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

CITY COUNCIL
OF NAIROBI
K E N Y A

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The Twenty Seventh Annual Report

of

The Medical Officer of Health

1956

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TOWN HALL
NAIROBI
30th July, 1957.

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

Your Worship, Aldermen and Councillors,

I have the honour to present to you my Annual Report on the sanitary circumstances, sanitary administration, vital statistics and the state of the public health of the City of Nairobi for the year 1956, as required by the "Municipalities Ordinance, 1948" and "The Medical Officers of Health Rules, Section 2 (12d)."

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

PUBLIC HEALTH COMMITTEE

DECEMBER 1956

Alderman H. E. Nathoo, M.B.E. .... *Chairman*
Councillor G. B. E. Norburn, F.R.I.B.A. ..... *Deputy Chairman*
His Worship the Mayor, Alderman I. Somen, M.B.E.
The Deputy Mayor, Councillor Mrs. M. Needham-Clark
Alderman C. Udall, C.B.E.
Councillor G. Boswell, O.B.E.
„ E. T. Jones
„ Mrs. E. M. Rayner
„ M. R. Desai
„ Musa Amalemba
„ Ganga Singh Matharu
„ S. Pandit
The District Commissioner, Mr. A. B. Tannahill, M.C.
The Officer in Charge, Nairobi Extra Provincial District, Mr. F. W. Goodbody.

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Her Royal Highness The Princess Margaret

Signing the Visitors Book, African Maternity Hospital, October 18th 1956

INTRODUCTION

During 1956 the phenomenal growth and development of the city continued unabated, and building plans (excluding Government and High Commission) indicating an expenditure of £8,849,351 were passed as compared with £8,046,513 in 1955 and £4,436,715 in 1954.

It must be admitted, with regret, that the provision of much-needed and long-awaited buildings for the expansion of the Public Health Department has not kept pace with our needs. At the end of the year little progress had been made with the provision of African Maternity and Child Welfare Clinics at Ofafa I, Ofafa II and Mbotela estates. No progress was made with the four dispensary units, which are urgently required. Some progress was made in planning the new mortuary, and negotiations regarding finance to establish a crematorium advanced slightly. Also, the ante natal clinic at the African Maternity Hospital, and the house for the doctor were completed. It is only fair to note that this delay in the production of buildings is due to the great difficulty experienced by the City Engineer in obtaining adequate suitable staff.

It is pleasing to record that about the middle of the year a scheme for the re-organisation and modernisation of the Lady Grigg African Maternity Hospital was approved and was systematically carried out through the latter part of the year. Coincidentally with this, the flow of patients increased considerably and in September reached the all-time record of 323 in the month. If this demand for the services of the hospital is sustained, the question of extending it will need to be considered. Happily, this possibility was anticipated by the architects when the hospital was planned in 1951, and no particular difficulty is expected.

One aspect of the general re-organisation was an improvement in training methods for pupil midwives, and the latest examination results, where there was a 100% pass, has justified this. More modern equipment for the care of premature babies has also been ordered.

One outstanding matter was dealt with in August, and that was the decision of the Council to co-operate with Government, the World Health Organisation, and the United Nations International Children's Emergency Fund in an intensive campaign to bring the problem of tuberculosis in the city under control. Out of a population of 210,000, 348 cases of pulmonary tuberculosis were notified during the year, almost entirely African, and this state of affairs could not be allowed to continue.

It is a most fortunate circumstance that the W.H.O. and U.N.I.C.E.F. have decided that our city is one suitable for attention of this kind. Actually, the campaign will be country-wide, but particular attention will be paid to Nairobi where it is proposed, in effect, to submit the whole population to mass radiography and to treat all cases of tuberculosis. The overall cost of the scheme will be £45,000. The ultimate result of this, it is hoped, will be that when the work finishes in 1959 we will be left with a complete picture of the incidence of the disease, we will be aware of actual cases, and they will all be receiving treatment or will by then have been cured.

The proposed handing over by Government of the ambulance services in the city, at present operated by the Police and Medical Department, made little advance, but since this service is closely tied up with the development of the dispensary service, this caused no great anxiety. There is no doubt that when all ambulances in the city are under one control, considerable economy and increased efficiency will result.

A new development, not strictly within the Council but of particular importance to this department, took place early in the year, and that was the formation of the Child Welfare Society of Kenya. This is a voluntary society brought into being to implement the Prevention of Cruelty to Children Ordinance, and it will work in close liaison with local maternity and child welfare organisations. Such legislation has long been in need of the strengthening which the latest Ordinance will give it.

