

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

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Nairobi Municipality
Kenya.

The Royal Society of Tropical Medicine
and Hygiene,

6 MAR 1939

MANSON HOUSE,
28, PORTLAND PLACE,
LONDON, W 1

TENTH
ANNUAL REPORT
OF THE
Medical Officer of Health.

1938





*MUNICIPALITY OF NAIROBI,
Kenya Colony.*

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

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




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TOWN HALL,
NAIROBI,
February 10th, 1939.

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

Your Worship and 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 1938, as required by "The Local Government (Municipalities) Ordinance, 1928, "The Medical Officers of Health Rules, 1929, Sec. 2 (12) d."

I am, Your Worship and Gentlemen,

Your obedient servant,

H. W. TILLING,

M.R.C.S.(Eng.), L.R.C.P.(Lond.), D.P.H.(Lond.),
Medical Officer of Health.

1. GENERAL.

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

The offices of the Public Health Department are situated in the Town Hall.

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

Meteorological tables are included in this report showing the barometric pressure, relative humidity, and temperatures within the Municipality during the year.

The rainfall during 1938 was poor, only 28.16 inches being registered, which is equivalent to 78% of the average rainfall for 32 years. The rainfall during 1937 was over 50 inches but each of the four years previous to this registered a fall below the average. Only four months of the year had falls above the average, namely, February, March, November, and December, almost twice the average falling during the latter month.

The days of rain totalled 108 compared with the average of 110 and the average fall of rain per rainy day amounted to 0.26 inches compared with the average of 0.32.

The average monthly rainfall was 2.34 inches compared with the average of 2.99 inches.

All the seasons with the exception of the short rains were below the average. There were three periods of 20 days or over without rain, during January-February, August-September, and during June.

The estimated population of the Municipality for 1938 was 65,000, being an increase of 3,700 over the estimated figure for the previous year. The increase was shared by all communities.

These figures must be regarded as approximate only, until the next census which is due 1941. The figure given for Natives is considered to be on the conservative side.

During the year 1,436 births were notified, of which 1,067 were of residents and 369 of non-residents, compared with a total of 1,245 notified last year among 963 residents and 282 non-residents.

The true birth rate for all races increased to 15.74, the rates for the communities being European 13.5, Asian 24.91, and Native 12.0. The birth rate for England for 1937 was 14.9 and for British India during 1936 the rate was 35. There was no comparable figure for Natives.

The natural increase for the European community amounted to 7.6 and for the Asian community 10.9, compared with the figures for 1937 of 3.6 and 8.5 respectively.

The natural increase for the Native community was - 3.3, a satisfactory increase over the figure of - 7.2 during 1937.

Thus the natural increase for all races increased during the year from - 7.2 to +1.8.

The percentage of stillbirths to total births among residents showed a slight increase over the previous year, being 3.5% compared with 2.8%, whilst the figure for non-residents decreased from 6.7% to 5.6%. The difference in the figures for residents and non-residents is still marked.

Although the sickness rate for non-fatal illnesses is reported to have been high throughout the year, the death rates for all communities have shown a remarkable decrease compared with the previous year.

The death rate for the European community declined from 6.9 to 5.8, the Asian from 16.4 to 13.9, and the Native from 18.7 to 15.3, whilst the death rate for all races fell from 16.9 to 13.9.

It will be noted that the total number of deaths in Nairobi during 1938 decreased from 1,411 to 1,305, the resident deaths being 911 compared with 1,040 during the previous year, the decrease being shared by all communities.

It is very pleasing to be able to record a decided continued improvement in the infant mortality rate.

The infant mortality rate for all races during 1938 amounted to 249.7 per 1,000 live births, compared with the figure of 309.8 for 1937 and 412.2 for 1936.

The infant mortality rate for the communities was European 90.9, Asian 262.4, and Native 266.6 compared with 109.3, 310.1, and 338.6 respectively for the previous year.

The infant mortality rate for non-Europeans now stands at 264 compared with 324 and 479 for the two previous years.

It is hoped that this substantial continued improvement will be extended into the coming year.

Excluding malaria, the number of notifications of infectious diseases totalled 215 comparing with 179 and 176 during 1937 and 1936. Increases are noted for tuberculosis, enteric fever group, tropical typhus, anthrax, relapsing fever, beri-beri, and encephalitis lethargica, whilst decreases were noted for plague, cerebrospinal meningitis, puerperal sepsis, diphtheria, and scarlet fever.

The non-notifiable conditions, chickenpox, measles, whooping cough, and mumps have been present during the year, but, with the exception of chickenpox, the incidence, judging by hospital admissions, has not been so severe as in 1937.

Chickenpox occurred in considerable number chiefly in the latter half of the year.

The admissions to hospital on account of infectious and communicable diseases during 1938 were slightly greater than in 1937, being 307 compared with 266, whilst the patient days increased from 7,372 to 8,043.

The increase was largely due to admissions for tuberculosis, chickenpox, typhoid fever, relapsing fever, cerebrospinal meningitis, and tropical typhus. Notable decreases were registered for leprosy, whooping cough, mumps, measles, and plague.

Human plague occurred within the Municipality during the year in two series of five cases each, both series being characterised by the sporadic nature of the infection, whilst the second series was concerned with infection of the pneumonic variety.

There is little doubt that the original case brought his infection from the reserves where cases occurred throughout the year, the rapid transport now available making the transfer of infection very easy.

Malaria of local origin was notified in 564 instances compared with 942 instances in 1937. A notable feature during the year was the increase of the quartan infection rate together with a very marked increase in double infections appearing in native labour coming from the Lake area.

Three cases of plasmodium ovale infection were recorded.

The mortality rate of cases notified, namely 3.1%, compares favourably with 3.4%, the figure for 1937.

The death rate from malaria, which has steadily declined the last four years, reached the record figure of 0.27 for the year.

Anti-malarial work was carried out systematically, consisting of straightening and clearing the many water courses, cutting drains, filling depressions, and attending to the concrete canals.

Intensive organised oiling was carried out, 12,223 gallons of oil being used and spraying fluid was issued to the extent of 232 gallons.

Statistics for this disease and details of the methods used will be found in detail in the report.

The total number of rats trapped in the commercial area of the town was 41,989. This constitutes a record.

A percentage of the daily catch is examined at the laboratory and during the year 2,336 were dealt with in this way. Three rats were found to be positive to *B. pestis*.

The new burial site situated off the road to the civil aerodrome has been in regular use and proved satisfactory during the year. The area fenced off will probably have to be extended about the end of 1940.

An ambulance service was instituted during the year, the new Bedford ambulance car arriving in May. This service is becoming increasingly popular, the number of calls registered to the end of the year being 64.

In November, the new water treatment plant was officially opened. Water is now obtained both from the Kikuyu and Ruiru supplies.

The average daily consumption of water amounted to 1,292,543 gallons or 19.73 gallons per head of population.

Frequent bacteriological examinations of the water shows that the quality of the filtrate is highly satisfactory.

Attention is once more drawn in this report to the serious problem caused by the lack of sufficient housing accommodation both for Asians and Natives with the consequential overcrowding and accompanying unsatisfactory conditions.

In the report for last year, the hope was expressed that a scheme for the inspection of milk coming from unregistered sources would be brought into operation.

Although the depot in connection with the scheme has been ready since the beginning of the year, it has not been utilised as approval of the necessary regulations has not been forthcoming.

Work in connection with the scrutiny of building plans and inspections of works in progress again registered a large increase. During the year 2,497 inspections were made by the sanitary inspectors in connection with 548 plans.

Improvement in the sanitation of the town has continued to progress. Over 14,000 feet of sewers were constructed in the commercial area and the sewer outfall works will soon be in operation.

The method of night soil collection by the single bucket system and the disposal by trenching remain unchanged, although there is every reason to anticipate the method of disposal being altered when the outfall works are in use.

The daily number of buckets conserved totalled 3,469 compared with 3,385 during 1937.

There are now 1,861 water closets in use connected to the sewers and a total of 581 septic tanks and 19 conserving tanks are in use.

In spite of only 36 inspector months being available for district duties, 10,260 premises were inspected for nuisances compared with 8,267 during 1937 and 1,277 defects were remedied.

A total of 451 statutory notices were served and 20 dwellings were dealt with under Closing Orders.

The total number of animals slaughtered at the abattoir during the year amounted to 62,914, being 6,939 in excess of the figure for the previous year.

The percentage of oxen condemned for all causes was 13.5%, showing a considerable decrease on the figure for 1937, which was 21.3%. The percentage of oxen condemned for measles also showed a decrease from 19.0% to 16.7%.

The report on Child Welfare Services is well worthy of attention. It will be noted among other items that attendances at the Child Welfare Clinics increased from 36,824 to 37,325 and the number of home visits increased from 15,812 to 17,213.

The only alteration in the number of personnel of the Public Health Department during the year was the appointment of a new Sanitary Inspector, Mr. E. H. Scrivener, as from September 1st.

Two sanitary inspectors were away on overseas leave for a total period of eight months.

The post of Chief Sanitary Inspector has not yet been filled.

The annual expenditure of the Public Health Department during 1938 amounted to £10,883 compared with £10,475 for 1937.

2. 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.

3. METEOROLOGICAL.

The meteorological observations regarding pressure were taken at Kabete Observatory at 5,987 feet and those relating to temperature and humidity were taken at a station in the Railway Offices at 5,495 feet above sea level.

Month.	Atmospheric pressure corrected.	Relative humidity.	TEMPERATURE.				
			Max.	Mean max.	Min.	Mean min.	Mean.
	ins.	%	°F.	°F.	°F.	°F.	°F.
January ...	24.209	63	83.0	78.4	48.1	55.0	66.7
February ...	24.216	58	87.9	82.3	54.0	57.3	69.8
March ...	24.175	62	86.1	82.1	54.2	59.0	70.5
April ...	24.207	73	80.1	77.6	57.1	59.7	68.7
May ...	24.229	72	81.1	76.0	52.9	57.6	66.8
June ...	24.283	71	78.0	72.4	48.1	54.1	63.3
July ...	24.263	70	81.8	72.7	47.9	53.4	63.1
August ...	24.240	63	80.6	74.6	48.0	53.1	63.9
September ...	24.253	61	84.3	77.8	48.7	54.6	66.2
October ...	24.231	59	84.2	79.0	53.1	57.1	68.1
November ...	24.221	68	84.2	76.4	53.0	57.8	67.1
December ...	24.185	70	80.0	75.6	53.0	57.8	66.7
YEAR ...	24.226	66	87.9	77.1	47.9	56.4	66.7

4. RAINFALL.

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

Month.	RAINFALL.			DAYS OF RAIN.		
	1938.	Average 32 years.		1938.	Average 32 years.	
January ...	1.00	1.61	...	5	5	...
February ...	2.40	2.29	...	4	5	...
March ...	4.81	4.54	...	9	10	...
April ...	3.06	8.06	...	16	17	...
May ...	3.61	5.29	...	15	16	...
June ...	0.45	1.75	...	4	8	...
July ...	0.24	0.64	...	6	5	...
August ...	0.16	0.95	...	4	6	...
September ...	0.88	1.08	...	5	5	...
October ...	1.43	2.20	...	8	8	...
November ...	4.77	4.74	...	17	15	...
December ...	5.35	2.75	...	15	10	...
Annual ...	28.16	35.90	...	108	110	...

Nairobi registered a poor rainfall during 1938, only 28.16 inches being recorded. During the previous year the rainfall was 46% above the average although for four years, prior to this, the rainfall was below the average.

February, March, and November registered rainfalls slightly above the average, whilst during December almost twice the average amount fell.

April with 3.06 inches was the fourth lowest record for that month and August with 0.16 inches tied with the previous year for the lowest recorded fall for that month, excepting 1918 when no rain fell.

December with 5.35 inches was the fourth highest record for that month.

The average monthly rainfall for the year was 2.34 inches compared with the average over 32 years of 2.99 inches.

The days of rain totalled 109 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 over 32 years of 0.32 inches.

SEASONAL RAINFALL.

SEASON.	1938.	Average 32 years.
Short dry season (January-February) ...	3.40	3.90
Long rains (March, April, May) ...	11.48	17.89
Long dry season (June to September) ...	1.73	4.42
Short rains (October, November, December) ...	11.55	9.69
Annual ...	28.16	35.90

It will be noted that all the seasons, with the exception of the short rains, were below the average to the extent of about 12%, 35%, and 60% respectively.

The short rainy season was 19% in excess of the average.

The longest periods without rain were 21 days on two occasions, the first from January 22nd to February 12th and the other from August 20th to September 10th. The next longest period without rain was 20 days from June 4th to June 24th.

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	1937	52.85
1910	25.64	1924	26.72	1938	28.16

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

5. POPULATION.

Race.	Population.
European	6,500
Asian	18,500
Native and others	40,000
TOTAL	65,000

This total shows an increase compared with 1938 of 3,700, the increase being shared by all communities.

It is estimated that Europeans have increased by 500, Asians by 1,200, and Natives by 2,000.

Until the next Census, which is due in 1941, is compiled, these figures must be regarded as approximate only, especially that given for Natives which is considered to be on the conservative side.

6. MARRIAGES.

The following marriages were celebrated in Nairobi during 1938. The figures are not corrected for persons habitually resident in Nairobi.

British	77
French	1
German	10
Dutch	2
American	1
Swiss	1
Seychellois	5
Goan	5
Indian	1

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7. BIRTHS.

"The Nairobi Municipality (Notification of Births) By-laws, 1933," requiring the births of all races to be notified, has now been in operation for five years, the results being progressively more accurate each year.

The statistics obtained from these notifications are set out in the table under:—

NOTIFICATION OF BIRTHS, 1938.

		RESIDENT.						NON-RESIDENT.						TOTAL.	
		Births.			Stillbirths.			Births.			Stillbirths.			Births.	S.B.
		M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.		
British	...	42	43	85	—	1	1	27	23	50	—	1	1	135	2
American	...	—	—	—	—	—	—	—	1	1	—	—	—	1	—
French	...	—	2	2	—	—	—	—	—	—	—	—	—	2	—
Danish	...	—	—	—	—	—	—	1	—	1	—	—	—	1	—
Swedish	...	—	—	—	—	—	—	—	1	1	—	—	—	1	—
Austrian	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—
Polish	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—
Greek	...	—	—	—	—	—	—	1	—	1	—	—	—	1	—
Indian	...	213	190	403	10	1	11	12	7	19	2	—	2	422	13
Goan	...	35	34	69	—	—	—	5	2	7	1	—	1	76	1
Cingalese	...	—	1	1	—	—	—	—	—	—	—	—	—	1	—
Mauritian	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—
Seychellois	...	5	1	6	—	1	1	2	1	3	—	1	1	9	2
Native	...	253	242	495	14	11	25	150	129	279	6	10	16	774	41
Arab	...	1	—	1	—	—	—	1	—	1	—	—	—	2	—
Nubian	...	—	1	1	—	—	—	2	3	5	—	—	—	6	—
Sudanese	...	1	—	1	—	—	—	—	—	—	—	—	—	1	—
Abyssinian	...	—	—	—	—	—	—	1	—	1	—	—	—	1	—
Total	...	553	514	1067	24	14	38	202	167	369	9	12	21	1436	59

MULTIPLE BIRTHS.

Twins were recorded in eight instances among residents, one being European with children of different sexes; three being Asian, in each case the sex being females; and the remaining four, Native in which, in three cases, the sexes were both females and one case both were of the male sex.

Among non-residents five twins were recorded, one being Seychellois with divided sexes, one Indian with both male sex, and three Native, two of which were both males and the remaining one, both females.

BIRTH RATES.

In the following table will be found the crude and true birth rates for the races, together with the natural increase.

It will be noted that the true birth rate for all races is 15.7 and the crude rate 16.3. This compares with the figures for 1937 of 14.6 and 15.7 respectively. This difference would appear to be largely due to the more accurate notification of births.

It is of interest to note that the birth rate for England and Wales for 1937 was 14.9. For British India, during 1936, the birth rate was 35. No comparable figure can be obtained for the Native race.

NATURAL INCREASE.

The natural increase for Europeans works out at 7.69 per thousand persons, the Asian at 10.97 per thousand persons, whilst the figure of -3.37 for Natives shows an improvement on the figure of -7.2 for last year.

The natural increase for all races showed an improvement from -1.7 per thousand persons to +1.8.

BIRTH RATES AND NATURAL INCREASE.

