..	1	—	—	1	—	—	—	—	2	1	—	—	5
„ adenitis ... ..	—	—	1	1	—	—	—	1	—	—	—	—	3
„ disseminated	1	—	—	—	—	—	—	—	—	—	—	—	1
Typhoid fever ... ..	2	2	6	1	5	3	7	2	3	3	1	2	37
Total ... ..	51	89	139	61	126	188	73	52	43	45	23	37	927

## INCIDENCE AND DEATH RATES FOR NOTIFIABLE INFECTIOUS DISEASES.

	No. of cases.	No. of deaths.	Incidence per 1,000 population.	Deaths per 1,000 population.
Malaria ... ..	751	32	15.027	0.640
Anthrax ... ..	3	—	0.060	—
Blackwater fever ... ..	2	2	0.040	0.040
Cerebrospinal meningitis	21	16	0.420	0.320
Diphtheria ... ..	7	2	0.140	0.040
Encephalitis lethargica	1	—	0.020	—
Erysipelas ... ..	8	4	0.160	0.080
Leprosy ... ..	2	—	0.040	—
Malta fever ... ..	1	—	0.020	—
Plague ... ..	7	5	0.140	0.100
Puerperal sepsis ... ..	4	1	0.080	0.020
Relapsing fever ... ..	5	—	0.100	—
Tropical typhus ... ..	8	—	0.160	—
Tuberculosis ... ..	70	16	1.400	0.320
Typhoid fever ... ..	37	7	0.740	0.140





## 12. INFECTIOUS AND COMMUNICABLE DISEASES.

### ACUTE ANTERIOR POLIOMYELITIS.

No case was reported during the year. Only three cases have been previously notified, one in 1934 and two in 1931.

### ANTHRAX.

Three non-fatal cases were notified all among Natives. An average of five cases has occurred annually during the past 10 years.

### BERI-BERI.

No case of this condition was noted during the year. Four previous cases have been notified, one in 1935, one in 1928 and two in 1925.

### BLACKWATER FEVER.

There was a notable reduction in the notification for this disease, only two Asiatic cases being reported; both of these cases were fatal. Since this disease was made notifiable in 1928, 47 cases have occurred of which 14 were in 1935 and 14 in 1934.

### CEREBROSPINAL MENINGITIS.

As in 1935, there was an increased incidence from this disease during the latter part of the year, 21 cases being notified, the second half of the year accounting for 18 of them spread fairly evenly over the months. The cases were divided between two Europeans, seven Asiatics and 12 Natives. The case mortality was high, the number of deaths totalling 13, comprising one European, two Indians and 13 natives. During 1935, 14 cases were notified whilst the ten years previous to this averaged nine cases annually.

### CHICKENPOX, MEASLES, WHOOPING COUGH, MUMPS.

These non-notifiable conditions have been prevalent during the year. Measles and whooping cough had their greatest incidence during the early part of the year whilst chickenpox and mumps were more prevalent during the middle and latter part of the year.

Judging from admissions to hospital, the incidence of chickenpox and mumps was less than last year and the incidence of whooping cough and measles was largely increased.

Six deaths were recorded from measles comprising four Indians and two Natives. There were also six deaths from whooping cough, comprising two Europeans, one Goan and three Natives.

### CHOLERA.

There is no record that this disease has occurred in Nairobi.

### DIPHTHERIA.

There was an increase in the number of diphtheria notifications during 1936, seven cases being reported compared with four for the previous year. This is the largest number reported in any one year with the exception of 1932 when ten cases were notified. The average number of cases annually for the past 14 years has been four.

Of the seven cases notified this year all were Asiatics, six being Indian and one Goan. Two of the Indian cases were fatal.



#### DYSENTERY.

This disease is not notifiable so no indication can be given as to its incidence, but judging from the number of deaths it may be assumed that the condition was not more prevalent than last year.

Three Indian and two Native deaths were recorded, compared with one Indian and five Native deaths which occurred during 1935.

#### ENCEPHALITIS LETHARGICA.

One non-fatal Indian case was recorded. Only seven cases have been previously reported, one in 1935, three in 1934, two in 1932 and one in 1931.

#### ENTERIC FEVER GROUP.

There was a decrease in the notifications for this condition, 37 cases being reported compared with 46 during 1935.

The 37 cases comprised five Europeans, 12 Indians and 20 Natives. Of these cases one European, two Indian and four Native had a fatal termination. The disease did not assume epidemic proportions but was evenly distributed throughout the year.

#### ERYSIPELAS.

There were eight cases of Erysipelas among one European and seven Indians. Four of the Indian cases were fatal.

#### GLANDERS, RABIES.

No case of either of these diseases have yet been reported in Nairobi.

#### LEPROSY.

Two cases were reported coming from the Municipality, one being a Goan and the other a Native.

It should be noted that the Municipality was responsible for 1,378 patient days in hospital for this disease, compared with 1,767 patient days for 1935.

#### MALTA FEVER.

One native case was notified during the month of June. During the past 10 years, nine cases of malta fever have been reported. For the four years previous to this 14 cases occurred.

#### MALARIA.

Detailed information regarding the notification of this disease, together with other statistics are given under a separate section.

#### OPHTHALMIA NEONATORUM.

No cases were reported during 1936.

#### PLAGUE.

Seven cases occurred during the year, one in March, one in April and five in September, all among Natives. Five of the cases were fatal. Numerous cases have occurred outside the Municipality, seven of these being brought within the area for treatment. The last epidemic of plague commenced in 1930 continuing to 1932. Since the last epidemic there has been only one case, occurring last year, until the seven cases this year.



### PNEUMONIA.

This disease not being notifiable, it is only possible to judge the severity of the incidence in relation to deaths.

During 1936, pneumonia was responsible for 229 deaths and broncho-pneumonia for 97 deaths, a total of 326, an increase over the total for 1935 when the number was 257.

The percentage of deaths from the pneumonias to total deaths during the year amounted to 40.9%—the highest for some years. The comparative figures for the five previous years were 36.9%, 39.5%, 34.1%, 36.1%, and 36.3%.

Of the 326 deaths from this condition 132 were in infants one year of age and under.