	No. of births.	Crude birth rate.	Live births.	True birth rate.	No. of deaths.	Natural increase.	Rate per 1,000 population.
European ...	89	13.69	88	13.53	38	50	7.69
Asian ...	472	25.51	461	24.91	258	203	10.97
Natives and others ...	506	12.65	480	12.00	615	-136	-3.37
Total ...	1067	16.32	1029	15.74	911	118	1.80

STILLBIRTHS.

In the tables following will be found figures relating to the incidence of stillbirths. As in previous years a considerable difference between the figures for residents and non-residents is noted.

STILLBIRTHS AMONG RESIDENTS.

Race.	Births.	Stillbirths.	Percentage to births.
European ...	89	1	1.1
Goan ...	69	—	0.0
Indian ...	403	11	2.7
Natives ...	495	25	5.0
Others ...	11	1	9.0
Total ...	1067	38	3.5

STILLBIRTHS AMONG NON-RESIDENTS.

Race.	Births.	Stillbirths.	Percentage to births.
European ...	54	1	1.8
Goan ...	7	1	14.2
Indian ...	19	2	10.5
Natives ...	279	16	5.9
Others ...	10	1	10.0
Total ...	369	21	5.6

8. DEATHS.

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

Rates have been calculated on the estimated population for 1938.

The total number of deaths reported in Nairobi during the year was 1,305, equivalent to a crude death rate for all races of 19.96 per thousand persons, compared with a rate of 23.01 for 1937.

The number of deaths from all causes among persons stated to be normally resident in Nairobi was 911, equivalent to a recorded death rate for all races of 13.93 per thousand compared with 16.96 for 1937.

Of the 911 deaths among residents, 622 were males and 289 females.

257, or 28.21% of the deaths, were of infants under one year of age.

38 deaths occurred among Europeans, 25 being males and 13 females, equivalent to a rate of 5.84 per thousand persons of that race.

258 deaths occurred among the Asian community, 161 being males and 97 females, equivalent to a rate of 13.94 per thousand persons of that race.

615 deaths occurred among Natives and other races, 436 being males and 179 females, equivalent to a rate of 15.37 per thousand persons.

DEATHS BY RACE AND SEX.

1938.		White.	Indian.	Goan.	Native.	Somali.	Arab.	Nubian.	Mauritian.	Seychellois.	Abyssinian.	Sudanese.	Total.
Resident :													
M.	...	25	149	12	412	8	6	—	1	6	2	1	622
F.	...	13	96	1	170	5	1	—	—	3	—	—	289
Total	...	38	245	13	582	13	7	—	1	9	2	1	911
Non-resident :													
M.	...	15	4	—	237	1	—	2	—	—	—	—	259
F.	...	3	1	—	131	—	—	—	—	—	—	—	135
Total	...	18	5	—	368	1	—	2	—	—	—	—	394
TOTAL	...	56	250	13	950	14	7	2	1	9	2	1	1305

COMPARISON OF DEATH RATES FOR RACES FOR 13 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
1937	...	6.9	...	16.4	...	18.7	...	16.9
1938	...	5.8	...	13.9	...	15.3	...	13.9

AVERAGE DEATH RATES.

Race.		10 years' average 1929-38		5 years' average 1929-35.		5 years' average 1934-38.		1938.
European ...	...	7.3	...	7.5	...	7.2	...	5.8
Asiatic ...	...	15.4	...	16.0	...	14.7	...	13.9
Native ...	...	15.3	...	13.9	...	16.7	...	15.3
All races	...	14.4	...	13.7	...	15.0	...	13.9

It will be noted that the European death rate, although varying from year to year, has remained a fairly constant average during the two five year periods, but the rate for 1938 has declined by 1.5 below the ten years average.

There has been a steady decline in the Asian death rate during the two five years periods and the rate for 1938 shows a very satisfactory decline of 1.5 below the ten years average.

The death rate for Natives during 1938 of 15.3 showed a most satisfactory decline of 3.4 below the figure for the previous year. During the past ten years the Native death rate has fluctuated between 10.7 and 18.7 the average being 15.3.

MONTHLY INCIDENCE OF DEATHS BY RACE.

Month.	White.	Indian.	Goan.	Native.	Somali.	Arab.	Mauritian.	Seychellois.	Abyssinian.	Sudanese.	Total.	Percentage of total.
January ...	1	13	3	44	1	2	1	—	—	1	66	7.2
February ...	2	17	—	53	1	1	—	1	—	—	75	8.2
March ...	6	20	—	35	1	1	—	3	—	—	66	7.2
April ...	6	18	—	52	1	—	—	1	—	—	78	8.6
May ...	2	17	2	52	—	—	—	—	1	—	74	8.1
June ...	2	25	—	56	3	—	—	1	—	—	87	9.6
July ...	3	26	3	57	1	2	—	—	1	—	93	10.2
August ...	4	27	1	51	3	1	—	1	—	—	88	9.7
September ...	5	26	1	56	—	—	—	—	—	—	88	9.7
October ...	—	20	1	45	—	—	—	1	—	—	69	7.6
November ...	3	15	1	35	2	—	—	—	—	—	56	6.1
December ...	4	21	1	44	—	—	—	1	—	—	71	7.8
Total ...	38	245	13	582	13	7	1	9	2	1	911	100.0

DEATH BY QUARTERS.

	Number of deaths.	Percentage of total.
First quarter ...	207	22.5
Second quarter ...	239	26.0
Third quarter ...	269	29.3
Fourth quarter ...	196	22.2
Total ...	911	100.0

The most deaths occurred in July (93), August (88), September (88), and the fewest in November (56), January (66), and March (66).

CAUSES OF DEATHS BY GROUP AND RACE.

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Arab.	Mauritian.	Seychellois.	Abyssinian.	Sudanese.	Total.
1. General diseases ...	5	31	1	101	—	1	—	—	1	—	140
2. General diseases (not included above) ...	2	8	—	9	2	—	—	—	—	—	21
3. Diseases of the nervous system ...	5	13	3	37	—	—	—	1	—	1	60
4. Diseases of the circulatory system ...	5	7	—	4	1	—	—	—	—	—	17
5. Diseases of the respiratory system ...	4	82	3	281	7	5	1	4	—	—	387
6. Disease of the digestive system ...	5	16	2	34	1	—	—	—	—	—	58
7. Non-venereal diseases of the genito urinary system and annexa ...	—	13	1	4	—	—	—	—	1	—	19
8. The puerperal state ...	—	4	—	5	—	—	—	—	—	—	9
9. Diseases of the skin ...	—	1	—	—	—	—	—	—	—	—	1
10. Diseases of the bones ...	—	—	—	—	—	—	—	—	—	—	—
11. Congenital malformations ...	—	2	—	5	—	—	—	—	—	—	7
12. Diseases of early infancy ...	6	45	2	33	—	1	—	3	—	—	90
13. Old age ...	2	3	—	5	2	—	—	—	—	—	12
14. External causes ...	4	9	—	30	—	—	—	—	—	—	43
15. Ill-defined causes ...	—	11	1	34	—	—	—	1	—	—	47
Total ...	38	245	13	582	13	7	1	9	2	1	911

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

International cause of death.	Number.	% of total.	Rate per 1,000 population.
1. General diseases	149	15.37	2.142
2. General diseases (not included above) ...	12	2.30	0.321
3. Diseases of nervous system	60	6.59	0.918
4. Diseases of the circulatory system ...	17	1.86	0.260
5. Diseases of the respiratory system ...	387	42.48	5.921
6. Diseases of the digestive system ...	58	6.37	0.887
7. Non-venereal diseases of the genito-urinary system and annexa	19	2.08	0.290
8. The puerperal state	9	0.99	0.137
9. Diseases of the skin	1	0.11	0.015
10. Diseases of the bones	—	—	—
11. Congenital malformations	7	0.77	0.107
12. Diseases of early infancy	90	0.88	1.377
13. Old age	12	1.32	0.183
14. External causes	43	4.72	0.657
15. Ill-defined causes	47	5.16	0.719
Total	911	100.00	13.934

The incidence of the various causes of death in relation to the groups is commented upon hereunder.

The figures in brackets in the text relate to the return for 1937.

Regarding the incidence of deaths in the various groups, compared with 1937, it will be seen that there has been a marked decrease under General Diseases, and also under Respiratory and Digestive Diseases, whilst there has been an increase in the groups for Nervous Diseases and Diseases of Early Infancy, there is also an increase in the final group of Ill-defined causes, this increase being largely due to the Police, on the score of expense, not referring cases to the Government Pathologist.

“Diseases of the respiratory system” as heretofore is the group concerned with the greatest number of deaths.

This group accounted for 387 (457) deaths or 42.4% (43.9%) of the total deaths, equivalent to a rate of 5.92 (7.45) per thousand of population.

Deaths under this heading were:—

Pneumonia	263 (301)
Broncho-pneumonia	102 (136)
Bronchitis	15 (8)
Asthma	3 (2)
Empyema	1 (1)
Laryngismus stridulus	1
Frontal sinus abscess	1

“General diseases” is the next important group in point of numbers with 140 (184) deaths or 15.3% (17.6%) of the total deaths equal to a rate of 2.14 (3.00) per thousand population.

Deaths under this group include:—

Tuberculosis	32 (30)	Influenza	3 (3)
Malaria	18 (38)	Encephalitis leth.	3
Cerebrospinal meningitis	16 (18)	Whooping cough	2 (1)
Dysentery	14 (16)	Measles	1 (5)
Septicaemia	13 (16)	Diphtheria	1 (4)
Typhoid fever	13 (9)	Erysipelas	1 (1)
Plague	10 (22)	Yaws	1
Syphilis	8 (15)	Gonorrhoea	1
Relapsing fever	3		

Deaths under the heading "Diseases of early infancy" totalled 90 (77) or 9.8% (7.4%) of the total deaths, the equivalent rate per thousand population being 1.37 (1.25).

The causes of deaths were:—

Congenital debility ...	41 (37)	Omphalitis ...	1
Prematurity ...	39 (31)	Purpura ...	1
Asphyxia neonatorum ...	4 (3)	Malaria ...	1
Pulmonary collapse ...	2	Heart disease ...	1

The group "Diseases of the nervous system" was responsible for 60 (39) deaths or 6.5% (3.7%) of the total deaths with an equivalent rate per thousand population of 0.91 (0.63).

The details were:—

Meningitis ...	22 (10)	Epilepsy ...	4 (1)
Cerebral haemorrhage ...	14 (16)	Cerebral abscess ...	1 (1)
Convulsions ...	7 (8)	Chorea ...	1
Mania ...	6	Mastoiditis ...	1 (1)
Encephalitis ...	4		

The group headed "Diseases of the digestive system" is next in importance with 58 (82) or 6.3% (7.8%) of the total deaths equivalent to a rate of 0.88 (1.33) per thousand population.

The individual causes were:—

Diarrhoea (under 2) ...	30 (57)	Intestinal obstruction ...	3 (8)
Diarrhoea (over 2) ...	9 (11)	Tonsillitis ...	1
Cirrhosis of liver ...	5	Intestinal haemorrhage ...	1
Peritonitis ...	5 (2)	Hydated cyst of liver ...	1
Appendicitis ...	3 (1)	Abscess of liver ...	1

"Ill-defined" is next in order of numbers with 47 (31) deaths or 5.1% (2.9%) of the total deaths, the equivalent rate per thousand population being 0.71 (0.50).

The recorded causes under this group were:—

Natural causes ...	25 (5)	Debility ...	2 (1)
Heart failure ...	15 (8)	P.U.O. ...	1 (5)
Unknown ...	3 (9)	Post operative shock ...	1 (1)

"External causes" is next in the list with 43 (46) deaths or 4.7% (4.4%) of the total deaths equivalent to a rate of 0.65 (0.75) per thousand population.

Deaths under this group include:—

Road accident ...	21 (13)	Drowning ...	3 (3)
Suicide ...	8 (6)	Homicide ...	3 (3)
Judicial hanging ...	4 (7)	Suffocation ...	1
Burns ...	4 (10)		

The second group of "General diseases" comes next with 21 (49) deaths or 2.3% (4.7%) of the total deaths making a rate per thousand population of 0.32 (0.79).

The diseases concerned were:—

Diabetes ...	5 (8)	Scurvy ...	1 (3)
Rheumatism ...	3 (4)	Rickets ...	1 (9)
Kikuyu disease ...	3 (2)	Goitre ...	1
Anaemia ...	2 (2)	Ruptured spleen ...	1 (1)
Cancer of uterus ...	1	Alcoholism ...	1 (2)
Epithelioma of leg ...	1	Haemophilia ...	1

"Non-venereal diseases of the genito-urinary system and annexa" was responsible for 19 (16) deaths or 2.0% (1.5%) of the total deaths, the equivalent rate per thousand being 0.29 (0.26).

Nephritis ...	18 (11)
Pyelonephritis ...	1 (2)

"Diseases of the circulatory system" accounted for 17 (22) deaths or 1.8% (2.1%) of the total deaths with an equivalent rate per thousand population of 0.26 (0.35).

The diseases under this heading include:—

Heart disease	...	...	10 (19)
Endocarditis	...	...	5 (2)
Angina pectoris	...	...	2

The group "Old age" was responsible for 12 (10) deaths or 1.3% (0.9%) of the total deaths, equivalent to a rate of 0.18 (0.16) per thousand population.

"The puerperal state" was accountable for 9 (14) deaths or 0.9% (1.3%) of the total deaths making a rate of 0.13 (0.22) per thousand population.

The diseases concerned were:—

Puerperal sepsis	...	...	3 (6)	Ectopic gestation	...	...	1
Obstructed labour	...	...	2	Labour	...	...	1 (5)
Eclampsia	...	...	2 (1)				

There were 7 (8) deaths recorded under "Congenital malformation" or 0.7% (0.7%) of the total deaths, equivalent to a rate of 0.1 (0.1) per thousand population.

The items were:—

Congenital heart disease	...	2 (3)	Cleft palate	...	...	1 (1)
Monstrosity	...	2 (1)	Spina bifida	...	...	1 (1)
Hydrocephalus	...	1				

One death, namely from pemphigus, was recorded under the group "Diseases of the skin."

There were no deaths recorded under the heading "Diseases of the bones."

CAUSES OF DEATHS.

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Arab.	Seychellois.	Abyssinian.	Sudanese.	Mauritian.	TOTAL.
GROUP I. GENERAL DISEASES.											
1. Typhoid fever	2	2	—	9	—	—	—	—	—	—	13
3. Relapsing fever	—	—	—	3	—	—	—	—	—	—	3
5. Malaria	1	5	—	12	—	—	—	—	—	—	18
7. Measles	—	1	—	—	—	—	—	—	—	—	1
9. Whooping cough	—	1	—	1	—	—	—	—	—	—	2
10. Diphtheria	—	1	—	—	—	—	—	—	—	—	1
11. Influenza	—	2	—	1	—	—	—	—	—	—	3
16. Dysentery	—	2	—	11	—	1	—	—	—	—	14
17. Plague	—	8	—	2	—	—	—	—	—	—	10
21. Erysipelas	—	1	—	—	—	—	—	—	—	—	1
23. Encephalitis lethargica	—	—	—	3	—	—	—	—	—	—	3
24. Cerebrospinal meningitis	—	—	1	15	—	—	—	—	—	—	16
25. Yaws	—	—	—	1	—	—	—	—	—	—	1
31. Pulmonary tuberculosis	—	1	—	23	—	—	—	1	—	—	25
32. Tuberculous meningitis	—	—	—	1	—	—	—	—	—	—	1
36. Tuberculous adenitis	—	—	—	1	—	—	—	—	—	—	1
37. Disseminated tuberculosis	1	—	—	4	—	—	—	—	—	—	5
38. Syphilis	—	—	—	8	—	—	—	—	—	—	8
40. Gonorrhoea	—	—	—	1	—	—	—	—	—	—	1
41. Septicaemia	1	7	—	5	—	—	—	—	—	—	13

CAUSES OF DEATHS (Continued).