The annual death rate for pneumonias per thousand of population for all races during 1936 was 6.5 compared with 5.1 for 1935.

The death rate for pneumonia during the past 10 years has varied between 7.6 in 1928 to 3.7 in 1932, averaging 5.5

### PUERPERAL SEPSIS.

Four Indian cases of puerperal sepsis were notified compared with eight reported during the previous year.

One of the four cases had a fatal termination.

This obviously does not represent a true picture of the incidence of this disease and suggests that it may be advisable to institute some scheme whereby the maternal condition during the puerperium can be more closely followed.

### RELAPSING FEVER.

Five native cases scattered throughout the year were notified.

There were no fatal cases.

The incidence of this disease is still gradually diminishing.

### SCARLET FEVER.

No cases were recorded. Only four previous cases have been notified, one each in 1935, 1931, 1930, and 1928.

### SMALLPOX.

No case was notified during the year. The last cases occurred in 1928.

### TROPICAL TYPHUS.

Eight European non-fatal cases were reported, compared with three during the previous year. An average of five cases have been notified annually during the past ten years.

### TUBERCULOSIS.

Tuberculosis of all forms was notified in 70 instances during the year; 55 of these referred to the pulmonary variety and the remaining 15 to forms other than pulmonary.



Of the pulmonary manifestation, two Europeans were notified with one death, five Indians with one death, four Goans with one death, 41 Natives with seven deaths, and three Somalis with no deaths.

Of the manifestations other than pulmonary, four cases of abdominal tuberculosis were reported among one Indian and three Natives, one case of each race being fatal. Tuberculosis of the spine occurred among one Indian and one Native, the latter being fatal. Of other parts affected, tuberculosis of the joints concerned three Indian and two Native cases, adenitis three Native cases, and disseminated tuberculosis one native case. Of the latter nine cases, three had a fatal termination.

The incidence rate for all forms of tuberculosis equalled 1.40 per thousand compared with 0.75 for 1935.

The death rate for this disease was 0.32 per thousand population compared with 0.57 for 1935.

### 13. ADMISSIONS TO HOSPITAL.

The following details are of patients resident in the Municipality admitted to each of the three institutions available, namely, European Hospital, Native Hospital, and Infectious Diseases Hospital for infectious or communicable diseases requiring segregation for the public welfare.

These institutions are conducted by the Government but the Municipality is responsible for patients from the Municipality to the extent of payment for treatment.

The admissions have continued to increase to a total of 524 during 1936 compared with 349 and 239 for 1935 and 1934 respectively. The number of patient days has increased to the considerable total of 9,765 compared with 7,882 and 7,910 for the two previous years.

The days in hospital for tuberculosis more than doubled themselves during 1936, the total being 4,046 compared with 1,989 for 1935, whilst the days in hospital for leprosy during the year showed a reduction from 1,767 to 1,378 compared with a similar period.

The days for measles also more than doubled themselves, being 1,478 compared with 627. Chickenpox was somewhat less prevalent, the number of days totalling 950 compared with 1,413 during 1935. Mumps showed a diminution in days in hospital from 638 during the previous year to 454 during 1936, whilst whooping cough showed a large increase from 192 during 1935 to 513 during the present year.

The total days in hospital for these four diseases amounted to 3,395 compared with 2,870 for the previous year.

Admissions for typhoid fever accounted for 617 days, a total less than that of the previous year, whilst in the case of cerebrospinal meningitis, although the notifications were in considerable excess of last year, the days in hospital diminished from 169 to 79.

Other conditions that helped to swell the total of days in hospital include tropical typhus accounting for 73 days, relapsing fever for 55 days, anthrax for 46 days, and plague for 28 days.



The following tables give the details of admissions, patient days for the hospitals, the seasonal incidence of the diseases, and the races affected.

### EUROPEAN HOSPITAL.

Month.				Admissions.		Patient days.
January	...	...	...	1	...	75
February	...	...	...	3	...	38
March	...	...	...	3	...	84
April	...	...	...	—	...	96
May	...	...	...	—	...	67
June	...	...	...	—	...	1
July	...	...	...	1	...	1
August	...	...	...	1	...	5
September	...	...	...	1	...	9
October	...	...	...	—	...	—
November	...	...	...	1	...	13
December	...	...	...	—	...	11
Total				11	...	400

### NATIVE HOSPITAL.

ASIATIC.				NATIVE.			TOTAL.		
		Admis- sions.	Patient days.		Admis- sions.	Patient days.		Admis- sions.	Patient days.
January	...	1	27	...	5	56	...	6	83
February	...	2	19	...	5	50	...	7	69
March	...	1	30	...	10	94	...	11	124
April	...	—	30	...	8	71	...	8	101
May	...	—	30	...	9	137	...	9	168
June	...	—	—	...	5	80	...	5	80
July	...	—	—	...	6	43	...	6	43
August	...	2	26	...	11	115	...	13	141
September	...	1	15	...	12	122	...	13	137
October	...	2	46	...	2	8	...	4	54
November	...	—	19	...	5	79	...	5	98
December	...	—	—	...	7	66	...	7	66
Total	...	9	243	...	85	921	...	94	1164

## INFECTIOUS DISEASES HOSPITAL.

	WHITE.			ASIATIC.			NATIVE.			TOTAL.		
	Admis- sions.	Patient days.		Admis- sions.	Patient days.		Admis- sions.	Patient days.		Admis- sions.	Patient days.	
January	1	31	...	1	2	...	65	881	...	67	914	
February	—	—	...	—	—	...	66	981	...	66	981	
March	...	—	...	—	—	...	23	615	...	23	615	
April	...	1	6	...	—	...	22	513	...	23	519	
May	...	—	5	...	—	...	31	596	...	31	601	
June	...	—	—	...	—	...	41	729	...	41	729	
July	...	1	26	...	—	...	32	727	...	33	753	
August	...	—	8	...	—	...	36	813	...	36	821	
Sept.	...	—	—	...	—	...	19	564	...	19	564	
October	...	—	—	...	—	...	21	538	...	21	538	
Nov.	...	—	—	...	1	10	...	23	512	...	24	522
Dec.	...	—	—	...	—	4	...	35	640	...	35	644
Total	...	3	76	...	2	16	...	414	8109	...	419	8201