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Arab.	Seychellois.	Abyssinian.	Sudanese.	Mauritian.	TOTAL.
GROUP II. GENERAL DISEASES (not included above).											
46. Cancer of uterus ...	—	—	—	—	1	—	—	—	—	—	1
49. Epithelioma of leg ...	—	—	—	1	—	—	—	—	—	—	1
51. Rheumatism ...	—	3	—	—	—	—	—	—	—	—	3
53. Scurvy ...	—	—	—	1	—	—	—	—	—	—	1
Kikuyu disease ...	—	—	—	3	—	—	—	—	—	—	3
56. Rickets ...	—	1	—	—	—	—	—	—	—	—	1
57. Diabetes ...	—	3	—	1	1	—	—	—	—	—	5
58. Anaemia ...	—	1	—	1	—	—	—	—	—	—	2
60. Goitre ...	—	—	—	1	—	—	—	—	—	—	1
64. Ruptured spleen ...	—	—	—	1	—	—	—	—	—	—	1
66. Alcoholism ...	1	—	—	—	—	—	—	—	—	—	1
69. Haemophilia ...	1	—	—	—	—	—	—	—	—	—	1
GROUP III. DISEASES OF NERVOUS SYSTEM.											
70. Cerebral abscess ...	—	1	—	—	—	—	—	—	—	—	1
Encephalitis ...	—	2	—	2	—	—	—	—	—	—	4
71. Meningitis ...	1	3	2	16	—	—	—	—	—	—	22
74. Cerebral haemorrhage ...	4	2	1	6	—	—	1	—	—	—	14
77. Mania ...	—	—	—	5	—	—	—	—	1	—	6
78. Epilepsy ...	—	1	—	3	—	—	—	—	—	—	4
80. Convulsions ...	—	4	—	3	—	—	—	—	—	—	7
84. Chorea ...	—	—	—	1	—	—	—	—	—	—	1
86. Mastoiditis ...	—	—	—	1	—	—	—	—	—	—	1
GROUP IV. DISEASES OF THE CIRCULATORY SYSTEM.											
88. Endocarditis ...	1	2	—	2	—	—	—	—	—	—	5
89. Angina pectoris ...	2	—	—	—	—	—	—	—	—	—	2
90. Diseases of the heart ...	2	5	—	2	1	—	—	—	—	—	10
GROUP V. DISEASES OF THE RESPIRATORY SYSTEM.											
97. Frontal sinus abscess ...	1	—	—	—	—	—	—	—	—	—	1
98. Laryngismus stridulus ...	—	1	—	—	—	—	—	—	—	—	1
99. Bronchitis ...	—	7	—	7	1	—	—	—	—	—	15
100. Broncho-pneumonia ...	—	31	2	68	—	—	1	—	—	—	102
101. Pneumonia ...	3	41	—	204	6	5	3	—	—	1	263
102. Empyema ...	—	—	—	1	—	—	—	—	—	—	1
105. Asthma ...	—	2	1	—	—	—	—	—	—	—	3
GROUP VI. DISEASES OF THE DIGESTIVE SYSTEM.											
109. Tonsillitis ...	—	—	—	1	—	—	—	—	—	—	1
113. Diarrhoea (under 2) ...	—	14	—	15	1	—	—	—	—	—	30
114. Diarrhoea (over 2) ...	—	1	1	7	—	—	—	—	—	—	9
117. Appendicitis ...	2	—	1	—	—	—	—	—	—	—	3
118. Intestinal obstruction ...	—	1	—	2	—	—	—	—	—	—	3
119. Intestinal haemorrhage ...	—	—	—	1	—	—	—	—	—	—	1
121. Hydatid cyst of liver ...	—	—	—	1	—	—	—	—	—	—	1
122. Cirrhosis of liver ...	2	—	—	3	—	—	—	—	—	—	5
124. Abscess of liver ...	1	—	—	—	—	—	—	—	—	—	1
126. Peritonitis ...	—	—	—	5	—	—	—	—	—	—	5
GROUP VII. NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.											
128. Acute nephritis ...	—	2	—	1	—	—	—	—	—	—	3
129. Chronic nephritis ...	—	11	1	2	—	—	—	1	—	—	15
131. Pyelonephritis ...	—	—	—	1	—	—	—	—	—	—	1

CAUSES OF DEATHS (Continued).

International cause of death.	White.	Indian.	Goan.	Native.	Somali.	Arab.	Seychellois.	Abyssinian.	Sudanese.	Mauritian.	Total.
GROUP VIII. THE PUERPERAL STATE.											
143. Ectopic gestation ...	—	—	—	1	—	—	—	—	—	—	1
145. Obstructed labour ...	—	1	—	1	—	—	—	—	—	—	2
146. Puerperal sepsis ...	—	—	—	3	—	—	—	—	—	—	3
147. Labour ...	—	1	—	—	—	—	—	—	—	—	1
148. Eclampsia ...	—	2	—	—	—	—	—	—	—	—	2
GROUP IX. DISEASES OF THE SKIN.											
154. Pemphigus ...	—	1	—	—	—	—	—	—	—	—	1
GROUP X. DISEASES OF THE BONES.											
GROUP XI. CONGENITAL MALFORMATION.											
159. Hydrocephalus ...	—	—	—	1	—	—	—	—	—	—	1
Cleft palate ...	—	1	—	—	—	—	—	—	—	—	1
Congenital heart disease ..	—	—	—	2	—	—	—	—	—	—	2
Spina bifida ...	—	1	—	—	—	—	—	—	—	—	1
Monstrosity ...	—	—	—	2	—	—	—	—	—	—	2
GROUP XII. DISEASES OF EARLY INFANCY.											
160. Marasmus ...	1	21	—	17	—	1	1	—	—	—	41
161. Prematurity ...	5	15	2	15	—	—	2	—	—	—	39
162. Asphyxia neonatorum ...	—	4	—	—	—	—	—	—	—	—	4
Omphalitis ...	—	1	—	—	—	—	—	—	—	—	1
Purpura ...	—	—	—	1	—	—	—	—	—	—	1
Malaena ...	—	1	—	—	—	—	—	—	—	—	1
Congenital heart disease ..	—	1	—	—	—	—	—	—	—	—	1
Pulmonary collapse ...	—	2	—	—	—	—	—	—	—	—	2
GROUP XIII. OLD AGE.											
164. Old age ...	2	3	—	5	2	—	—	—	—	—	12
GROUP XIV. EXTERNAL CAUSES.											
165. Suicide by poison ...	1	—	—	—	—	—	—	—	—	—	1
168. Suicide by hanging ...	—	1	—	5	—	—	—	—	—	—	6
170. Suicide by firearms ...	1	—	—	—	—	—	—	—	—	—	1
179. Burns ...	—	2	—	1	—	—	—	—	—	—	3
180. Suffocation ...	—	—	—	1	—	—	—	—	—	—	1
182. Drowning ...	—	—	—	3	—	—	—	—	—	—	3
188. Road accident ...	1	5	—	15	—	—	—	—	—	—	21
197. Homicide by firearms ...	1	—	—	—	—	—	—	—	—	—	1
198. Homicide by cutting instruments ...	—	1	—	—	—	—	—	—	—	—	1
199. Homicide by other means ...	—	—	—	1	—	—	—	—	—	—	1
202. Judicial hanging ...	—	—	—	4	—	—	—	—	—	—	4
GROUP XV. ILL-DEFINED CAUSES.											
205. Heart failure ...	—	8	—	6	—	—	1	—	—	—	15
Debility ...	—	1	—	1	—	—	—	—	—	—	2
Natural causes ...	—	—	1	24	—	—	—	—	—	—	25
P.U.O. ...	—	1	—	—	—	—	—	—	—	—	1
Post-operative shock ...	—	1	—	—	—	—	—	—	—	—	1
Unknown ...	—	—	—	3	—	—	—	—	—	—	3
TOTAL ...	38	245	13	582	13	7	9	2	1	1	911

AGE GROUP DISTRIBUTION OF POPULATION AND DEATHS BY RACES.

EUROPEAN.						ASIATIC.						NATIVE.					
POPULATION.			DEATHS.			POPULATION.			DEATHS.			POPULATION.			DEATHS.		
Age group.	Est. distn.	Est. pop.	No.	% of age group.	Distribution.	Est. distn.	Est. pop.	No.	% of age group.	Distribution.	Est. distn.	Est. pop.	No.	% of age group.	Distribution.	Est. distn.	Est. pop.
0-1	37,865	246	8	3.25	210,520	62,319	1,153	136	11.79	527,138	...	Not known.	169	Not known.	274,794	...	...
2-4	55,548	361	—	—	—	93,620	1,732	13	0.75	50,389	...	...	23	...	37,398	...	...
5-9	81,706	531	—	—	—	111,620	2,065	4	0.19	15,504	...	...	22	...	35,772	...	...
10-14	50,914	331	1	0.30	26,315	79,755	1,475	2	0.13	7,752	...	...	21	...	34,146	...	...
15-19	45,609	296	2	0.67	52,630	91,716	1,697	5	0.29	19,380	...	...	20	...	32,520	...	...
20-24	82,743	538	—	—	—	135,989	2,516	10	0.39	38,760	...	...	50	...	81,300	...	...
25-29	124,754	811	2	0.24	52,630	119,539	2,211	16	0.72	62,017	...	...	148	...	240,648	...	...
30-34	126,645	823	—	—	—	99,941	1,849	13	0.70	50,389	...	...	76	...	123,576	...	...
35-39	117,864	766	—	—	—	72,306	1,338	12	0.89	46,512	...	...	34	...	55,284	...	...
40-44	94,644	615	6	0.97	157,890	52,732	976	9	0.92	34,884	...	...	10	...	16,260	...	...
45-49	66,340	431	1	0.23	26,315	31,982	592	9	1.52	34,884	...	...	12	...	19,512	...	...
50-54	48,692	316	6	1.89	157,890	20,185	373	9	2.41	34,884	...	...	14	...	22,764	...	...
55-59	29,877	194	4	2.06	105,260	7,402	137	5	3.64	19,380	...	...	1	...	1,626	...	...
60-64	18,597	121	4	3.30	105,260	9,164	169	4	2.36	15,504	...	...	9	...	14,634	...	...
65-69	9,268	60	1	1.66	26,315	4,935	91	4	4.39	15,504	...	...	2	...	3,252	...	...
70-74	5,121	33	—	—	—	3,313	61	3	4.91	11,629	...	...	1	...	1,626	...	...
75-79	2,560	17	2	11.76	52,630	1,504	28	—	—	—	...	...	1	...	—	...	...
80-84	0,914	6	—	—	—	1,363	25	1	4.00	3,876	...	...	—	...	—	...	...
85-89	0,060	4	1	25.00	26,315	0,258	5	2	40.00	7,752	...	...	—	...	—	...	...
90-94	—	—	—	—	—	0,188	3	—	—	—	...	...	—	...	—	...	...
95-99	—	—	—	—	—	0,164	3	1	33.33	3,876	...	...	2	...	3,252	...	...
100	—	—	—	—	—	0,005	1	—	—	—	...	...	—	...	—	...	...
	999,990	6,500	38	0.58	999,970	1,000,000	18,500	258	1.39	1,000,000	...	40,000	615	...	999,990	...	...

Five Asian deaths recorded as "adults" have been included in groups 20-39.

85 Native deaths recorded as "adults" have been included in the groups 20-39, and seven recorded as "children" have been included in groups 2-14.

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.

9. INFANT MORTALITY.

The total number of deaths in infants under one year of age during 1938 was 257 or 28.2% of the total deaths, compared with 290 and 27.8% during the previous year.

Reference to the age distribution table in the previous section shows among Europeans, out of every 1,000 deaths, 210 were of the 0-1 age group and that 3.25% of that age group died.

Among Asians, of every 1,000 deaths, 527 were of the 0—1 age group and 11.79% of that age group died.

Among Natives and others, of every 1,000 deaths, 274 were of the 0—1 group.

The death distribution for this group, during 1938, shows an improvement over 1937 to the extent of 6 for Asians and 19 for Natives, whilst the rate among Europeans shows an increase of 47.

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

INFANT DEATHS.

Race.	Infant deaths.	Total deaths.	Percentage of total deaths.
White	8	38	21.05
Asiatic	121	258	46.89
Native and other ...	128	615	20.81
ALL RACES	257	911	28.21

INFANT DEATHS FOR TEN YEARS.

	PERCENTAGE OF TOTAL DEATHS.										Average 10 years
	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	
White	23.7	13.2	12.0	9.6	5.4	17.3	8.8	8.0	16.66	21.05	13.5
Asiatic	44.9	42.7	44.6	45.8	52.2	42.1	50.9	54.0	47.01	46.89	47.1
Native	15.4	10.6	20.6	17.3	21.2	19.2	24.1	30.8	20.89	20.81	20.0
ALL RACES	24.3	20.6	29.5	28.0	30.7	26.5	31.1	36.9	27.88	28.21	28.3

It will be noted that the percentage of infant deaths to total deaths for all races during 1938 was about the same as the ten years' average, although slightly higher than the figure for 1937.

For Europeans the rate showed an increase, but for the Asian and Native communities the rate remained about the same.

The true infant mortality, that is the rate of infant deaths per thousand live births, is set out in the table under.

INFANT MORTALITY RATES.

Race.	Live births.	Deaths.	Per 1,000 live births.
White	88	8	90.9
Asiatic	461	121	262.4
Native	480	128	266.6
TOTAL	1029	257	249.7

It is pleasing to note that all the rates show a decided improvement on last year's figures.

It is also pleasing to note that the infant mortality rate for Non-Europeans now stands at 264, compared with 324 and 479 for the year's 1937 and 1936 respectively. It is hoped that, as the work of the Clinics continues, this rate will decrease still more.

As it is of practical interest to know at what ages these infant deaths occurred, the following tables are appended.

DEATHS AT ONE MONTH OR UNDER.

Race.		Weeks.				One month or under.
		1	2	3	4	
WHITE.	Deaths	5	—	—	1	6
	Percentage live births ...	5.6	—	—	1.1	6.8
ASIATIC.	Deaths	30	13	9	9	61
	Percentage live births ...	6.5	2.8	1.9	1.9	13.2
NATIVE.	Deaths	28	6	2	8	44
	Percentage live births ...	6.8	1.2	0.4	1.6	9.1
TOTAL.	Deaths	63	19	11	18	111
	Percentage live births ...	6.1	1.8	1.0	1.7	10.7

DEATHS TO SIX MONTHS.

Race.		1	2	3	4	5	6	6 months or under.
WHITE.	Deaths	6	—	—	—	1	1	8
	% live births	6.8	—	—	—	1.1	1.1	9.0
ASIATIC.	Deaths	61	8	8	5	6	6	84
	% live births	13.2	1.7	1.7	1.0	1.3	1.3	20.3
NATIVE.	Deaths	44	8	12	12	7	15	98
	% live births	9.1	1.6	2.4	2.4	1.4	3.1	20.4
TOTAL.	Deaths	111	16	20	17	14	221	200
	% live births	10.7	1.5	1.9	1.6	1.3	2.1	19.4

DEATHS FROM SEVEN MONTHS TO UNDER TWELVE MONTHS.

Race.		7	8	9	10	11	12	7 months to one year.
WHITE.	Deaths	—	—	—	—	—	—	—
	% live births	—	—	—	—	—	—	—
ASIATIC.	Deaths	7	4	7	4	1	4	27
	% live births	1.5	0.8	1.5	0.8	0.2	0.8	5.8
NATIVE.	Deaths	5	8	7	4	3	3	30
	% live births	1.0	1.6	1.4	0.8	0.6	0.6	6.2
TOTAL.	Deaths	12	12	14	8	4	7	57
	% live births	1.1	1.1	1.3	0.7	0.3	0.6	5.5

The causes of infant deaths and the seasonal incidence are indicated in the tables under:—

INFANT MORTALITY.