## MUNICIPAL PATIENTS—SUMMARY.

	WHITE.			ASIATIC.			NATIVE.			TOTAL.		
	Admis- sions.	Patient days.		Admis- sions.	Patient days.		Admis- sions.	Patient days.		Admis- sions.	Patient days.	
European	11	400	...	—	—	...	—	—	...	11	400	
Native	...	—	...	9	243	...	85	921	...	94	1164	
Inf. Disease	3	76	...	2	16	...	414	8109	...	419	8201	
Total	...	14	476	...	11	259	...	499	9030	...	524	9765

## MUNICIPAL PATIENT DAYS BY DISEASES.

			White.		Asiatic.		Native.		Total.
Tuberculosis	...	...	37	...	205	...	3,804	...	4,046
Leprosy	...	...	—	...	14	...	1,364	...	1,378
Chickenpox	...	...	—	...	—	...	950	...	950
Typhoid fever	...	...	311	...	33	...	273	...	617
Mumps	...	...	—	...	—	...	454	...	454
Measles	...	...	11	...	—	...	1,467	...	1,478
Whooping cough	...	...	—	...	—	...	513	...	513
C.S.M.	...	...	35	...	—	...	44	...	79
Anthrax	...	...	—	...	—	...	46	...	46
Relapsing fever	...	...	—	...	—	...	55	...	55
Puerperal fever	...	...	—	...	7	...	—	...	7
Tropical typhus	...	...	73	...	—	...	—	...	73
Scabies	...	...	—	...	—	...	14	...	14
Plague	...	...	—	...	—	...	28	...	28
Malta fever	...	...	—	...	—	...	18	...	18
Erysipelas	...	...	9	...	—	...	—	...	9
Total	...	...	476	...	259	...	9,030	...	9,765



## MUNICIPAL PATIENT DAYS BY MONTHS.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Tuberculosis ...	207	258	359	301	413	380	397	442	410	294	311	274	4046
Leprosy ...	155	118	93	90	93	90	93	93	99	146	160	148	1378
Chickenpox ...	87	26	73	63	55	59	134	172	87	83	35	76	950
Typhoid fever ...	69	46	57	121	150	44	29	36	—	15	19	31	617
Mumps ...	12	37	29	28	34	104	35	54	15	36	23	47	454
Measles ...	440	428	94	102	60	95	10	55	30	18	71	75	1478
Whooping cough ...	77	152	75	4	25	9	34	84	24	—	—	29	513
C.S.M. ...	—	—	—	—	—	2	41	20	2	—	—	14	79
Anthrax ...	—	—	3	—	—	5	24	—	—	—	—	14	46
Relapsing fever ...	25	7	—	1	6	—	—	—	13	—	1	2	55
Puerperal fever ...	—	1	—	—	—	—	—	6	—	—	—	—	7
Tropical typhus ...	—	10	19	6	—	—	—	5	9	—	13	11	73
Scabies ...	—	5	5	—	—	4	—	—	—	—	—	—	14
Plague ...	—	—	7	—	—	—	—	—	21	—	—	—	28
Malta fever ...	—	—	—	—	—	18	—	—	—	—	—	—	18
Erysipelas ...	—	—	9	—	—	—	—	—	—	—	—	—	9
Total ...	1072	1088	823	716	836	810	797	967	710	592	633	721	9765

## 14. MALARIA.

Malaria was made notifiable in February, 1930. During 1936, 1,000 cases were notified, 902 being residents and 98 non-residents, compared with 3,949 notified during 1935 comprising 3,500 residents and 449 non-residents.

## MALARIA NOTIFICATIONS.

Month.	RESIDENT.				NON-RESIDENT.				Total.
	White.	Asiatic.	Native.	Total.	White.	Asiatic.	Native.	Total.	
January ...	4	22	23	49	1	1	6	8	57
February ...	6	54	31	91	6	—	4	10	101
March ...	8	91	28	127	3	3	14	20	147
April ...	2	41	9	52	3	2	4	9	61
May ...	9	71	48	128	5	6	8	19	147
June ...	10	111	80	201	3	3	1	7	208
July ...	8	47	30	85	4	4	5	13	98
August ...	2	29	16	47	—	1	—	1	48
September ...	2	21	9	32	—	—	4	4	36
October ...	4	29	10	43	4	—	—	4	47
November ...	2	10	4	16	—	—	1	1	17
December ...	2	18	11	31	1	1	—	2	33
Total ...	59	544	299	902	30	21	47	98	1000

## LOCALLY ACQUIRED INFECTIONS.

Month.	White.	Asiatic.	Native.	Total.
January ...	1	19	17	37
February ...	5	50	23	78
March ...	5	88	21	114
April ...	1	38	9	48
May ...	5	69	37	111
June ...	4	107	64	175
July ...	5	40	12	57
August ...	1	23	12	36
September ...	—	16	6	22
October ...	2	28	4	34
November ...	2	10	1	13
December ...	1	18	7	26
Total ...	32	506	213	751

The seasonal incidence of the locally acquired infections as shown by the above figures, takes an abrupt ascent from January to the peak in June, with a recession in April. From the June peak, the incidence drops rapidly to July and then less rapidly to November.

This peak of incidence follows two months after the peak of rainfall which occurred in April, the descent of incidence following the descent of the rainfall by a similar period to the end of the year.

## INCIDENCE OF NOTIFIED MALARIA PER 1000 PERSONS.

Race.	1930	1931.	1932.	1933.	1934.	1935.	1936.
White ...	23.88	13.19	13.81	8.18	17.40	26.58	10.53
Asiatic ...	30.51	10.87	7.41	15.36	77.32	101.50	34.00
Native ...	10.84	6.73	24.20	29.66	24.81	59.92	10.67
All races ...	16.62	8.81	17.64	22.60	40.57	69.93	18.04

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

The diagnosis of all the notified cases, with the exception of those termed "Clinical" has been supported by laboratory evidence.

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 taking place 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.						
	1930	1931	1932	1933	1934	1935	1936
Nairobi ...	107	79	243	865	1924	3281	751
Ex-Nairobi ...	84	133	214	184	169	219	151
Doubtful ...	598	208	379	22	9	—	—
Total ...	789	420	836	1071	2102	3500	902

Source of Infection.	PERCENTAGE.						
	1930	1931	1932	1933	1934	1935	1936
Nairobi ...	13.6	18.8	29.1	80.8	91.5	93.7	83.3
Ex-Nairobi ...	10.6	31.7	25.6	17.2	8.1	6.3	16.7
Doubtful ...	75.8	49.5	45.3	2.0	0.4	0.0	0.0
Total ...	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The percentage of locally acquired infections is lower than during 1935 and the percentage of infections acquired outside the Municipality has increased accordingly.

The fact of there being no doubtful cases for the past two years indicates that more accurate information is being tendered on the notification forms.

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

## TYPE OF INFECTION AND PROBABLE SOURCE.

Probable source	Clinical.	Benign tertian.	Quartan.	Sub-tertian.	Double infections.	Total cases.
Nairobi ...	24	127	22	580	2	751
Ex-Nairobi ...	4	9	3	136	1	151
Doubtful ...	—	—	—	—	—	—
Total residents ...	28	136	25	716	3	902
Total non-residents	3	5	4	87	1	98
Total ...	31	141	29	803	4	1000

## PERCENTAGE OF TYPES OF INFECTIONS.

Type.	Nairobi.	Ex-Nairobi.	Doubtful.	Non-residents.	Percentage total cases.
Clinical ...	3.2	2.6	—	3.0	3.1
Benign tertian ...	16.9	5.9	—	5.1	14.0
Quartan ...	2.9	2.0	—	4.0	2.9
Sub-tertian ...	77.0	89.5	—	87.9	80.0

As hitherto, sub-tertian infection represents the large proportion of the total cases. During 1936 this figure was 80.0% compared with 83.9% during 1935.



In the Nairobi infections, benign tertian and quartan showed an increase at the expense of sub-tertian, the percentages for 1936 being 16.9, 2.9, and 77.0 compared with 13.8, 2.0, and 83.0 for 1935. In the Ex-Nairobi infections, there were similar increases in benign tertian and quartan but sub-tertian reached the higher figure of 89.5.

In regard to non-residents, the percentage of benign tertian remained about stationary whilst the quartan was increased from 1.3% to 4.0%, and the sub-tertian decreased from 89.9% to 87.4%.

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	1934	1935	1936
1. Upper Parklands	—	—	1	3	4	5	4
2. Muthaiga	3	—	1	8	21	17	1
3. Westlands	1	—	1	—	3	11	1
4. Parklands	10	4	9	31	47	56	17
5. Forest Road	11	6	14	133	266	458	141
6. Racecourse Road	—	3	42	128	137	499	98
7. Eastleigh	2	—	8	30	36	108	11
8. Kilimani	2	2	10	19	12	24	2
9. Hill	5	2	23	63	113	100	19
10. Commercial	73	62	134	450	1285	2103	457
Total	107	79	243	865	1924	3381	751

As pointed out repeatedly, the worst areas affected are those contiguous to the Nairobi swamp.

It can only be hoped that one day steps will be taken to stop the irrigation on this area and thus alter it from an unhealthy area to a healthy one. The fact of this swamp being in the centre of the town and bordered by close settlement adds an increased inducement for its eradication.

Double infections were only recorded in four instances this year, an incidence of 0.4% of the notified cases. In each case the double infection was subtertian and benign tertian.

The mortality rate of the cases notified reached the high figure of 4.60% compared with 1.64% for 1935. During the month of July the mortality rate was 8.23%.

The mortality rates for the previous five years were 1.64%, 1.52%, 2.24%, 2.56%, and 2.62% respectively.

The death rate from malaria per thousand of population during 1936 was 0.64 compared with 1.15, 0.67, 0.50, 0.42, and 0.35 for the previous five years.

Two Asiatic deaths from blackwater fever were recorded during the year, one during the month of March and one during June.



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

### DEATHS FROM MALARIA.

Month.	Number of cases notified.		Number of deaths.		Percentage mortality rate.	
January	...	49	...	1	...	2.04
February	...	91	...	3	...	3.29
March	...	127	...	3	...	2.36
April	...	52	...	—	...	0.00
May	...	128	...	4	...	3.12
June	...	201	...	6	...	2.98
July	...	85	...	7	...	8.23
August	...	47	...	3	...	6.38
September	...	32	...	2	...	6.25
October	...	43	...	1	...	2.32
November	...	16	...	1	...	6.25
December	...	21	...	1	...	4.76
Total	...	902	...	32	...	3.54
Non-resident	...	98	...	14	...	14.28
TOTAL	...	1000	...	46	...	4.60

### DEATHS FROM MALARIA AND RATES FOR THE RACES FOR SEVEN YEARS.

Race.	Number of deaths.						
	1930	1931	1932	1933	1934	1935	1936
White	1	—	—	1	1	—	—
Asiatic	12	12	10	6	18	11	9
Native	26	5	10	17	13	47	23
All races	39	17	20	24	32	58	32

Race.	Rate per 1,000.						
	1930	1931	1932	1933	1934	1935	1936
White	0.22	—	—	0.18	0.18	—	—
Asiatic	1.09	0.76	0.66	0.39	1.19	0.66	0.56
Native	0.81	0.18	0.37	0.63	0.45	1.67	0.82
All races	0.82	0.35	0.42	0.50	0.67	1.15	0.64

## DEATHS FROM MALARIA AND RATES FOR 18 YEARS.

Year.	Number of deaths.		Death rate per 1,000	
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
1934	...	32	...	0.67
1935	...	58	...	1.15
1936	...	32	...	0.64

## 15. ANTI-MALARIAL WORK.

As a routine the whole length of the concrete anti-malarial canals as well as newly constructed drains were inspected at frequent intervals, cleaning and repairing taking place when and where necessary.

The Gethathuru River on the northern boundary of the town was straightened and cleared from the Municipal boundary at Limuru Road as far as Fort Hall Road.