	White.	Indian.	Goan.	Native.	Somali.	Arab.	Seych.	Total.
Anaemia	—	—	—	1	—	—	—	1
Anuria	—	1	—	—	—	—	—	1
Asphyxia neonatorum	—	4	—	—	—	—	—	4
Bronchitis	—	5	—	4	—	—	—	9
Broncho-pneumonia	—	22	—	43	—	—	1	66
Burns	—	1	—	—	—	—	—	1
Cerebrospinal meningitis	—	—	—	2	—	—	—	2
Cleft palate	—	1	—	—	—	—	—	1
Congenital heart disease	—	1	—	2	—	—	—	3
Convulsions	—	4	—	3	—	—	—	7
Diarrhoea	—	13	—	9	1	—	—	23
Dysentery	—	1	—	—	—	—	—	1
Encephalitis	—	1	—	—	—	—	—	1
Erysipelas	—	1	—	—	—	—	—	1
Haemophilia	1	—	—	—	—	—	—	1
Ill defined	—	2	—	4	—	—	—	6
Influenza	—	—	—	1	—	—	—	1
Malaena	—	1	—	—	—	—	—	1
Malaria	1	1	—	1	—	—	—	3
Marasmus	1	21	—	10	—	1	1	34
Monstrosity	—	—	—	2	—	—	—	2
Omphalitis	—	1	—	—	—	—	—	1
Pemphigus	—	1	—	—	—	—	—	1
Pneumonia	—	13	—	17	—	—	2	32
Prematurity	5	14	2	15	—	—	2	38
Pulmonary collapse	—	2	—	—	—	—	—	2
Purpura	—	—	—	1	—	—	—	1
Rheumatism	—	2	—	—	—	—	—	2
Septicaemia	—	4	—	—	—	—	—	4
Spina bifida	—	1	—	—	—	—	—	1
Suffocation	—	—	—	1	—	—	—	1
Syphilis	—	—	—	4	—	—	—	4
Syphilis	—	1	—	—	—	—	—	1
Whooping cough	—	1	—	—	—	—	—	1
TOTAL	6	119	2	120	1	1	6	257

SEASONAL INFANT MORTALITY FOR THE RACES.

	White.	Indian.	Goan.	Native.	Somali.	Arab.	Seych.	Total.
January	1	7	1	9	—	—	—	18
February	1	5	—	7	1	1	1	16
March	1	10	—	6	—	—	2	19
April	1	10	—	14	—	—	1	26
May	—	7	—	13	—	—	—	20
June	1	10	—	12	—	—	1	24
July	—	7	1	14	—	—	—	22
August	1	18	—	9	—	—	—	28
September	—	15	—	11	—	—	—	26
October	—	11	—	13	—	—	—	24
November	1	8	—	5	—	—	—	14
December	1	11	—	7	—	—	1	20
TOTAL	8	119	2	120	1	1	6	257

SEASONAL INFANT MORTALITY.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Anaemia	—	—	—	—	1	—	—	—	—	—	—	—	1
Anuria	—	—	—	—	—	1	—	—	—	—	—	—	1
Asphyxia neonatorum	—	—	—	—	—	—	1	1	1	1	—	—	4
Bronchitis	—	2	—	—	2	1	—	1	2	—	—	1	9
Broncho-pneumonia ...	9	2	7	7	4	5	6	5	7	8	1	5	66
Burns	—	—	—	—	—	—	—	—	1	—	—	—	1
Cerebrospinal meningitis	—	—	—	1	—	—	1	—	—	—	—	—	2
Cleft palate	—	—	1	—	—	—	—	—	—	—	—	—	1
Congenital heart disease	—	—	1	—	—	—	2	—	—	—	—	—	3
Convulsions	—	1	—	1	1	—	1	1	1	1	—	—	7
Diarrhoea	1	2	2	—	3	1	—	2	2	3	3	4	23
Dysentery	—	—	—	—	—	—	—	—	—	—	1	—	1
Encephalitis	—	—	—	—	1	—	—	—	—	—	—	—	1
Erysipelas	—	—	—	—	—	—	—	1	—	—	—	—	1
Haemophilia	—	1	—	—	—	—	—	—	—	—	—	—	1
Ill defined	—	—	1	—	1	1	1	—	—	1	1	—	6
Influenza	—	—	—	—	—	1	—	—	—	—	—	—	1
Malaena	1	—	—	—	—	—	—	—	—	—	—	—	1
Malaria	—	—	—	—	—	—	—	2	—	—	—	1	3
Marasmus	2	3	—	2	4	6	4	5	2	3	1	2	34
Monstrosity	—	—	—	2	—	—	—	—	—	—	—	—	2
Omphalitis	—	—	—	—	—	—	—	1	—	—	—	—	1
Pemphigus	—	—	—	—	—	—	—	—	—	1	—	—	1
Pneumonia	1	1	3	7	2	4	1	3	3	3	2	2	32
Prematurity	3	3	4	6	—	—	4	5	3	2	5	3	38
Pulmonary collapse ...	—	—	—	—	—	1	1	—	—	—	—	—	2
Purpura	—	—	—	—	—	1	—	—	—	—	—	—	1
Rheumatism	1	—	—	—	—	—	—	—	—	—	—	1	2
Septicaemia	—	—	—	—	—	1	—	1	—	1	—	1	4
Spina bifida	—	—	—	—	—	1	—	—	—	—	—	—	1
Suffocation	—	1	—	—	—	—	—	—	—	—	—	—	1
Syphilis	—	—	—	—	—	1	—	—	3	—	—	—	4
Whooping cough	—	—	—	—	—	—	—	—	1	—	—	—	1
TOTAL	18	16	19	26	20	24	22	28	26	24	14	20	257

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

	Percentage to total of Infant Deaths.										Avg.
	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	10 yrs.
Pneumonia	32.0	44.6	41.7	36.1	41.1	37.4	44.7	44.9	40.7	38.1	40.1
Congenital debility ...	11.9	10.0	15.9	12.9	14.4	9.6	8.3	9.8	9.3	13.2	11.5
Prematurity	13.2	15.0	7.7	17.0	8.3	12.8	15.6	9.8	10.3	14.7	12.4
Diarrhoea	9.4	6.9	8.7	9.5	8.8	9.0	6.9	6.8	16.5	8.9	9.1

It is noted that pneumonia still holds the premier position although the rate is lower than that for last year and the ten years' average.

The rates for congenital debility and prematurity show an increase over last year and the average, but the rate for diarrhoea shows a marked decrease below the previous year.

10. NOTIFIABLE INFECTIOUS DISEASES.

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

The number of cases of infectious diseases notified during 1938 totalled 779, compared with 1,121 during 1937 and 927 during 1936. This decrease is mainly due to the fewer malaria cases during the year.

Excluding the 564 malaria cases, the total of 215 compares with the totals for the five preceding years of 179, 176, 149, 130, and 125 respectively.

The number of cases of locally acquired malaria notified totalled 564 compared with 942 for 1937, 751 for 1936, and 3,500 for 1935.

Blackwater fever was notified in two instances, similar to the number for the two previous years.

The number of notifications for cerebrospinal meningitis, namely 22, although high, was lower than the number notified in 1937.

Diphtheria accounted for 8 notifications, compared with 11 for the previous year.

Ten cases of human plague were recorded from within the Municipality.

Relapsing fever accounted for 38 notifications, the largest number yet recorded.

The number of notifications of puerperal sepsis decreased from 15 to 6.

There was an increase in the case of tropical typhus notifications from 2 to 10.

There were 5 cases of anthrax notified, 3 of encephalitis lethargica, 2 of erysipelas, and one of beri beri.

Enteric fever showed a slight increase in numbers from 42 to 53 as was the case with tuberculosis where the increase was from 42 to 55. Of the 55 cases of tuberculosis, 36 were pulmonary and 19 cases other than pulmonary.

There were no notifications during the year in connection with leprosy, ophthalmia neonatorum, scarlet fever, Malta fever, smallpox, trypanosomiasis, acute anterior poliomyelitis, glanders, rabies, and cholera.

INFECTIOUS DISEASES NOTIFIED.

	White.	Indian.	Goan.	Native.	Total.
Malaria	26	274	—	264	564
Anthrax	1	—	—	4	5
Beri-Beri	—	—	—	1	1
Blackwater fever	—	1	—	1	2
Cerebrospinal meningitis	—	3	2	17	22
Diphtheria	4	2	1	1	8
Encephalitis lethargica	—	1	—	2	3
Erysipelas	—	2	—	—	2
Plague	—	8	—	2	10
Puerperal sepsis	—	4	2	—	6
Relapsing fever	—	—	—	38	38
Tropical typhus	9	—	—	1	10
Tuberculosis pulmonary	4	1	—	31	36
Tuberculosis meningitis	—	—	—	1	1
Tuberculosis adenitis	—	—	—	9	9
Tuberculosis disseminated	—	—	—	5	5
Tuberculosis joints	—	—	—	4	4
Typhoid fever	9	13	1	30	53
TOTAL	53	309	6	411	779

SEASONAL INCIDENCE OF INFECTIOUS DISEASES NOTIFIED.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Malaria	35	20	59	97	80	87	58	42	24	29	18	15	564
Anthrax	—	—	1	1	1	—	1	—	—	—	1	—	5
Beri-beri	—	—	1	—	—	—	—	—	—	—	—	—	1
Blackwater fever	—	—	—	—	1	—	—	1	—	—	—	—	1
Cerebrospinal meningitis	1	1	3	3	2	2	1	4	4	—	—	1	22
Diphtheria	—	—	—	—	—	3	1	1	—	—	2	1	8
Encephalitis lethargica	—	—	—	—	1	2	—	—	—	—	—	—	3
Erysipelas	—	—	—	—	—	—	—	—	1	—	1	—	2
Plague	—	4	1	—	—	—	5	—	—	—	—	—	10
Puerperal sepsis	1	1	—	1	—	—	—	—	1	1	—	1	6
Relapsing fever	3	4	7	5	4	3	3	4	4	1	—	—	38
Tropical typhus	—	—	—	1	—	—	2	1	1	2	—	3	10
Tuberculosis pulmonary	2	2	4	4	3	2	1	5	3	5	3	2	36
„ meningitis	—	—	—	—	—	1	—	—	—	—	—	—	1
„ adenitis	3	—	—	—	1	—	1	2	1	—	—	1	9
„ disseminated	—	1	—	1	—	1	—	1	—	1	—	—	5
„ joints	—	—	1	—	—	—	1	—	—	—	2	—	4
Typhoid fever	5	3	5	3	6	3	6	7	4	3	6	2	53
TOTAL	50	36	82	116	99	104	80	68	43	42	33	26	779

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	564	18	8.629	0.275
Anthrax	5	—	0.076	—
Beri-beri	1	—	0.015	—
Blackwater fever	2	—	0.030	—
Cerebrospinal meningitis	22	16	0.336	0.244
Diphtheria	8	1	0.122	0.015
Encephalitis lethargica	3	3	0.045	0.045
Erysipelas	2	1	0.030	0.015
Plague	10	10	0.153	0.153
Puerperal sepsis	6	3	0.091	0.045
Relapsing fever	38	3	0.581	0.045
Tropical typhus	10	—	0.153	—
Tuberculosis	55	32	0.841	0.489
Typhoid fever	53	13	0.810	0.198

11. 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.

Five cases were recorded, one European and four Native. None of the cases had a fatal termination.

BERI-BERI.

One Native case was notified during the year. Four previous cases had been recorded, one in 1935, one in 1928, and two in 1925.

BLACKWATER FEVER.

Two cases were reported, one in an Asian and one in a Native; neither of these cases were fatal. A similar number of cases were reported the two previous years.

CEREBROSPINAL MENINGITIS.

Twenty-two cases were noted during the year compared with 24 during 1937. Of these cases 17 concerned Natives and 5 Asians. One Asian and 15 Native cases were fatal.

The last three years has shown a definite increase in the incidence of this disease, the increase being undoubtedly favoured by overcrowded conditions.

CHICKENPOX, MEASLES, WHOOPING COUGH, MUMPS.

These non-notifiable conditions have been present during the year, but the severity of their incidence can only be judged by admissions to hospital.

With the exception of chickenpox none of these conditions were so frequent as in 1937.

The incidence of measles, whooping cough, and mumps was not severe, being less than during 1937, although two cases of whooping cough and one of measles had a fatal termination.

Chickenpox occurred in considerable numbers chiefly in the latter half of the year, the patient days in hospital totalling 1,498 compared with 848 last year. There were no fatal cases reported.

CHOLERA.

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

DIPHTHERIA.

There was a decrease in the number of diphtheria cases reported compared with the previous year, in the proportion of 8 to 11. A number of non-virulent carriers were detected, especially at one of the schools.

The disease did not assume epidemic proportions, the eight cases being spread over five months.

One Asian case was fatal.

DYSENTERY.

This condition is not notifiable and so no indication can be given of the incidence but, judging from the number of deaths, namely 14, it was slightly less prevalent than in 1937, when there were 16 deaths.

ENCEPHALITIS LETHARGICA.

Two Native and one Asian case were recorded, all of which were fatal. Eight cases have previously been reported spread over seven years.

ENTERIC FEVER GROUP.

There was an increase in the notification for this condition, 53 cases being reported against 42 in 1937.

The 53 cases comprised 8 Europeans, 14 Asians, and 31 Natives.

Thirteen of the cases, namely 2 European, 2 Asian, and 9 Native, had a fatal termination.

The incidence of the disease was spread fairly evenly over all the months.

ERYSIPELAS.

Two Asian cases of erysipelas were notified with one death.

GLANDERS, RABIES.

Neither of these diseases have yet been reported in Nairobi.

LEPROSY.

No case was reported during the year.

MALTA FEVER.

No case was reported during the year.

MALARIA.

Detailed information regarding this disease will be found under a separate section of this report.

OPHTHALMIA NEONATORUM.

No case was reported during the year.

PLAGUE

This disease is discussed under a separate section in this report.

PNEUMONIA.

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

During 1938, pneumonia was responsible for 263 deaths and broncho-pneumonia for 102 deaths, a total of 365. This total shows a marked decrease on the total for 1937 when the number was 437.

The percentage of deaths from the pneumonias to total deaths during the year amounted to 40.0%, the comparative figure for the previous five years being 42.0%, 40.9%, 36.9%, 39.5%, and 34.1% respectively.

Of the 365 deaths from this condition, 98 deaths were of infants under one year of age, comprising 66 broncho-pneumonia and 32 pneumonia.

The annual death rate for the pneumonias per thousand of population for all races during 1938 was 5.5 compared with 7.1 for 1937 and 6.5 for 1936.

It is of interest to note the difference in the death rates for this condition for the several communities. European 0.4, Asian 3.9, Native 7.2, the figures for 1937 being 0.3, 4.5, and 9.3 respectively.

PUERPERAL SEPSIS.

Only six Asian non-fatal cases were notified during the year, whereas three Native deaths were recorded from this condition.

This obviously does not indicate a true picture of the incidence of this disease in Nairobi.

RELAPSING FEVER.

There was a large increase in the number of notifications for this disease, 38 being recorded compared with 10 during the previous year. All the cases were of Natives and 3 deaths were recorded.

The total of 38 is the largest number recorded in any year since 1925 when there were 46.

SCARLET FEVER.

No case was reported during the year.

TICK TYPHUS.

The comparatively large number of 10 cases were notified, compared with an average of about 3 over the previous five years.

With the exception of one Native case, all concerned Europeans.

TUBERCULOSIS.

Tuberculosis of all forms was notified in 55 instances during the year, of which 36 referred to the pulmonary variety and the remaining 9 to forms other than pulmonary.

Of the pulmonary manifestations, 4 Europeans, 1 Asian, and 31 Natives were concerned. There were 25 deaths comprising 1 Asian and 24 Natives.

Of the manifestations other than pulmonary, 1 case was concerned with meningitis, 9 with adenitis, 4 with joints, and 5 cases were of disseminated tuberculosis.

There were six deaths in this group, one European from disseminated tuberculosis, one Native from adenitis, and four Natives from the disseminated form.

The incidence rate for all forms of notified tuberculosis equalled 0.85 per thousand population compared with 0.68 in 1937.

The death rate for this disease was 0.48 per thousand population compared with a similar figure for 1937.

12. 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 during 1938 totalled 307, compared with 266 and 524 for the previous two years, whilst the total patient days increased from 7,372 to 8,043.

The patient days for tuberculosis is the largest total on the list, being 4,240 compared with 3,418 during 1937.

The next largest total on the list is on account of chickenpox, namely 1,498 days, which shows an increase of 650 over the previous year.

Compared with 1937, the total days for anthrax, leprosy, measles, mumps, plague, and whooping cough were decreased, whilst the total days for cerebro-spinal meningitis, relapsing fever, tropical typhus, and typhoid fever were increased.

The following tables give the details of admissions, patient days, and seasonal incidence for the races in the hospitals concerned:—

EUROPEAN HOSPITAL.

Month.	Admissions.	Patient days.
January ...	—	16
February ...	—	—
March ...	—	—
April ...	3	22
May ...	—	—
June ...	—	—
July ...	3	42
August ...	—	39
September ...	2	12
October ...	4	37
November ...	—	34
December ...	2	26
TOTAL ...	14	228

NATIVE CIVIL HOSPITAL.