The Mathari River was given attention from its entry into the Municipality at Marlborough Estate to near its junction with the Gethathuru River by the Mathari quarries. Work is still proceeding with this stream.

The stream entering the town at Spring Valley Estate and joining with the Mathari River at Fort Hall Road was also given attention in respect of straightening and clearing.

The stream originating at Upper Hill Estate, crossing the Ngong Road and joining the Ngong River near the quarries necessitated a considerable amount of work in straightening and keeping the banks clear.

The Ngong River itself towards the quarries had to be dealt with on several occasions on account of the nuisance caused by sullage water being discharged into this stream.

Endeavour was made to define the banks of the Nairobi River as it passes through the Nairobi Swamp but the character of the ground rendered this difficult, however, the course of this stream was straightened and the banks cleared from Race Course Road to Eastleigh.

The work on all these streams was rendered more difficult by the small amount of water passing along them due to the low rainfall, in a great many instances pooling taking place.



During the year a total of 9,320 gallons of oil mixture was used in the endeavour to control breeding places of mosquitoes.

The practice instituted last year of supplying fluid for spraying in order to kill adult mosquitoes was continued, a total of 400 gallons of pyrethrum fluid being issued.

The lorry used in connection with anti-malarial work travelled 9,180 miles, mention should be made that its work included the removal of 112 tons of by-products from the abattoir as well as the cartage of 120 tons of old iron, etc., from the commercial area for dumping in the quarries.

Next year it is hoped to re-organise this work by the appointment of a malaria officer, trained searchers and the institution of the necessary laboratory. At the present time the Entomological Department of the Government is carrying out the survey and laboratory work for the municipal area.

## 16. RODENT DESTRUCTION.

Routine rat trapping was carried out as in former years, the rat gang consisting of six boys working under the direction of the sanitary inspectors.

The Railway Administration provides its own gang which operates on railway premises and land.

The number of rats destroyed by the Municipal gang totalled 25,337 compared with 18,529 killed during 1935.

The Railway gang accounted for 7,522 rats compared with 6,418 for the previous year.

The total number of rats destroyed namely 32,859 constitutes a record.

Twenty-one rats were sent to the laboratory for examination only one being found positive to *B. pestis*.

The following table refers to rats trapped and takes no account of the numbers destroyed by poison.

RATS TRAPPED.

Month.	Municipal gang.			Railway gang.			Total.
January ... ..	1,687	...	...	412	...	...	2,099
February ... ..	1,751	...	...	334	...	...	2,085
March ... ..	1,899	...	...	313	...	...	2,212
April ... ..	1,876	...	...	413	...	...	2,289
May ... ..	1,999	...	...	747	...	...	2,746
June ... ..	2,023	...	...	741	...	...	2,764
July ... ..	2,352	...	...	946	...	...	3,298
August ... ..	1,967	...	...	790	...	...	2,757
September ... ..	2,337	...	...	831	...	...	3,168
October ... ..	2,508	...	...	835	...	...	3,343
November ... ..	2,507	...	...	533	...	...	3,040
December ... ..	2,431	...	...	627	...	...	3,058
Total ... ..	25,337	...	...	7,522	...	...	32,859



## 17. SANITATION.

### CONSERVANCY.

The method of night soil collection by the single bucket system and the method of disposal by trenching remain unchanged from previous years, as was the method of transport by ox-drawn vehicles.

The daily number of buckets conserved totalled 3,138 compared with 3,263 during 1935—the reduction being accounted for by premises connected to the sewer and the conversion of latrines into water closets.

New and existing premises to the extent of 58 were connected to the sewerage system with a total of 179 water closets.

Excluding septic tanks and pits, there is now a total of 1,386 water closets in use connected with the sewers.

New septic tanks have been installed in 47 instances making a total of 483 in the Municipality.

Two conserving tanks in connection with septic tanks on land not capable of dealing with the effluent have been installed, increasing the total to eleven.

Two septic pits were permitted where the soil was suitable.

### SEWERS.

Additions to the sewerage system included 400 feet of 6" stoneware sewer laid to serve the Railway Godown Sites and also 550 feet of 15 x 12 concrete sewer laid in River Road.

Further sewers were under construction at the end of the year in the Duke Street area.

### REFUSE COLLECTION.

Owing to pressure of work the motor freighter was augmented by the tractor and trailer, in addition to ox-drawn carts for the removal of refuse.

As it was found that the destructor was becoming incapable of dealing with the amount of refuse to be destroyed, an extra cell was in process of being added at the end of the year.

During the alterations to the destructor, refuse was disposed of by tipping on the destructor site.

## 18. SANITARY INSPECTIONS.

Details of the work performed by the inspectorial staff of the public health department will be found in the summary which follows.

One inspector was away 7½ months on overseas leave and that, combined with the unsatisfactory allowance granted to the staff for locomotion purposes, reduced the amount of work performed to a considerable extent.

During the year 7,164 premises were inspected for nuisances compared with 7,906 for 1935 and 881 defects were remedied compared with 1,241 remedied during the previous year.

The Bazaar Area Town Planning Scheme took a considerable amount of time, two inspectors being employed on this work at times, in order to complete the necessary inspections and reports.



## SUMMARY OF WORKS PERFORMED.

## NUISANCES.

## Inspections made to:—

Dwelling houses ... ..	2,208
Restaurant and eating houses ... ..	191
Laundries ... ..	82
Hotels and bars ... ..	123
Offensive trades ... ..	53
Stables and cattle sheds ... ..	18
Offices and trade premises ... ..	2,446
Open spaces, streets, etc. ... ..	1,072
Public Buildings ... ..	114
Complaints registered and investigated ... ..	49
House to house inspections ... ..	41