			ASIAN.					NATIVE.					TOTAL.	
			Admis-	Patient				Admis-	Patient				Admis-	Patient
			sions.	days.				sions.	days.				sions.	days.
January	...	...	1	35	...	...	...	11	185	...	...	...	12	220
February	...	...	—	42	...	...	...	6	99	...	...	...	6	141
March	...	...	—	—	...	...	...	13	175	...	...	...	13	175
April	...	...	—	—	...	...	...	8	91	...	...	...	8	91
May	...	...	—	—	...	...	...	14	160	...	...	...	14	160
June	...	...	—	—	...	...	...	9	141	...	...	...	9	141
July	...	...	3	15	...	...	...	7	76	...	...	...	14	91
August	...	...	—	—	...	...	...	14	179	...	...	...	14	179
September	...	...	—	—	...	...	...	7	113	...	...	...	7	113
October	...	...	—	—	...	...	...	4	95	...	...	...	4	95
November	...	...	—	—	...	...	...	8	127	...	...	...	8	127
December	...	...	—	—	...	...	...	2	47	...	...	...	2	47
TOTAL	...	...	4	92	...	...	...	103	1488	...	...	...	107	1580

INFECTIOUS DISEASES HOSPITAL.

			WHITE.					ASIATIC.					NATIVE.					TOTAL.	
			Admis-	Patient				Admis-	Patient				Admis-	Patient				Admis-	Patient
			sions.	days.				sions.	days.				sions.	days.				sions.	days.
January	...	—	—	—	...	...	...	—	—	...	...	...	6	356	...	...	...	6	356
February	...	—	—	—	...	...	...	2	5	...	...	...	16	407	...	...	...	18	412
March	...	—	—	—	...	...	...	—	—	...	...	...	9	378	...	...	...	9	378
April	...	1	30	—	...	...	...	—	—	...	...	...	8	370	...	...	...	9	400
May	...	—	—	—	...	...	...	—	—	...	...	...	10	452	...	...	...	10	452
June	...	—	—	—	...	...	...	—	—	...	...	...	11	494	...	...	...	11	494
July	...	—	—	—	...	...	...	1	3	...	...	...	14	600	...	...	...	15	603
August	...	—	—	—	...	...	...	—	—	...	...	...	30	738	...	...	...	30	738
September	...	1	1	—	...	...	...	—	—	...	...	...	25	808	...	...	...	26	809
October	...	2	22	—	...	...	...	—	—	...	...	...	18	529	...	...	...	20	551
November	...	1	14	—	...	...	...	—	—	...	...	...	13	500	...	...	...	14	514
December	...	3	38	—	...	...	...	1	1	...	...	...	14	489	...	...	...	18	528
TOTAL	...	8	105	—	...	...	...	4	9	...	...	...	174	6121	...	...	...	186	6235

MUNICIPAL PATIENTS—SUMMARY.

			WHITE.					ASIATIC.					NATIVE.					TOTAL.	
			Admis-	Patient				Admis-	Patient				Admis-	Patient				Admis-	Patient
			sions.	days.				sions.	days.				sions.	days.				sions.	days.
Hospital.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
European	...	14	228	—	...	...	...	—	—	...	...	...	—	—	...	...	...	14	228
Native	...	—	—	—	...	...	...	4	92	...	...	...	103	1488	...	...	...	107	1580
Inf. Diseases	...	8	105	—	...	...	...	4	9	...	...	...	174	6121	...	...	...	186	6235
TOTAL	...	22	333	—	...	...	...	8	101	...	...	...	277	7609	...	...	...	307	8043

MUNICIPAL PATIENT DAYS BY RACES.

	White.	Asiatic.	Native.	TOTAL.
Anthrax	30	—	72	102
Beri-beri	—	—	45	45
Blackwater fever	11	—	11	22
Cerebrospinal meningitis	—	72	225	297
Chickenpox	—	—	1498	1498
Diphtheria	65	—	—	65
Encephalitis lethargica	3	—	—	3
Leprosy	—	—	380	380
Measles	10	—	166	176
Mumps	—	—	92	92
Plague	—	10	8	18
Puerperal sepsis	—	18	—	18
Relapsing fever	—	—	217	217
Tropical typhus	74	—	16	90
Tuberculosis	32	1	4207	4240
Typhoid fever	108	—	603	711
Whooping cough	—	—	69	69
TOTAL	333	101	7609	8043

MUNICIPAL PATIENT DAYS BY MONTHS.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Anthrax	—	—	9	36	28	—	13	12	—	—	4	—	102
Beri-beri	—	—	39	6	—	—	—	—	—	—	—	—	45
Blackwater fever	—	—	—	—	—	—	—	11	11	—	—	—	22
Cerebrospinal meningitis	76	28	24	8	32	19	13	43	35	19	—	—	297
Chickenpox	32	88	86	69	60	109	100	223	341	159	135	96	1498
Diphtheria	—	—	—	—	—	—	—	—	1	12	14	38	65
Encephalitis lethargica	—	—	—	3	—	—	—	—	—	—	—	—	3
Leprosy	31	28	46	30	31	30	31	31	30	31	30	31	380
Measles	2	23	—	—	20	—	32	67	—	10	—	22	176
Mumps	—	—	—	—	—	—	31	13	—	19	16	13	92
Plague	—	11	2	—	—	—	5	—	—	—	—	—	18
Puerperal sepsis	4	14	—	—	—	—	—	—	—	—	—	—	18
Relapsing fever	8	21	25	28	49	24	10	28	17	7	—	—	217
Tropical typhus	16	—	—	11	—	16	7	7	—	10	—	23	90
Tuberculosis	336	247	292	277	326	378	404	443	449	350	376	362	4240
Typhoid fever	87	50	30	35	66	59	84	68	50	66	100	16	711
Whooping cough	—	53	—	—	—	—	6	10	—	—	—	—	69
TOTAL	592	563	553	503	612	635	736	956	934	683	675	601	8043

13. PLAGUE.

Human plague occurred within the Municipality to the extent of 10 cases, eight of them being Asians and two Native. All the cases were fatal.

The incidence occurred in two distinct series, the first series of five cases in February and the second series of five cases in July.

Plague had been present during the previous year, the last cases being in November.

As in 1937, the outbreak was characterised by its sporadic nature.

The first case occurring in River Road was an Asian shop assistant who probably got his infection from Fort Hall where he had been stopping until a few days previous to his illness.

The second case, also an Asian shopkeeper from River Road but not the same premises as the first case, died eight days after the first case. It was not possible to trace any connection between these two cases.

The third was an isolated case, a Native from Eastleigh who worked in an Asian residential area.

The fourth case, an Asian shopkeeper from River Road, died on the 24th February, eleven days after the last River Road case.

The fifth case and last of the first series, a Native, worked in a hide store in the factory area. This was an isolated case.

The second series of five cases was characterised by pneumonic symptoms.

The sixth case, an Asian woman from River Road, died five days after her husband, who, although certified as dying from pneumonia, in all probability, was suffering from the pneumonic variety of plague.

The seventh case, an Asian shop assistant from River Road, was working at the same shop as case No. 6.

The eighth, ninth, and tenth cases were all similar in character, in each case Asian shopkeepers, in different localities, one from Quarry Road, one from Forthall Road, and the other from River Road, commenced their illness with pneumonic symptoms and died in two days from plague.

All the cases were confirmed bacteriologically and the usual precautions were carried out in each instance.

A short summary of the cases is given under:—

Case No.	Date.	Race.	Location.	Result.
1.	February 2nd	Asian	River Road 138/9	Died
2.	February 13th	Asian	River Road 525/9	Died
3.	February 23rd	Native	Eastleigh	Died
4.	February 24th	Asian	River Road 138/27	Died
5.	February 28th	Native	Factory Street	Died
6.	July 6th	Asian	River Road 525/2	Died
7.	July 6th	Asian	River Road 525/2	Died
8.	July 5th	Asian	Quarry Road	Died
9.	July 5th	Asian	Forthall Road	Died
10.	July 7th	Asian	River Road 138/29	Died

Plague has been present in the native reserves in the neighbourhood of Nairobi and the frequent service of motor buses tends to the spread of the disease in the towns served as it is usual for a native feeling ill to come by that means of transport for treatment.

Since the last epidemic of plague which commenced in 1930 and lasted over three years when there were 170 cases, the disease has only occurred in sporadic form during the last four years, when there have been 1, 7, 25, and 10 cases respectively.

14. MALARIA.

Malaria was made notifiable during February, 1930.

In 1938, 764 cases were notified, being 632 residents and 132 non-residents, compared with the figures 1,025 and 210 for 1937.

MALARIA NOTIFICATIONS.

Month.	RESIDENTS.				NON-RESIDENTS.				TOTAL.
	White.	Asiatic.	Native.	Total.	White.	Asiatic.	Native.	Total.	
January	5	26	11	42	3	4	3	10	52
February	7	14	6	27	1	5	—	6	33
March	1	39	24	64	1	7	2	10	74
April	2	36	62	100	3	5	8	16	116
May	6	29	51	86	6	2	6	14	100
June	7	34	54	95	10	6	4	20	115
July	8	27	27	62	4	9	10	23	85
August	3	22	19	44	3	2	10	15	59
September	3	14	11	28	1	—	2	3	31
October	5	15	16	36	1	1	2	4	40
November	9	12	6	27	3	3	2	8	35
December	3	17	1	21	—	1	2	3	24
TOTAL	59	285	288	632	36	45	51	132	764

LOCALLY ACQUIRED INFECTION.

Month.	White.	Asiatic.	Native.	TOTAL.
January	2	23	10	35
February	—	14	6	20
March	1	38	20	59
April	2	36	59	97
May	4	29	47	80
June	2	33	52	87
July	5	27	26	58
August	3	22	17	42
September	—	14	10	24
October	2	13	14	29
November	4	11	3	18
December	1	14	—	15
TOTAL	26	274	264	564

The seasonal incidence of the locally acquired infections shows an increase in March, reaching a peak in April and gradually decreasing to August, thence a steeper declination to the end of the year.

The incidence curve thus follows the rainfall curve with the exception of the latter months of the year when the rains were good but the incidence remained low.

INCIDENCE OF NOTIFIED MALARIA PER 1,000 PERSONS.

Race.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.
White	13.9	13.81	8.18	17.40	26.58	10.53	5.83	3.99
Asiatic	10.87	7.41	15.36	77.32	101.50	34.0	31.21	14.80
Native	6.73	24.20	29.66	24.81	59.92	10.67	9.65	6.60
All races	8.81	17.64	22.60	40.57	69.93	18.04	15.36	8.62

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 termed "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 categories:—

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.							
	1931	1932	1933	1934	1935	1936	1937	1938
Nairobi ...	79	243	865	1924	3281	751	942	564
Ex Nairobi ...	133	214	184	169	219	151	83	68
Doubtful ...	208	379	22	9	—	—	—	—
TOTAL ...	420	836	1071	2102	3500	902	1025	632

Classification of the recorded cases according to the type of infection and the probable source is set out below:—

TYPE OF INFECTION AND PROBABLE SOURCE.

Probable source.	Clinical.	Benign tertian.	Quartan.	Sub-tertian.	Plasmodium ovale.	Double infections.	Total cases.
Nairobi ...	9	11	20	522	2	22	564
Ex Nairobi ...	1	1	2	64	—	2	68
Doubtful ...	—	—	—	—	—	—	—
Total residents	10	12	22	586	2	24	632
Total non-residents	1	3	4	123	1	6	132
TOTAL ...	11	15	26	709	3	30	764

For 1938, sub-tertian infections reached the figure of 92.8% of the total cases compared with 90.9% for 1937.

The quartan rate has also risen at the expense of the benign tertian rate.

Three cases of plasmodium ovale were recorded during the year, two being among residents and one in a non-resident.

The benign tertian rate has progressively decreased since 1936.

The increase in the quartan rate is also shown in the number of double infections in residents, of which 22 were recorded during the year, one half being sub-tertian and quartan and one half being sub-tertian and benign tertian. This increase in double infections is marked in the case of natives and it would appear that the increase of labour coming into the town from the Lake area is a major factor.

Quartan infection is very noticeable at the Nairobi Prison.

For comparative purposes and for the purpose of this report, the Municipality has been divided into ten 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.							
	1931	1932	1933	1934	1935	1936	1937	1938
1. Upper Parklands ...	—	1	3	4	5	4	1	1
2. Muthaiga ...	—	1	8	21	17	1	2	3
3. Westlands ...	—	1	—	3	11	1	—	1
4. Parklands ...	4	9	31	47	56	17	31	22
5. Forest Road ...	6	14	133	266	458	141	129	5
6. Racecourse Road ...	3	42	128	137	499	98	118	97
7. Eastleigh ...	—	8	30	36	108	11	51	21
8. Kilimani ...	2	10	19	12	24	2	7	4
9. Hill ...	2	23	63	113	100	19	41	40
10. Commercial ...	62	134	450	1285	2103	457	562	370
TOTAL ...	79	243	865	1924	3381	751	942	564

Once more attention is drawn to the two districts with the largest number of cases being in proximity to the Nairobi Swamp.

The mortality rate of the cases notified reached the figure of 3.1% which compares favourably with 3.4% for 1937 and 4.6% for 1936.

The death rate from malaria per thousand population during 1938 was 0.27 compared with 0.61 during the previous year.

The death rate has steadily declined the last four years.

Two fatal cases of blackwater fever were recorded, one an Asian in the month of May and one Native in August.

Details of deaths from malaria for a number of years will be found hereunder:—

DEATHS FROM MALARIA AND RATES FOR 20 YEARS.

Year.	Number of deaths.		Death rate per 1,000	
1919	...	47	...	—
1920	...	34	...	—
1921	...	22	...	—
1922	...	29	...	—
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
1937	...	38	...	0.61
1938	...	18	...	0.27

15. ANTI-MALARIAL WORKS.

As a routine, the whole of the concrete anti-malarial drain systems was inspected at regular intervals, cleaning and repairing taking place where necessary.

The anti-malarial gang was responsible for the cleaning and straightening of the Nairobi River at Ainsworth Bridge where the river had broken its banks and taken a new course during the heavy rains of 1937. A new bank was constructed and consolidated and the river bed, which was normally tortuous, was straightened and the banks strongly rebuilt for the greater part with large boulders of stone and the river was returned to its course of 1918.

The Mathari River was attended to, the banks strengthened and straightened where possible.

The stream through City Park, which is in concrete and is the continuation of the drainage scheme in Spring Valley, was cleaned at regular intervals.

The Spring Valley drainage system was cleared and many drains recut and rebanked in stone wherever possible.

The Masonga Wai stream which carried the effluent from the European Hospital was cleaned regularly.

The Ngong River was cleaned from the entrance of the anti-malarial drain downstream to the quarries.

The Getathuru Stream was also given attention by cleaning and recutting of banks. The silt from this river comes down in large quantities and threatens the Kiambu Road bridge where it lodges.

During the year a special road drain gang was employed clearing and cutting those drains that became dammed or choked with grass. This gang did remarkably effective work as the *Aedes* breeding decreased considerably. The road gangs also cleaned the roadside drains and by doing so destroyed the eggs of the *Aedes* with the consequence that after heavy rain we did not get a swarm of *Aedes* mosquitoes.

A large number of murrum pits were filled in, also numerous depressions, but there are still numbers that require filling. One quarry owner has filled in several of his large disused pits near the Ngong River.

The Kirichwa Kubwa River was constantly oiled and the large pools oiled by means of weighted oil sacks. This river is responsible for a very big share of the mosquito breeding in the sections through which it passes and, if the river could be laid in concrete it would eliminate a considerable amount of this breeding. The river is rocky and the water, during the dry season, lies in large pools along the bed.

The anti-malarial gang was also employed cutting grass and bush on private plots.

It is found that, owing to the number of rivers or streams within the Municipality, the small gang of 20 labourers is inadequate to effectively control them. As soon as one river has been cleared and the gang moves on to the next, it is time to return to the first, but this is impossible so, consequently, the rivers go for long periods without adequate attention and thus oil has to be used in the attempt to control the mosquito breeding.

The small stream starting in Section 4, and running south passing the Native Hospital and K.A.R. lines and entering the Ngong River, was given special attention as this stream is fouled with sullage from the hospital and K.A.R. lines and breeds not only mosquitoes but thousands of flies. It is recommended the stream should be recut and banked with concrete. This stream is probably responsible, with the aid of large murrum pits near the Ngong River, for the malaria cases for Section 9.

The Nairobi River passing through the swamp has been well cleared and the breeding in the river itself is almost negligible. The breeding rate for Section 16, being due to the numerous irrigation channels and drains used by the Asian market gardeners using an uncontrolled system of irrigation.

OILING.

During the year a total of 12,223 gallons of oil was used in the endeavour to control mosquito breeding places.

232 gallons of pyrethrum mosquito fluid was distributed during the year.

The lorry used in connection with anti-malarial work travelled 7,536 miles during 1938. This lorry is also used for transporting by-products from the Abattoir to the station.

16. LABORATORY.

During the latter part of 1937, a laboratory was established on the top floor of the Town Hall so that entomological and other work could be carried out. The laboratory is in charge of the Anti-malaria Officer. The native searchers prepare all the larvae collected during the day for identification and also prepare adults for examination for sporozoites.

The laboratory is also used for the examination of rats for *B. pestis*.

Towards the end of the year the necessary apparatus was installed for the bacteriological examination of water and also for testing the alcohol content of native beer.

The undermentioned mosquitoes have been recorded in Nairobi:—

ANOPHELES:		AEDES:	
Anopheles	<i>gambiae</i> .	Aedes (Stegomyia)	<i>aegypti</i> .
"	<i>cousteni</i> .	"	<i>dendrophilus</i> .
"	<i>cinereus</i> .	"	(<i>Mucidus</i>) <i>scatafagoides</i> .
"	<i>christyi</i> .	"	(<i>Aedimorphus</i>) <i>dendrophilus</i> .
"	<i>squamosus</i> .	"	<i>hirsutus</i> .
"	<i>pretoriensis</i> .	"	<i>quasiunivittatus</i> .
"	<i>pharoensis</i> .	"	<i>dentatus</i> .
"	<i>maculipalpis</i> .	"	<i>lineatopennis</i> .
"	<i>demilloni</i> .	"	<i>lamborni</i> .
		"	<i>haworthi</i> .
		"	<i>cumminsi</i> .
CULEX:		"	<i>argenteopunctatus</i> .
Culex (Neoculex)	<i>rubinotus</i> .	"	<i>pulchrithorax</i> .
"	<i>salisburyensis</i> .		
"	(<i>Culex</i>) <i>pipiens</i> .		
"	<i>fatigans</i> .	OTHERS:	
"	<i>vansomeri</i> .	Ficalbia (Minomyia)	<i>Minomyiaformis</i>
"	<i>pallidocephalus</i> .	"	<i>uniformis</i> var.
"	<i>bitaeniorhyncus</i> .		<i>malfeyti</i> .
"	<i>duttoni</i> .	"	<i>hispida</i> .
"	<i>decens</i> .	Unanotaenia	<i>balfouri</i> .
"	<i>grahami</i> .	"	<i>mashonaensis</i> .
"	<i>univittatus</i> .	Taeniorhyncus	<i>fuscopennatus</i> .
"	<i>simpsoni</i> .	"	<i>africanus</i> .
"	<i>triflatus</i> .		
"	<i>theileri</i> .		
"	<i>annulioris</i> .		
"	(<i>Lutzia</i>) <i>tigripes</i> .		

The following table indicates the particulars of larvae identified.

MOSQUITO LARVAE IDENTIFICATION.

	Anopheles.	Culex.	Aedes.	Others.	TOTALS.
January ...	183	441	36	7	667
February ...	114	288	156	—	558
March ...	140	515	102	2	759
April ...	388	521	99	1	1009
May ...	137	661	197	1	996
June ...	85	774	42	29	930
July ...	89	707	34	18	848
August ...	180	876	17	6	1079
September ...	216	1119	31	8	1374
October ...	126	1137	68	16	1346
November ...	188	864	91	3	1146
December ...	143	661	221	—	1025
TOTAL ...	1988	8564	1094	91	11737

During the year, a percentage of the daily rat catch was examined for *B. pestis*, with the result that a total of 2,336 rats were examined. Of this number, three were found to be positive.

It is noted that these three positive rats were found dead and not caught in the traps.

RAT EXAMINATIONS.

Month.	No. examined.	Positive.
January ..	173	1
February ...	160	—
March ...	118	1
April ...	208	—
May ...	212	—
June ...	211	1
July ...	182	—
August ...	239	—
September ...	231	—
October ...	171	—
November ...	241	—
December ...	190	—
TOTAL ...	2336	3

ANOPHELES BREEDING RATE.

In the 3,715 breeding places mentioned, anopheles were identified in 588 instances representing 15.8% of the total.

The *A. gambiae* rate in relation to total breeding was 3.5% whilst the *A. gambiae* rate in relation to total anopheles breeding places was equivalent to 22.2%.

The following table shows the number and types of breeding places dealt with together with particulars of the anopheles breeding in those places.

RELATION OF *A. GAMBIAE* AND OTHER ANOPHELES TO TOTAL
BREEDING PLACES.

	Total breeding places.	<i>Anopheles gambiae.</i>	Other anopheles.
Drains	886	41	96
Road drains	147	1	10
Rainpools	242	14	37
Streams	576	9	80
Pools in dry streams	323	2	49
Quarries	213	25	41
Murum pits	190	4	21
Clay pits	152	7	11
Irrigation channels	127	13	15
Foot prints and tracks	95	4	24
Swamps	92	4	15
Rock pools	203	4	22
Springs	78	1	22
Seepages	55	2	14
Concrete containers	83	1	0
Domestic utensils	252	0	0
Others	1	0	0
TOTAL	3715	131	457

17. ANTI-MALARIAL MEASURES.

The six mosquito searchers were employed mostly in larvae collecting throughout the Municipal area. A few adult mosquito searches were carried out in the various locations where there was considerable crowding of Asian and native dwellings.

For the purpose of routine searches the Municipality has been divided into 27 sections, the sections being described hereunder. Four sections, numbers 23, 25, 26, and 27, were not searched till July and August. Sections 25, 26, and 27 are in the Eastleigh area contiguous to the new military aerodrome.

Each day two or three sections are assigned to the searchers who made as thorough a search as possible during the morning hours, marking on maps the positions of all breeding places. The following day one searcher per section, armed with the two maps of the section, then acts as guide to the oiling gang, thus being able to keep a check on the oiling boys and ascertain that all breeding and potential breeding places have been oiled.

Appended is the table showing the number of sections searched and the number found with breeding, per month.

Month.	Sections searched.	Sections breeding.
January	53	49
February	48	38
March	52	47
April	52	51
May	70	64
June	69	64
July	70	62
August	72	63
September	74	67
October	72	69
November	69	64
December	48	45
TOTAL	749	683

During the year 66 sections were found without any breeding places.

The following descriptions will be sufficient to describe the position of the sections as used by the searchers:—

SECTIONS OF MUNICIPALITY.

1. Burnbrae—Thomson's Estate.
2. L.R.2—Kilimani Estate.
3. L.R.1—Upper Hill Estate.
4. Nairobi Hill.
5. Lower Nairobi Hill.
6. South of Whitehouse Road from Native Hospital to railway line.
7. L.R. 37/R and L.R. 987/R.
8. Railway Workshops, P.W.D. yards, Prisons and Quarries.
9. City Park.
10. Hospital Hill and Education Reserve.
11. Government House and Arboretum.
12. L.R. 205, 475, 4875, west of Ring Road.
13. "A" south of Upper Parklands and Sclaters Road.
14. L.R. 1870, Upper Parklands Estate.
15. Westlands and Ainsworth Hill.
16. The Nairobi Swamp between River and Ngara Roads.
17. Pumwani Native Location.
18. Racecourse area to Mathari.
19. Asian residential area south of Forest Road.
20. Parklands.
21. Muthaiga.
22. Muthaiga including the Muthaiga Golf Course.
23. North of Kabete Road to the Getathuru River.
24. South of Ngong Road to the Native Hospital.
25. Eastleigh, Sections I to V.
26. North of Juja Road to Getathuru River.
27. Commercial area.

The following is a table indicating the number of malaria cases notified from the 10 notification districts, together with the corresponding control sections and the number of breeding places found.

Notification sections.	No.	Malaria control sections.	Malaria cases.	Breeding places.
Upper Parklands ...	1 ...	10, 12, and 14 ...	3 ...	181
Muthaiga ...	2 ...	21 and 22 ...	3 ...	107
Westlands ...	3 ...	12, 13, and 14 ...	1 ...	177
Parklands ...	4 ...	9, 15, 20, and 22 ...	22 ...	240
Forest Road ...	5 ...	9, 18, 19, and 22 ...	5 ...	216
Racecourse Road ...	6 ...	16, 17, and 18 ...	97 ...	311
Eastleigh ...	7 ...	17, 18, 25, and 27 ...	21 ...	290
Kilimani ...	8 ...	3 and 4 ...	4 ...	234
Hill ...	9 ...	5, 10, and 11 ...	40 ...	378
Commercial ...	10 ...	16, 17, 19, and 8 ...	370 ...	557

Section 9 also includes the present Aerodrome for the purpose of malaria notification returns.

18. BED BUGS.

During the year numerous complaints were received from residents regarding infestations by bed bugs, particularly in boys' quarters.

In order to disinfect premises we tried a number of different insecticides but without any appreciable results until Paradichlorbenzene was used.

The mixture used was simply a solution of Paradichlorbenzene in paraffin and was sprayed through the ordinary oil pump spray on to furniture, walls, beds, clothing, etc., the house being closed from morning until late afternoon.

The solution proved of exceptional value and the results showed a marked improvement over other solutions used, the cost of the mixture being low.

Some 30 rooms were thus treated and freed from bugs, also a number of lorries and native buses were disinfected.

In the original test, three boys' rooms were chosen that were heavily infested. These rooms were of stone with iron roofs and contained the usual beds and furniture. All clothing was inspected and any article with adults or eggs were returned to the room and sprayed.

The kill was quite good after the first spraying, but after a lapse of a week, a second application was made, the results showing that numbers of immature bugs were killed but, as some were still found to survive, it was decided to make a routine of three applications, no live bugs being found after the third application.

The solution appears to be able to destroy eggs on contact.

19. 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 within the commercial area.

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

The number of rats destroyed by the Municipal gang totalled 30,996 compared with 30,197 during 1937.

The Railway gang accounted for 10,993 compared with 11,085 during the previous year.

The total number of rats destroyed, namely, 41,989, constitutes a record.

A percentage of the rat catch is examined daily at our own laboratory. During the year 2,336 rats were examined and three found positive to *B. pestis*.

RATS TRAPPED.

Month.	Municipal gang.	Railway gang.	TOTAL.
January ...	2,700	805	3,505
February ...	2,450	871	3,321
March ...	2,918	988	3,906
April ...	2,561	1,076	3,637
May ...	2,559	832	3,391
June ...	2,128	942	3,070
July ...	2,658	910	3,568
August ...	2,739	1,113	3,852
September ...	2,543	904	3,447
October ...	2,533	713	3,246
November ...	2,677	1,030	3,707
December ...	2,530	809	3,339
TOTAL ...	30,996	10,993	41,989

20. NATIVE BURIALS.

The administration of the burial of pagan natives, including the cemetery, is in the hands of the Public Health Department as also is the control of the Public Mortuary.

The new burial site situated off the road to the civil aerodrome which was selected and put into use during 1937 has been found to be satisfactory. The area fenced off will probably be filled about the end of 1940, after which an extension will be necessary.

21. CREMATORIUM.

As the need for a crematorium in Nairobi appears to be growing it is considered that the Council should again give consideration to the proposal which has been deferred for financial reasons.

The site suggested is in the grounds of the City Park, whilst electricity has been suggested as the power to be used in connection with the furnace.

22. WATER SUPPLY.

In November, the new treatment plant was officially opened by His Excellency the Governor.

Water is now obtained both from the Kikuyu springs and also from Ruiru along the recently constructed pipe line. The quantity of water delivered during the year from the Kikuyu supply was 447,650,600 gallons and from the Ruiru supply 27,508,300 gallons, making a total of 475,158,900 gallons.

The average daily consumption of water amounted to 1,292,543 gallons, which equals 19.73 gallons per head of population.

Frequent bacteriological examinations of the water shows that the quality of the filtrate is highly satisfactory, but owing to difficulties in connection with the sand employed for the filters, much of the Kikuyu water is not yet being treated.

23. HOUSING.

As emphasised in last year's report, the question of housing both Asians and Natives in the town is becoming an increasingly serious problem. The building of the necessary accommodation, in spite of the large increase of building plans submitted, is not proceeding at a rapid enough rate to deal even with the increase of population much less to alleviate the overcrowded conditions which have been present with us for years.

As a consequence, overcrowding with the attendant insanitary conditions still continues and the situation cannot be dealt with as efficiently or energetically as one could wish, as it is recognised that, owing to housing shortage any interference will simply mean, not their elimination but the transference of the unsatisfactory conditions to other places.

These remarks apply to the town in general but in particular to the housing of contractors' labour.

The village of Pangani has now been demolished and the former residents of the village, mostly of the "lodger" class, have removed either to the new housing built near Pumwani or else are aggravating the already overcrowded condition at Pumwani or elsewhere, as the 175 new houses erected are not sufficient for the needs.

The Council has considered the question of requiring contractors and others to erect housing for their employees and has decided to allocate a particular site near the Stadium for this purpose.

In regard to the Asian community, similar conditions exist, as pointed out in last year's report, overcrowding and general insanitary conditions being common on account of a shortage of housing at reasonable rents. This applies more particularly in relation to the poorer class of Asiatic.

Although closing orders have been issued in respect of 20 buildings during the year and some 1,200 nuisances remedied; if sufficient housing had been available for the tenants of the many existing insanitary dwellings, much more could have been accomplished.

While it is recognised that the housing problem is not peculiar to Nairobi but present in varying degrees in most towns, more especially in those where the growth is rapid, it is strongly recommended that urgent steps be taken to deal with the situation and, even though the measures taken may not be financially economical, to set off any deficit against the promotion of health both in the employees themselves and also of the community in general.

24. NEW BUILDINGS.

A very considerable increase is again evident in the number of plans submitted for new buildings and alterations to buildings. The number has been on the upward grade for some years.

During 1938, 548 plans were submitted, of which a large proportion required further scrutiny following necessary amendments.

Inspections in connection with works in progress numbered 2,487 and a total of 303 completion certificates were issued.

25. SANITATION.

CONSERVANCY.

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

The daily number of buckets conserved totalled 3,469 compared with 3,385 during 1937, the increase being accounted for by the occupation of previously vacant premises but in the main to a number of new conveniences.

New and existing premises to the extent of 75 were connected to the sewerage system with a total of 290 water closets.

Excluding septic tanks and pits, there is now a total of 1,717 water closets in use connected with the sewers.

New septic tanks have been installed in 48 instances, making a total of 581 in the Municipality.

Six conserving tanks in connection with septic tanks on land not capable of dealing with the effluent have been installed, increasing the total to 19.

No septic pits were permitted during the year.

SEWERS.

In addition to a considerable amount of surface water drainage being constructed during the year, a total of 14,775 feet of sewers in sizes varying from 2 feet by 2 feet to 6 inches were laid in the undermentioned localities:—

Campos-Ribeiro Avenue	...	...	440 feet
Ngara Road	...	...	1,200 "
Central Zone Outfall Sewers	...	...	1,730 "
Stewart Street	...	...	745 "
Kingsway	...	...	675 "
Zone B Outfall Sewer	...	...	2,135 "
New Native Housing	...	...	4,005 "
Main Outfall Sewer	...	...	2,420 "
Others	...	...	1,425 "

The main outfall sewer was completed during the year, 2,420 feet of concrete egg-shaped sewer, 1' 9" by 1' 9" being laid.

REFUSE COLLECTION.

As in previous years various types of transport were used for the removal of refuse, there being ox-drawn carts, motor lorry, tractor with trailer, and the motor freighter. This latter was withdrawn from ordinary service about mid-year when the first of the specially constructed Bedford refuse vehicles was brought into service.

Later the second vehicle of this type was put into commission and, following an overhaul, the freighter was employed in the removal of scrap iron and other refuse from vacant plots and road reserves.

The additional cell to the destructor was completed early in the year and the augmented plant was brought into use after a year's idleness.

A qualified Cleansing Inspector was appointed as from May 1st whose duty it will be to supervise the cleansing services of the town as a whole, an arrangement which has been sought for some time past.

23. 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 district inspector was absent for six months on overseas leave and another for two months for the same purpose.

One inspector is whole time on food inspection and is assisted by a district inspector during the mornings.