## Defects remedied:—

Premises dirty or verminous ... ..	47
Dwellings without proper water supply ... ..	3
Dwelling unfit for habitation ... ..	32
Insanitary dwellings demolished ... ..	1
Yards unpaved ... ..	8
Rat infestation ... ..	9
Latrine accommodation defective ... ..	120
Latrine accommodation inadequate ... ..	31
Drains, closed water carriage, choked ... ..	23
Drains, closed water carriage, defective ... ..	16
Drains, open, choked ... ..	37
Drains, open, defective ... ..	12
Drains absent or inadequate ... ..	3
Septic tanks or cesspits defective ... ..	4
Septic tanks or cesspits choked ... ..	3
Waste water disposal defective or inadequate ... ..	21
Soil or waste pipes choked ... ..	1
Soil or waste pipes defective ... ..	2
Accumulations of refuse ... ..	122
Dustbins absent or defective ... ..	116
Foodstuffs unprotected against rats ... ..	60
Sleeping in kitchens or food stores ... ..	5
Mosquito breeding ... ..	74
Animals causing nuisance ... ..	5
Miscellaneous ... ..	125
Defects remedied by verbal intimation ... ..	283
Defects remedied by written intimation ... ..	197
Defects remedied by statutory notices ... ..	401

## SEWERAGE CONNECTIONS.

Premises connected to sewer ... ..	58
Pail closets, etc., converted into water closets ... ..	43
New closets installed to sewer ... ..	136

## ERECTION AND ALTERATION OF BUILDINGS.

Plans dealt with ... ..	359
Inspections made ... ..	2,093
Completion certificates issued ... ..	241

## LICENSING OF TRADE PREMISES.

Inspections made	...	...	...	...	...	...	905
Re-inspections made	...	...	...	...	...	...	266

## INFECTIOUS DISEASES.

Cases investigated	...	...	...	...	...	...	77
Inspections made	...	...	...	...	...	...	169
Rooms disinfected	...	...	...	...	...	...	32

## RATS.

Number destroyed	...	...	...	...	...	...	25,337
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## NOTICES SERVED.

Public Health Ordinance	...	...	...	...	...	...	121
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## Municipal By-laws:—

Cleansing Plots, By-law 499	...	...	...	...	...	...	48
Inadequate latrine accommodation, By-law 510	...	...	...	...	...	...	35
Refuse receptacles and removal	...	...	...	...	...	...	89
Drainage By-laws	...	...	...	...	...	...	36
Others, By-laws 509, 513, 521, 127, 128, 69	...	...	...	...	...	...	41
Closing Orders (Insanitary Dwellings By-laws)	...	...	...	...	...	...	3

PROSECUTIONS	...	...	...	...	...	...	25
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## 19. FOOD CONTROL.

## TRADE PREMISES SUBJECT TO SPECIAL CONTROL.

	1929	1930	1931	1932	1933	1934	1935	1936
Aerated water factories	5	5	4	4	5	4	5	5
Bakeries	13	10	13	11	10	11	12	10
Butchers' shops	18	17	21	21	19	13	14	12
Dairies and milk shops	12	20	28	26	32	24	22	21
Fishmongers	10	9	14	15	11	8	8	8
Laundries and dhobies	21	23	21	24	20	19	24	20
Restaurants	5	5	6	7	8	6	8	6
Eating houses	34	46	40	40	32	29	23	27
Vegetable dealers	19	17	19	22	20	16	20	21

These figures do not include stalls or shops in the Municipal Market.

They are also exclusive of premises in Pumwani, where there are 12 Butchers shops, nine Eating houses and three Vegetable dealers.

Of the 21 dairies and milk shops, eight are cow-keepers who retail milk comprising seven Europeans and one Somali, the remaining 13 premises are retailing milk depots, two being European and 11 Asiatic.

During the year 198 specimens of milk mainly from native sources were inspected, of these 47 were considered suitable for consumption whilst 151 were considered adulterated and voluntarily surrendered.



## INSPECTIONS TO PREMISES UNDER SPECIAL CONTROL.

	No. of inspections			
Aerated water factories	...	...	...	479
Bakeries	...	...	...	96
Butchers' shops	...	...	...	241
Dairies and Milk shops	...	...	...	1,043
Fishmongers	...	...	...	118
Laundries and dhobies	...	...	...	82
Restaurants	...	...	...	3
Eating houses	...	...	...	183
Vegetable dealers	...	...	...	187
Hotels and boarding houses	...	...	...	123
Markets	...	...	...	348
Grocers	...	...	...	114

## FOOD INSPECTED AND CONDEMNED.

	Inspected.				Condemned.			
	lbs.				lbs.			
Fish	...	...	...	28,814	...	...	...	810
Fruit	...	...	...	14,830	...	...	...	748
Provisions	...	...	...	32,860	...	...	...	830
Meat	...	...	...	164,760	...	...	...	2,770
Vegetables	...	...	...	20,500	...	...	...	—
Bottled goods, etc.	...	...	...	14,241	...	...	...	221
Milk, native	...	...	...	1,010 gals.	...	...	...	333 gals.

## 20. ABATTOIR.

The amount of work in connection with the inspection of meat at the abattoir is still progressively increasing. The total number of animals slaughtered during 1936 amounted to 54,984 exceeding the number slaughtered during 1935 by 4,323 or 8.5%. The increase during 1935 over the previous year was 7%.

The increase in the total number of animals killed was largely accounted for by the greater number of sheep and goats dealt with.

The number of oxen slaughtered during the year totalled 13,866, a figure very slightly in excess of last year's kill, of 13,813.

The number of grade oxen killed was 4,422 compared with 4,806 for 1935, whilst 9,444 native oxen were slaughtered compared with 9,007 for the previous year.

Fewer calves were sent to the abattoir, 496 compared with 537, although the percentage of condemnations decreased from 18.8% to 15.3%.

There was a large increase in the number of sheep slaughtered, the figure being 12,089 compared with 10,668—an increase of 13%.

The number of goats killed showed an increase of 11%, the number being 26,199 compared with 23,417 for 1935.



There was also an increase of nearly 5% in the number of pigs slaughtered against an increase of nearly 14% for the previous year, the figures being 2,334 compared with 2,226 during 1935.

Tables are shown recording the number of animals slaughtered during the year, together with the percentages of condemnations and the causes of condemnation. Tables are also included showing the condemnation rates for the types of oxen for a number of years.

The number of oxen condemned for all causes amounted to 3,024 or 21.8% of the total slaughtered compared with 19.8% for 1935.