A total of 56 inspector months was available during the year, but making an allowance for food inspection, local leave and sickness, the number of inspector months for district duties amounted to only 36.

During the year 10,260 premises were inspected for nuisances compared with 8,267 during 1937 and 1,277 defects were remedied.

The very large number of plans dealt with should be noted, namely 548, the inspections made in connection with these plans being 2,487.

SUMMARY OF WORKS PERFORMED.

NUISANCES.

Inspections made to:—

Dwelling houses	2,836
Restaurants and eating houses	234
Laundries	29
Hotels and bars	67
Offensive trades	32
Stables and cattle sheds	31
Offices and trade premises	1,654
Open spaces, streets, etc.	1,065
Public buildings	75
Complaints investigated	45
House to house inspections	295
Premises surveyed	28

Defects remedied:—

Premises dirty or verminous	97
Light or ventilation insufficient	6
Dwellings unfit for habitation	205
Yards unpaved	16
Rat infestation	6
Latrine accommodation defective	87
Latrine accommodation inadequate	34

Drains, closed water carriage, choked	23
Drains, closed water carriage, defective	26
Drains, open, choked	48
Drains, open, defective	23
Drains absent or inadequate	25
Septic tanks or cesspits choked	17
Septic tanks or cesspits defective	18
Waste water disposal defective or inadequate	71
Soil or waste pipes choked	4
Soil or waste pipes defective	4
Accumulations of refuse	197
Dustbins absent or defective	95
Foodstuffs unprotected against rats	42
Sleeping in kitchens or food stores	14
Mosquito breeding	111
Miscellaneous	108
Defects remedied by verbal intimation	532
Defects remedied by written intimation	191
Defects remedied by Statutory Notices	554
 SEWERAGE CONNECTIONS.	
Premises connected to sewer	75
Pail closets, etc., converted into water closets	27
New closets installed to sewer	290
 SEPTIC TANKS.	
Number installed	48
New closets connected to septic tanks	98
 ERECTION AND ALTERATION OF BUILDINGS.	
Plans dealt with	548
Inspections made	2,487
Completion certificates issued	303
 LICENSING OF TRADE PREMISES.	
Inspections made	682
Re-inspections made	62
 INFECTIOUS DISEASES.	
Cases investigated	95
Inspections made	141
Rooms disinfected	508
 RATS.	
Number destroyed	30,996
 NOTICES SERVED.	
Public Health Ordinance	113
L.G. Municipal Ordinance	13
Municipal By-Laws:	
Insanitary Huts, etc.	111
Cleansing Plots, By-law 499 and 465(f)	68
Inadequate latrine accommodation, By-law 510	9
Refuse receptacles and removal	25
Drainage By-laws	53
Others, By-laws 495, 509, 510, 516, 518, and 521	59
Closing Orders (Insanitary Dwellings By-laws)	20

27. FOOD CONTROL.

TRADE PREMISES SUBJECT TO SPECIAL CONTROL.

	1931	1932	1933	1934	1935	1936	1937	1938
Aerated water factories ...	4	4	5	4	5	5	5	4
Bakeries ...	13	11	10	11	12	10	11	11
Butchers' shops ...	21	21	19	13	14	12	13	8
Dairies and milk shops ...	28	26	32	24	22	21	20	17
Fishmongers ...	14	15	11	8	8	8	9	9
Laundries and dhobies ...	21	24	20	19	24	20	24	24
Restaurants ...	6	7	8	6	8	6	9	9
Eating houses ...	40	40	32	29	23	27	27	28
Vegetable dealers ...	19	22	20	16	20	21	21	20

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

They are also exclusive of premises in the native locations where there are 20 butchers' shops, 12 eating houses, and 8 vegetable dealers.

Of the 17 dairies and milk shops, 8 are cow-keepers who retail milk, comprising seven Europeans and one Indian. The remaining nine premises are retailing milk depots, one being European and eight Asiatic.

No formal samples of milk were taken during the year, but of 2,256 gallons which were inspected, 120 gallons were condemned for various causes as being unfit for sale.

It became evident towards the end of the year that a certain amount of meat was being brought into the town from outside sources and being sold without having been inspected and passed for food. Energetic steps were taken to stop this practice and an immediate increase in the number of oxen slaughtered at the Municipal Abattoir was recorded.

INSPECTIONS TO PREMISES UNDER SPECIAL CONTROL.

	No. of inspections.
Aerated water factories ...	675
Bakeries ...	138
Butchers' shops ...	360
Dairies and milk shops ...	1,434
Fishmongers ...	232
Laundries and dhobies ...	29
Restaurants ...	22
Eating houses ...	212
Vegetable dealers ...	273
Hotels and boarding houses ...	67
Markets ...	509
Grocers ...	273

FOOD INSPECTED AND CONDEMNED.

	Inspected. lbs.	Condemned. lbs.
Fish ...	38,927	14
Fruit ...	15,011	533
Provisions ...	72,499	1,537
Meat ...	282,360	1,903
Vegetables ...	20,197	—
Bread ...	3,027	—
Bottled goods, etc. ...	22,106	824
Milk ...	2,256 gals.	120 gals.
Beer ...	153 bots.	153 bots.
Mineral waters ...	1,711 bots.	7 bots.

28. MILK DEPOT.

In the report for 1937, it was explained that the Council formulated a scheme for the inspection of all milk coming from unregistered sources. To enable this to be done a depot was established and equipped at the Municipal Market.

However, as the necessary by-laws have not been approved, nothing further has been done in the direction of compulsory examination of milk and the depot has remained idle.

29. ABATTOIR.

The total number of animals slaughtered during the year amounted to 62,914, exceeding the figure for the previous year by 6,939, the increase being almost solely due to the greater number of goats dealt with.

The number of oxen slaughtered totalled 10,770, being slightly in excess of the previous year's total of 10,521.

The number of grade oxen killed declined from 4,048 to 2,464, whilst the number of native oxen slaughtered increased from 6,473 to 8,306.

465 calves were sent to the abattoir compared with 396 last year, whilst the percentage of condemnations decreased from 16.7% to 16.3%.

There was a slight increase in the number of sheep dealt with, namely, 12,742 as against 12,228 during 1937.

The number of goats killed showed a 17% increase over the previous year, the figures being 36,114 and 30,786 respectively.

The number of pigs slaughtered totalled 2,823 compared with 2,045 for 1973, an increase of 38%.

Tables are given below recording the number of animals slaughtered during the year together with the percentages of condemnations for the types of animals and also for the causes of condemnation.

Tables are also given showing the condemnation rates both for all causes and for measles for the types of oxen, over a number of years.

The number of oxen condemned for all causes amounted to 2,001 or 18.5% of the oxen slaughtered compared with 2,244 or 21.3% during 1937. Of these 2,001 oxen, 433 were grade and 1,568 native, the condemnation rates being 17.5% and 18.8% respectively, compared with 15.9% and 24.7% during 1937.

368 grade and 1,436 native oxen were condemned on account of measles, the percentages being 14.9% and 17.2% or a total of 1,804 oxen with a percentage of 16.7%.

Of the remainder of the oxen condemned, 49 were rejected on account of dropsy, 49 for being fevered, 26 for redwater, 21 for extensive bruising, 18 for jaundice, 14 for septic conditions, 6 for emaciation, 6 for tuberculosis, 3 for heartwater, 3 for rinderpest, 1 for anaplasmosis, and 1 for being moribund.

No condemnation for East Coast fever was recorded during the year.

Of the 76 calves condemned, 56 were rejected on account of measles, 5 for being fevered, 5 for emaciation, 4 for jaundice, 4 for septic condition, and 2 for immaturity.

176 sheep were condemned, 58 on account of lymphadenitis, 61 for emaciation, 20 for fevered condition, 19 for dropsy, 7 for jaundice, 6 for extensive bruising, 3 for heartwater, 1 for septic condition, and 1 for uraemia.

A total of 1,454 goats were condemned during the year. Of these 446 were rejected on account of heartwater, 270 for lymphadenitis, 303 for being fevered, 183 for dropsy, 126 for emaciation, 99 for jaundice, 21 for pleuropneumonia, 5 for septic conditions, and 1 for extensive bruising.

Only 29 or 1.0% of the pigs slaughtered were rejected. Of these 29, 7 were on account of being fevered, 6 for measles, 5 for tuberculosis, 4 for septic condition, 4 for extensive bruising, 2 for lymphadenitis, and 1 for jaundice.

In order to obviate trouble arising on account of religious susceptibilities for the Asian communities, two inspectors are employed for the examination of meat at the abattoir so that the same inspector does not examine both the Mohammedan and Hindu carcasses.

The estimated weight of meat condemned amounted to 916,270 lbs., a decrease on last year's total of 983,721 lbs.

INSPECTIONS.

1938.			Inspected.	Condemned.	Percentage of carcasses condemned.
Oxen—grade	...	2,464		433	17.5
native	...	8,306		1,568	18.8
		—	10,770	—	18.5
Calves	...		465	76	16.3
Sheep	...		12,472	176	1.3
Goats	...		36,114	1,454	4.0
Pigs	...		2,823	29	1.0
TOTAL	...		62,914	3,736	5.9

ORGANS CONDEMNED APART FROM CARCASSES.

Hearts	...	...	5,197
Heads	...	...	4,005
Tongues	...	...	4,038
Kidneys	...	...	8,512
Livers	...	...	24,604
Lungs	...	...	31,620
Spleens	...	...	4,061
Stomachs	...	...	5,050
Intestines	...	...	4,103
Others	...	...	462
TOTAL	...	...	91,652

ESTIMATED TOTAL WEIGHT OF MEAT CONDEMNED.

Beef	...	783,081 lbs.
Veal	...	7,716 lbs.
Mutton	...	22,543 lbs.
Goat	...	89,772 lbs.
Pork	...	13,158 lbs.
TOTAL	...	916,270 lbs.

CONDITIONS NECESSITATING CONDEMNATIONS.

	Oxen.			Calves.	Sheep.	Goats.	Pigs.	TOTAL.
	Grade.	Native.						
Anaplasmosis	...	1	—	—	—	—	—	1
Cysticercus bovis	...	368	1436	56	—	—	—	1860
Cysticercus cellulosae	...	—	—	—	—	—	6	6
Dropsy	...	9	40	—	19	183	—	251
Emaciation	...	2	4	5	61	126	—	198
East Coast Fever	...	—	—	—	—	—	—	—
Extensive bruising	...	9	12	—	6	1	4	32
Fevered	...	30	19	5	20	303	7	384
Heartwater	...	—	3	—	3	446	—	452
Immaturity	...	—	—	2	—	—	—	2
Jaundice	...	5	13	4	7	99	1	129
Lymphadenitis	...	—	—	—	58	270	2	330
Moribund	...	—	1	—	—	—	—	1
Piroplasmosis	...	—	26	—	—	—	—	26
Pleuro-pneumonia	...	—	—	—	—	21	—	21
Rinderpest	...	—	3	—	—	—	—	3
Septic condition	...	10	4	4	1	5	4	28
Tuberculosis	...	—	6	—	—	—	5	11
Uraemia	...	—	—	—	1	—	—	1
TOTAL	...	433	1568	76	176	1454	29	3736

OXEN SLAUGHTERED AND CONDEMNED FOR ALL CAUSES.

Year.	—Grade—			—Native—			—Total—		
	No. killed.	No. cond.	% cond.	No. killed.	No. cond.	% cond.	No. killed.	No. cond.	% cond.
1927	5,634	232	4.1	5,178	335	6.4	10,812	567	5.2
1928	4,907	290	5.9	6,827	480	7.0	11,734	770	6.5
1929	4,151	252	6.0	7,617	762	10.0	11,768	1,014	8.6
1930	4,214	313	7.4	7,243	738	10.1	11,457	1,051	9.1
1931	4,306	471	10.9	9,375	1,318	14.0	13,681	1,789	13.0
1932	3,054	363	11.8	11,044	1,757	15.9	14,098	2,120	15.0
1933	2,924	399	13.6	12,968	2,625	20.2	15,892	3,024	19.3
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
1937	4,048	645	15.9	6,473	1,599	24.7	10,521	2,244	21.3
1938	2,464	433	17.5	8,306	1,568	18.8	10,770	2,001	18.5

OXEN SLAUGHTERED AND CONDEMNED FOR "MEASLES."

Year.	—Grade—			—Native—			—Total—		
	No. killed.	No. cond.	% cond.	No. killed.	No. cond.	% cond.	No. killed.	No. cond.	% cond.
1927	5,634	—	—	5,178	—	—	10,812	490	4.5
1928	4,907	—	—	6,827	—	—	11,734	740	6.3
1929	4,151	—	—	7,617	—	—	11,768	975	8.2
1930	4,214	277	6.5	7,243	683	9.4	11,457	960	8.3
1931	4,306	388	9.0	9,375	1,227	13.0	13,681	1,615	11.8
1932	3,054	321	10.5	11,044	1,568	14.1	14,098	1,889	13.3
1933	2,924	326	11.1	12,968	2,158	16.6	15,892	2,484	15.6
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
1937	4,048	538	13.2	6,473	1,462	22.5	10,521	2,000	19.0
1938	2,464	368	14.9	8,306	1,436	17.2	10,770	1,804	16.7

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

By

EDITH N. HARTLEY, M.B., Ch.B.(Edin.), D.P.H.(Edin.),

Medical Officer in Charge.

During the year the Municipal Council has continued to maintain three Welfare Centres for Africans, under the care of three European Health Visitors, and one for Indians under the care of an Indian Health Visitor, all being under the supervision of Dr. Edith N. Hartley. There has been no change in the staff and the Health Visitors have continued their work of 1937 at their respective Welfare Centres.

The continuity of service of a certain Health Visitor in a particular location is of importance, because it is only after a considerable period that the Africans get accustomed to her personally and to her visits to their homes. There is an initial prejudice to be overcome, because at the beginning there are sometimes feelings of resentment, which have to be allayed, to her questions and discussions on food, clothing and customs in regard to their care of their children. It is only after a time that the Health Visitor is welcomed into the homes as a friend.

PUMWANI WELFARE CENTRE.

This Centre has continued to be under the charge of Mrs. Gibb, with the assistance of one ayah and two dressers. As the location is a long established one there is a larger incidence of venereal diseases than in the other locations with, in consequence, a larger attendance at the V.D. Clinics.

The dispensary work during this year has had a fairly large proportion of men, who came for First Aid treatment of minor injuries, which they incurred while working on the new houses of Pangani Mpya and on the bridge connecting Pumwani with the new location.

There has been a steady increase in the work of each section. Figures of 1937 are given for comparison. If this continues, it will soon be impossible for one Health Visitor alone to give that personal, individual attention to each mother and child which is the essential element of Child Welfare work.

				Clinics held.	Total attendances.	
					1937.	1938.
Child welfare ...	...	...	49	...	9,692	10,420
Venereal disease ...	...	...	51	...	3,988	4,558
Dispensary ...	...	...		...	5,935	8,820
Visits by Health Visitor ...	...	...		...	1,053	2,229
Visits by Native staff ...	...	...		...	3,899	3,631

KARIAKOR WELFARE CENTRE.

This Centre has continued to be under the charge of Miss Smith with the assistance of two ayahs. It serves the small district of Municipal and Government housing and served the larger district of Pangani. Since the demolition of Pangani there has been a considerable diminution in the attendances of women and children. The numbers will necessarily remain low until more houses are built in the vicinity.

A certain number of Pangani women are living in Pangani Mpya (new Municipal housing). Miss Smith is able to continue to look after them because

she has taken over charge of a small section of Railway Landies and combines it with Pangani Mpya, making use of the Railway Landies Welfare Centre.

The rapid extension of housing in Railway Landies and the consequent increase in the number of families made the amount of work in the Landies a physical impossibility for one Health Visitor, so the work has been divided.

	Clinics held.	Total attendances.
Child welfare	50	7,996
Venereal diseases	52	1,801
Dispensary		2,548
Home visits by Health Visitor		1,421
Home visits by ayahs		2,352

ANTE-NATAL CLINICS AT PUMWANI HOSPITAL.

The practice of holding ante-natal clinics, which ordinarily would be held at the two above-mentioned Welfare Centres, has been continued during the year, at the Lady Grigg African Maternity Hospital. In this way the patients become accustomed to the hospital and staff, for by their repeated visits any feeling of prejudice is overcome, also the girls under training get experience in the essentials of ante-natal care.

Clinics held.	Total attendances.
51	2,057

This number of attendances shows a most satisfactory increase on those of 1937, which were 1,681.