2,549 or 18.3% of the total oxen slaughtered were condemned for cysticercus bovis compared with 2,389 and 17.2% for the previous year. Of the grade oxen 417 or 9.4% were condemned for this condition whilst the figure for native oxen was 2,132 or 22.5%.

Of the remainder, 157 were rejected for being in a fevered condition, 78 for dropsy, 64 for emaciation, 48 for redwater, 44 for jaundice, 35 for extensive bruising, 20 for septic conditions, 12 for tuberculosis, three for anaplasmosis, four for East Coast Fever, five for foot and mouth disease, two for rinderpest, one for pleuro-pneumonia.

Of the 76 calves condemned, 68 or 15.3% were rejected on account of cysticercus bovis, five for septic conditions and three for emaciation.

The principle cause for the rejection of the 295 sheep was caseous lymphadenitis in 149 instances followed by 45 rejections for being in a fevered condition, 34 for emaciation, 23 for septic conditions, 22 for jaundice, 17 for dropsy, four for extensive bruising and one for carcinoma.

The causes for the condemnation of the 1,138 goats were, 267 for being in a fevered condition, 239 for dropsy, 180 for heartwater, 161 for caseous lymphadenitis, 120 for emaciation, 80 for jaundice, 59 for septic conditions, 27 for pleuro-pneumonia, and five for extensive bruising.

Only 57 or 2.4% of the pigs slaughtered were condemned, the causes were, 31 for jaundice, 10 for being fevered, seven for septic conditions, three for tuberculosis, two for cysticercus cellulosae, two for extensive bruising and one each for carcinoma and diffused haemorrhage.

The estimated total weight of meat condemned amounted to 1,294,962 lbs., being somewhat in excess of the total for the previous year, namely 1,206,629 lbs.

### INSPECTIONS.

1936.	Number of carcasses		Percentage of carcasses condemned
	Inspected.	Condemned.	
Oxen—Grade	4,422	657	14.85
Native	9,444	2,367	25.06
	13,866	3,024	21.80
Calves	496	76	15.32
Sheep	12,089	295	2.44
Goats	26,199	1,138	4.34
Pigs	2,334	57	2.44
Total	54,984	4,590	8.34



## ORGANS CONDEMNED APART FROM CARCASSES.

Hearts	...	...	...	5,906
Heads	...	...	...	4,844
Tongues	...	...	...	4,735
Kidneys	...	...	...	9,765
Livers	...	...	...	22,355
Lungs	...	...	...	30,169
Spleens	...	...	...	5,571
Stomachs	...	...	...	5,620
Intestines	...	...	...	4,854
Others	...	...	...	47
Total	...	...	...	93,866

## ESTIMATED TOTAL WEIGHT OF MEAT CONDEMNED.

Beef	...	...	...	1,177,881
Veal	...	...	...	7,734
Mutton	...	...	...	23,336
Goat	...	...	...	72,341
Pork	...	...	...	13,670
Total	...	...	...	1,294,962

## CONDITIONS NECESSITATING CONDEMNATIONS.

	— Oxen —		Calves.	Sheep.	Goats.	Pigs.	Total.
	Grade.	Native.					
Anaplasmosis	...	1	2	—	—	—	3
Bruising	...	31	4	—	4	5	46
Carcinoma	...	—	—	1	—	1	2
Cysticercus bovis	...	417	2,132	68	—	—	2,617
Cysticercus cellulosae	...	—	—	—	—	2	2
Diffused haemorrhage	...	—	—	—	—	1	1
Dropsy	...	29	49	—	17	239	334
Emaciation	...	43	21	3	34	120	221
East Coast fever	...	—	4	—	—	—	4
Fevered condition	...	81	76	—	45	267	479
Foot and Mouth disease	...	5	—	—	—	—	5
Heartwater	...	—	—	—	180	—	180
Jaundice	...	24	20	—	22	80	177
Lymphadenitis	...	—	—	149	161	—	310
Lipoma	...	1	—	—	—	—	1
Moribund	...	—	1	—	—	—	1
Pleuro-pneumonia	...	—	1	—	27	—	28
Pyæmia	...	—	—	2	—	—	2
Rinderpest	...	—	2	—	—	—	2
Redwater	...	6	42	—	—	—	48
Septic condition	...	14	5	3	23	57	109
Septic pneumonia	...	—	—	—	2	—	2
Septicaemia	...	—	1	—	—	—	1
Tuberculosis	...	5	7	—	—	3	15
Total	...	657	2,367	76	295	1,138	4,590

### OXEN SLAUGHTERED AND CONDEMNED FOR ALL CAUSES.

Year.	No. killed.	Grade No. cond.	% cond.	No. killed.	Native No. cond.	% cond.	No. killed.	Total 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
1934	4,531	664	14.6	10,264	2,230	21.7	14,795	2,894	19.5
1935	4,806	682	14.1	9,007	2,066	22.9	13,813	2,748	19.8
1936	4,422	657	14.8	9,444	2,367	25.0	13,866	3,024	21.8

### OXEN SLAUGHTERED AND CONDEMNED FOR " MEASLES."

Year.	No. killed.	Grade No. cond.	% cond.	No. killed.	Native No. cond.	% cond.	No. killed.	Total 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
1934	4,531	600	13.2	10,264	1,820	17.7	14,795	2,420	16.3
1935	4,806	495	10.2	9,007	1,894	21.0	13,813	2,389	17.2
1936	4,422	417	9.4	9,444	2,132	22.5	13,866	2,549	18.3

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

By EVELYN F. HARTLEY, M.B., Ch.B.(Edin.),

*Medical Officer in Charge.*

On January 1st, 1936, a complete staff of three Health Visitors was appointed by the Municipal Council to continue the work of the native clinics, namely:—Pumwani, Pangani and the K.U.R. Landhies. On June 1st a fourth Health Visitor was appointed to inaugurate the work of the new Indian Clinic. There has been a steady increase in the attendances of both women and children at the clinics apparently due to the fact that each Health Visitor can devote all her time to the families in her particular location. There has been an attempt to reduce the dispensary numbers as the work of the clinic is primarily for ante-natal and child welfare purposes including V.D. treatment. In all the clinics special attention is paid to the home visiting.