K.U.R. AND PANGANI MPYA CENTRE.

As reported above, Miss Smith, Health Visitor of Kariakor Welfare Centre, has taken over the care of the women and children in a section of Railway Landies and combines this work with that of Pangani Mpya, making use of the Railway Landies Centre. This work was only commenced in October and the figures show how very necessary this arrangement was.

One of the Kariakor ayahs has been transferred to assist Miss Smith in this work.

(For three months only)	Clinics held.	Total attendances.
Child welfare	13	1,760
Ante-natal	13	114
Venereal diseases	13	56
Dispensary		484
Home visits by Health Visitor		334
Home visits by ayah		400

RAILWAY LANDIES WELFARE CENTRE.

Miss Pearson has continued to be in charge of this Centre with two ayahs to assist her. As anticipated in last year's report, the additional houses that have been erected have increased the numbers of women and children in the location. These added numbers made it impossible for the Health Visitor to cope adequately with the work and a section of the work of the Landies has been handed over to Miss Smith, since October.

In September, the Railway authorities very kindly put at our disposal the Landies Overseer's House, which, with its larger rooms and charming garden, make it an ideal Welfare Centre. Certain alterations were effected to suit our requirements, the premises were painted inside and outside before the removal,

so we have every reason to be very grateful to the Railway authorities for this most satisfactory accommodation.

By courtesy of the General Manager, K.U.R. & H., a boy has been allowed to continue to assist to clean at the Welfare Centre.

Attending the ante-natal clinics there were 240 resident mothers and 50 "casuals" (women who come and stay for a short period only). There have been 122 births in the Landies and 55 mothers went to hospital for their confinements.

Although there is a large population in the Landies there is comparatively little venereal disease. This is probably accounted for by the fact that the vast majority of houses are occupied by families, married quarters being available for Railway employees.

					Clinics held.	Total attendances.	
						1937.	1938.
Child welfare	...	...	...	50	...	11,799	13,040
Ante-natal	...	...	...	52	...	1,664	1,778
Venereal diseases	...	...	...	52	...	2,081	1,404
Dispensary	...	...	...		...	10,446	8,864
Home visits by Health Visitor					...	1,355	1,647
Home visits by ayahs	...				...	3,348	2,961

INDIAN WELFARE CENTRE.

This centre has continued to be under the care of Miss Benjamin. The trained nurse who assisted her resigned in September and we were fortunate to get in her place Mrs. Kapila, also a Health Visitor trained at the Lady Reading Health School, Delhi, from October 1st.

Again I wish to point out that the Indian community is resident over an extensive area and it is impossible for one Health Visitor and assistant to get into touch with all the expectant mothers and infants.

The Health Visitor has been steadily gaining the confidence of the mothers, as the gradual increase in the numbers show.

Attending the ante-natal clinics there were 437 new cases. Of the total number attending (524), there have been 236 confined in the Maternity Home and 132 were confined in their homes. Out of these 132, only 74 were attended by trained dais.

					Clinics held.	Total attendances.	
Child welfare	...	...	...	52	...	4,109	
Ante-natal	...	...	...	50	...	1,795	
Dispensary	...	...	...		...	7,021	
Home visits by Health Visitor					...	1,389	
Home visits by assistant	...				...	760	

Venereal diseases clinics are not held at this Welfare Centre. Any patients who require treatment are advised to consult their own doctor, as also are patients with other complaints likely to have serious consequences, so there can be no interference with the work of the general practitioners.

MILK DISTRIBUTION SCHEME.

The distribution of milk, free, to undernourished infants, children, expectant and nursing mothers, three times a week at each Welfare Centre was inaugurated in February.

The children were given worm treatment systematically before commencing the milk. It is the custom that, whenever a child returns from the Reserve or from Kisumu it again receives treatment.

The children are eager for their milk, but it has been extremely difficult to persuade the women to drink it as it is contrary to their customs. The Health Visitors have persisted with gentle persuasion and have managed to induce a few mothers to take it. The few who will take it are either Nandis or Kikuyus, but the Jaluo women are particularly prejudiced against it, although they can give no reason for their refusal. Their reply is always the same: "It is not our custom."

Clinic.	FEBRUARY—MAY.			MAY—DECEMBER.		
	Amount.	Children.	Women.	Amount.	Children.	Women.
	Pints.			Pints.		
Pumwani ...	20	35	—	25	52	14
Kariakor ...	10	20	6	15	30	7
Railway Landies ...	10	30	—	15	40	1
Indian ...	2	6	1	3	10	2

Taking the reports of the Health Visitors separately—

PUMWANI.—States that 32 children of over one year had milk, 20 babies under a year had diluted milk, 10 nursing mothers were persuaded to drink milk, and four women suffering from tuberculosis received it also. In all cases the general condition improved.

KARIAKOR.—The Health Visitor states that none of the children showed any appreciable gain in weight, but they have ceased to be constantly ailing and there have been very few serious illnesses among the children during the year. Three tubercular women received milk.

RAILWAY LANDIES.—The Health Visitor considers that the children have benefited greatly since the scheme commenced, but there was no general marked increase in weight.

INDIAN.—The remarks about prejudice against drinking milk do not apply to the mothers attending this Centre.

The milk scheme has helped in demonstrating to the mothers how to wean babies from breast and bottle and the correct way in which milk should be kept in their homes.

Taking the scheme as a whole, there has been no marked general increase in weight among the children receiving milk, although certain cases have gained, but there is obvious improvement in their general condition—muscles and skin being firmer and healthier. There has been less sickness among the children in the locations this year. It is not possible definitely to attribute this to the milk having given added resistance to disease but the Health Visitors are inclined to consider it so—the better nourishment has given the children more resistance to illness.

Dr. Hartley, as well as her duties with the Health Department, has been allowed, by kind permission of the Municipal Council, to attend the Lady Grigg Maternity Hospital in an honorary capacity and she has performed the following operations during the year:—

Caesarean sections ...	6
Inductions of labour ...	10
Int. podalic versions ...	2
Forcep deliveries ...	2
Craniotomies ...	3
Laparotomies ...	2
D. and F. curettages ...	6
D. curettage ...	5

CHILD WELFARE CLINICS.

	Pumwani.	Kariakor.	Railway Landies.	K.U.R. and Pangani Mpya.	Indian.	TOTAL.
Clinics held ...	49	50	50	13	52	214
Attendances ...	10,420	7,996	13,040	1,760	4,109	37,325

NOTE.—The figures for K.U.R. and Pangani Mpya are for three months only, October to December.

ANTE-NATAL CLINICS.

	African Maternity Hospital.	Railway Landies.	K.U.R. and Pangani Mpya.	Indian.	TOTAL.
Clinics ...	51	52	13	50	166
Attendances ...	2,057	1,778	114	1,795	5,744

DISPENSARIES.

	Pumwani.	Kariakor.	Railway Landies.	K.U.R. and Pangani Mpya.	Indian.	TOTAL.
Women ...	2,741	1,189	2,117	99	1,215	7,361
Children ...	5,085	2,293	6,747	385	5,706	20,216
Men ...	790	66	—	—	—	856
	8,616	3,548	8,864	484	6,921	28,433

HOME VISITS.

	Pumwani.	Kariakor.	Landies. Railway	Pangani Mpya. K.U.R. and	Indian.	TOTAL.
Health Visitor ...	2,229	1,421	1,647	334	1,389	7,020
Staff ...	3,641	2,260	2,961	400	760	10,022
	5,870	3,681	4,608	734	2,149	17,042

VENEREAL DISEASES CLINICS.

	Pumwani.	Kariakor.	Railway Landies.	K.U.R. and Pangani Mpya.	TOTAL.
Clinics ...	51	52	52	13	168
Attendances ...	4,558	1,801	1,404	56	7,819

SYPHILIS.

	WOMEN.		CHILDREN.		TOTAL.	Cured.	Completed one course of treatment.	Still attending.	Left without completing course.
	Resident.	Casual.	Resident.	Casual.					
Pumwani ...	168	52	3	1	224	106	—	39	79
Kariakor ...	80	97	—	3	180	4	12	—	164
Railway Landies	50	69	1	6	132	55	26	9	42
Pangani Mpya	4	6	—	—	10	—	—	8	2

YAWS.

	WOMEN.		CHILDREN.		TOTAL.	Cured.	Left before	
	Resident.	Casual.	Resident.	Casual.			Still attending.	being cured.
Pumwani ...	80	169	38	416	703	543	14	146
Kariakor ...	41	54	9	48	152	12	14	126
Railway Landies	—	28	22	124	174	119	3	52
Pangani Mpya	1	—	7	—	8	—	7	1

It has been found during the year that the patients are persevering more with the treatment. They are gradually realizing that, because their symptoms have disappeared it does not necessarily mean that the disease has been cured. Quite a number have continued until they have been told that the Kahn test has given a negative result.

COMPARISON OF ATTENDANCES AND VISITS.

	1932.	1933	1934.	1935.	1936.	1937.	1938.
Child Welfare Clinics ...	7,923	11,448	11,698	11,385	25,190	36,824	37,325
Venereal Diseases Clinics	4,219	3,432	3,967	6,277	8,703	8,363	7,819
Dispensaries ...	23,316	19,861	29,066	36,258	38,058	26,604	27,737
Ante-natal Clinics ...	1,626	1,958	2,198	2,711	3,955	4,994	5,744
TOTAL ATTENDANCES ...	37,084	36,699	46,929	56,631	75,906	76,785	78,625
HOME VISITS ...	3,646	4,373	7,738	12,146	12,532	15,812	17,213

31. STAFF.

The details of the staff working in the Public Health Department during the year are given hereunder:—

MEDICAL OFFICER OF HEALTH.

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

LADY MEDICAL OFFICER.

Dr. E. N. Hartley, the medical officer in charge of Child Welfare, continued to carry out her duties throughout the year.

CHIEF SANITARY INSPECTOR.

This post is still vacant, not having been filled since 1931.

As in previous reports, it must be emphasised that the non-filling of this post is acting detrimentally to the efficiency of the department.

Mr. R. C. Forster, in addition to his district work, has carried some of the duties.

SANITARY INSPECTORS.

Mr. D. Mackintosh and Mr. P. Cairns carried out their duties throughout the year. Mr. R. C. Forster was absent for six months and Mr. S. W. White was absent similarly for two months.

Mr. E. H. Scrivener commenced duty on first appointment on September 1st and continued throughout the year.

MEAT AND FOOD INSPECTOR.

Mr. A. A. Watts continued to carry out the duties throughout the year, being assisted at the abattoir during the last four months of the year by Mr. E. H. Scrivener.

ANTI-MALARIAL OFFICER.

Mr. G. R. C. van Someren continued to carry out the duties throughout the year.

SANITARY OVERSEER.

Mr. T. Bagnall continued his duties throughout the year.

HEALTH VISITORS.

Miss B. B. Pearson, Miss J. Smith, and Mrs. A. Gibb continued their duties at the Railway Clinic, Kariakor Clinic, and Pumwani Clinic respectively, whilst Miss P. Benjamin continued her duty at the Indian Clinic, assisted by Mrs. S. D. Kapila, who was appointed on October 1st.

CLERK.

The duties were carried out throughout the year by Miss W. W. Harris.

NATIVE STAFF.

The office staff consists of a head boy and two messengers.

One male dresser and six ayahs are attached to the various clinics.

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

Gangs of twenty, fourteen, and sixteen boys, on the pay-roll of the Engineering Department, are employed on anti-malarial works, road drain cleaning, and plot clearing respectively.

Administrative control is exercised over the staff of the abattoir, namely, a Superintendent, a clerk, a Mohammedan killer, and 45 native staff.

Control is also exercised over the two Indians employed in connection with the dead cart and public mortuary as well as the native staff at the Native Cemetery.

Personnel of Public Health Department during 1938.

<i>Appointed.</i>		<i>From</i>	<i>To</i>
	MEDICAL OFFICER OF HEALTH.		
5/5/30	Dr. H. W. Tilling	1/1/38	31/12/38
	LADY MEDICAL OFFICER.		
1/2/37	Dr. E. N. Hartley	1/1/38	31/12/38
	CHIEF SANITARY INSPECTOR.		
	Vacancy.		
	SANITARY INSPECTORS.		
6/8/29	Mr. R. C. Forster	1/1/38	31/12/38
15/9/31	Mr. D. Mackintosh	1/1/38	31/12/38
26/8/33	Mr. S. W. White	1/1/38	31/12/38
1/1/36	Mr. P. Cairns	1/1/38	31/12/38
1/9/38	Mr. E. H. Scrivener	1/9/38	31/12/38
	INSPECTOR MEAT AND FOODS.		
1/1/29	Mr. A. A. Watts	1/1/38	31/12/38
	ANTI-MALARIA OFFICER.		
1/2/37	Mr. G. R. C. van Someren	1/1/38	31/12/38
	SANITARY OVERSEER.		
1/6/29	Mr. T. Bagnall	1/1/38	31/12/38

HEALTH VISITORS.

1/1/36	Miss B. B. Pearson	...	...	...	1/1/38	31/12/38
1/1/36	Miss J. Smith	...	...	...	1/1/38	31/12/38
4/6/36	Mrs. A. Gibb	...	...	...	1/1/38	31/12/38
1/9/37	Miss P. Benjamin	1/1/38	31/12/38
1/10/38	Mrs. S. D. Kapila	1/10/38	31/12/38

CLERK.

1/7/35	Miss W. W. Harris	1/1/38	31/12/38
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NATIVE STAFF.

Motor Driver	1
Head Boy	1
Messengers	2
Dresser and Ayahs	7
Rat Boys	6
Oiling Boys	...	...	...	...	6
Searchers	...	...	...	...	6
Food Inspection	...	...	...	...	1
Anti-malarial gang	...	...	...	...	20
Road drain gang	...	...	...	...	14
Plot clearing gang	...	...	...	...	16

32. EXPENDITURE.

The expenditure of the Public Health Department for the year 1938 amounted to £10,883 of which the Government by grants made on account of public health contributed £5,177, leaving an amount of £5,706 to be borne by the Council.

Details of the expenditure by the Public Health Department during the year are given hereunder. The figures in brackets refer to expenditure during 1937.

EXPENDITURE.

ADMINISTRATION.					£	£	£	£
Salaries: M.O.H. and Sanitary Inspectors	...	...	...	...	4,310	(4,076)		
Clerk	...	...	...	...	240	(220)		
Boys' wages, etc.	...	...	...	...	89	(81)		
Locomotion allowance	...	...	...	...	185	(157)		
Passages	...	...	...	...	109	(323)		
Provident Fund	...	...	...	...	395	(453)		
Rent	...	...	...	...	300	(300)		
Printing, stationery, and telephone	...	...	...	...	146	(120)		
Sundry expenses	...	...	...	...	30	(43)		
							5,804	(5,773)
INFECTIOUS DISEASES PREVENTION.								
Hospital fees	...	...	...	...	507	(400)		
Notification fees	...	...	...	...	51	(89)		
Overseer's salary	...	...	...	...	350	(350)		
Native wages, etc.	...	...	...	...	252	(219)		
Oil and stores	...	...	...	...	500	(372)		
Upkeep of lorry	...	...	...	...	88	(85)		
Demolitions	...	...	...	...	12			
							1,760	(1,515)
MALARIA CONTROL.								
Malaria Officer, salary	...	...	...	...	368	(330)		
Native Wages, etc.	...	...	...	...	66	(66)		
Laboratory expenses	...	...	...	...	24	(19)		
							458	(415)

FOOD INSPECTION.

Miscellaneous expenses ...	...	...	...	27 (96)	
				<hr/>	27 (96)

AUXILIARY HEALTH SERVICES.

Salaries: L.M.O. ...	...	...	...	623 (602)	
Health Visitors	...	...	...	1,225 (1,313)	
Medical Stores	...	...	...	436 (344)	
Infant food	...	...	...	75 (79)	
Native Dressers and Ayahs	...	...	...	206 (186)	
Maintenance of clinics	...	...	...	84 (71)	
Stationery, telephone, and sundries	...	...	...	25 (33)	
Furniture for clinics	...	...	...	— ( 48)	
Passage	...	...	...	26	
Provident Fund	...	...	...	134	
				<hr/>	2,834 (2,676)
Total	...	...	...		10,883 (10,475)
Less Government contribution	...				5,177 (5,237)
					<hr/>
Amount contributed by Council	...				5,706 (5,238)
					<hr/>