#### PUMWANI CLINIC.

The work of this clinic has been carried on throughout the year by Mrs. E. Dugmore. The number of child welfare attendances has risen considerably and there has been comparatively little sickness. In the location in particular, the Health Visitor is often faced with the problem



of chronic bed-ridden cases, discharged from Hospital, who reside in Pumwani and who are unfit for repatriation and these all come under the care of the clinic. The ante-natal cases are sent to the clinic held weekly at the Lady Grigg African Maternity Home. By this arrangement the abnormal cases are more easily admitted for treatment. The attendances at the V.D. clinics are higher than in the other locations—this being the oldest settled area.

In 1935, of 320 patients resident in Pumwani, 63 completed their full course of injections. In 1936 of 260 resident cases, 97 completed their course and of 305 casual attendances (i.e. non-residents) 33 completed their course which, for natives, is a high percentage. The Home Visiting is done by the Health Visitor, one Ayah and two male dressers.

#### PANGANI AND THE N.M.H. CLINICS.

From January 1st the work of this clinic was carried on by Miss J. Smith. In anticipation of the removal of the village in March the Pangani clinic was transferred to the N.M. Housing. A large building was allocated to the Health Department by the Municipality until such time as work on the new clinic should be completed. Miss Smith continued to visit Pangani so as not to lose touch with the residents, many of whom brought their children to the N.M.H. clinic, while a few went to Pumwani. In a few weeks the attendances at the new clinic far exceeded those at Pangani, because in the past the residents of the N.M. Housing considered both Pangani and Pumwani clinics too distant to attend.

The number of attendances at the Child Welfare and V.D. clinics is rapidly approaching that of Pumwani, and the Ante-natal cases are sent to the weekly clinic at the Lady Grigg African Maternity Home. Miss Smith has only one ayah at present but a male dresser is sent over from Pumwani twice weekly.

#### K.U.R. LANDIES CLINIC.

Miss B. Pearson has carried on the work of this clinic throughout the year. A weekly ante-natal clinic is held here as the Maternity Hospital is too far for the women to attend. The attendance at the Child Welfare and V.D. clinics was good, but the population of the Landhies is a moving one—the women and children constantly coming or going to Kisumu thus the cases cannot be followed up. Many women bring their children in from Kikuyu, stop a few days in the location and then return to the reserve.

The Landhies is so grossly over-crowded that there is a great deal of sickness among the children and the infant mortality is high. Dysentery, whooping cough, measles and broncho-pneumonia are prevalent and there have been three cases of cerebrospinal meningitis sent to the Native Civil Hospital during the year. The yaws attendances are high, mostly among the women who come from Kikuyu. Miss Pearson is helped in the clinic and home visiting by two ayahs, and, by the courtesy of the General Manager K.U.R. & H., the Railway lend a boy to assist in the cleaning of the building.

#### THE INDIAN CLINIC.

The building was erected by the Council in the grounds of the Indian Maternity Home and was officially opened by Gladys, Lady Delamere, the Deputy Mayor, on April 7th. The work was inaugurated by Mrs. Gibb on



1st June, and she is continuing in charge pending the acquisition of a suitably qualified Indian Health Visitor. The work here is confined entirely to Ante-natal care and the weighing and supervising of infants and children. Weekly ante-natal and child welfare clinics are held and a great deal of the Health Visitor's time has been spent in home visiting. It is only possible for a small part of the very large Asiatic district to be covered by one Health Visitor who was assisted by a Goanese ayah trained in the Lady Grigg Indian Maternity Home.

There have been no V.D. clinics held and the only dispensary work done has been for the women and children actually attending the clinic. This has been arranged so as not to interfere with the private practice of the many Indian doctors in the town.

The following tables indicate the work performed at the various clinics and also make comparisons with the work of the previous years.

#### CHILD WELFARE CLINICS.

	Pumwani.	Pangani & N.M.H.	K.U.R. Landies.	Indian.	Total.
Clinics held	... 49	49	53	31	182
Attendances	... 7,980	6,088	8,413	2,719	25,202

#### ANTE-NATAL CLINICS.

	African Maternity Hosp. and Pangani.	K.U.R. Landies.	Indian.	Total.
Clinics held	... 57	52	31	140
Attendances	... 1,636	1,595	786	4,017

#### V.D. CLINICS.

	Syphilis attendances.		Yaws attendances.		Total
	New cases.	Old cases.	New cases.	Old cases.	attendances
Pumwani : Women	256	2,500	97	415	3,268
Children	17	77	118	363	575
Total	273	2,577	215	778	3,843
Pangani & N.M.H.					
Women	204	1,132	62	471	1,869
Children	15	88	96	282	481
Total	219	1,220	158	753	2,350
K.U.R. Landhies :					
Women	185	911	54	235	1,385
Children	111	230	137	427	905
Total	296	1,141	191	662	2,290



## DISPENSARIES.

			Attendances.			
			Pumwani.	Pangani & N.M.H.	K.U.R. Landies.	Indian.
			Total.			
Women	...	...	2,678	2,265	5,817	731
Children	...	...	4,736	3,847	15,599	1,849
Total	...	...	7,414	6,112	21,416	2,580

## VISITS BY HEALTH VISITORS AND NATIVE STAFF.

Pumwani	...	...	4,092		
Pangani & N.M.H.	...	...	3,339		
K.U.R. Landhies	...	...	4,248		
Indian	...	...	853	Health Visitors	3,385
				Native Staff	9,147
Total	...	...	12,532		

## COMPARISON OF ATTENDANCES AND VISITS.

	1932	1933	1934	1935	1936
Child Welfare clinics	7,923	11,448	11,698	11,385	25,190
Venereal Disease clinics	4,219	3,432	3,967	6,277	8,703
Dispensaries ...	23,316	19,861	29,066	36,258	38,058
Ante-natal clinics	1,626	1,958	2,198	2,711	3,955
Total attendances	37,084	36,699	46,929	56,631	75,906
Home Visits ...	3,646	4,373	7,738	12,146	12,532