On the 18th October the Princess Margaret paid a short visit to the African Maternity Hospital and met members of the staff, and the Chairman of the Public Health Committee. This privilege was enjoyed and appreciated by all concerned.

A further interesting development in our organisation was the move for the Public Health Department to take over the entire funeral and burial services in the city. Hitherto, African burials have been dealt with by this department in co-operation with the Parks Department. The European section has been dealt with by a funerals officer in the Treasurer's Department.

The new proposal is to centralise the service upon the new mortuary adjacent to the King George VI Hospital. The important aspect of this is that when the building is completed and equipped the custom (which is based upon a Bylaw) of burying persons within twenty-four hours of their death becomes obsolete because the mortuary is refrigerated.

It is expected that this move will be welcome, since it means that relations from a distance can attend funerals and, in fact, the whole procedure of burial can be carried out with more dignity and less haste.

Another administrative move was the proposal made by the Registrar General that this department should take over the registration of births and deaths. The present system is somewhat complicated, and we find each year that there is a marked discrepancy between our figures and those of the Registrar General, which is largely due to failure by relatives to take the proper steps. It is hoped that more accurate figures may be obtained by centralising the procedure and, in any case, our department keeps records of all deaths at present, based upon the certificates supplied by the doctors.

On the public health side, we had two anxieties during the year; one was that during the months of April, May and June we had 64 cases of typhoid in the African locations. This was associated, we believe, with abnormal fly breeding and also with the poor standard of drainage and sewerage in these areas. It was somewhat disturbing to see how typhoid managed to break through the known high level of T.A.B. inoculations amongst the African population, and one can only conclude that the reason was that massive doses of infection were being received by large numbers of people.

Towards the end of the year poliomyelitis began to spread, and here again it appeared that massive infection was taking place. Actually, the high incidence of poliomyelitis amongst the Africans, particularly amongst the lower age groups, is most unusual. It has always been found that immunity amongst Africans has been very high, and the impact of the disease has been very much heavier indeed amongst Europeans and, to a lesser extent, amongst Asians.

Both these occurrences have given an impetus to the Council's plans for a widespread and radical improvement in sanitary services. It must be agreed that the conditions can never be regarded as satisfactory until there is one waterborne sanitary convenience for every family unit.

Another disease which produced a steady flow of cases was cerebrospinal meningitis. Here again, the epidemiology is obscure. Fortunately, most of the cases recovered.

During the year plans and preparations continued for the operation, during 1957, of the dispensary services the aim of which is to provide efficient medical treatment at a moderate fee for the 120,000 African population.

This is a very important move and will be co-ordinated with the tuberculosis scheme mentioned above, and also a campaign against venereal disease which has maintained a high prevalence for many years in spite of our efforts to stamp it out.

This latter campaign will be facilitated by our taking over the treatment of male cases which we have not done hitherto, previously confining our treatment to females, while males were dealt with by the Government Dispensary.

We look forward next year to real progress and expansion.

It is now ten years since the city was free to turn from the activities of war to peaceful development, and five years since it was elevated to the dignity of a city. It is appropriate, therefore, for some comparison to be made between the size and activity of the Public Health Department in 1956 as compared with 1946.

The phenominal advances in public health which have taken place over the past decade are surprising even to those who over the previous twenty years had become somewhat accustomed to steady and almost regular increases in those facts and circumstances recorded in annual statistics. The population, however, did not increase to the same extent as during the years 1936 to 1946, heavy though this increase was.

The increases by races over the past ten years were in the case of Europeans : 93%, Africans 90% and Asians 88%. The percentage increases over the previous decade were 85%, 125% and 132% respectively.

However, it is with buildings that the most striking changes have taken place and, incidentally, of rateable values. The enormous progressive values of buildings planned during the years 1956, 1955 and 1954 have already been commented upon in the introduction to this report, and there is no sign as yet that the building industry is facing a depression !

Many modern blocks of business as well as domestic premises have been built and the erstwhile open spaces of the city are fast becoming covered with houses, bungalows and flats of designs ranging from the commonplace to the ultra modern. One wonders if there is any other place where such activity has occurred, even including the rebuilding of war devastated areas. It is to be expected that rateable values should increase with such changes — the division of large areas of land into comparatively tiny plots and the increased valuations have naturally brought forth many protests from property

owners at the greatly increased rates to be paid for which "we get nothing in return by way of services." In this regard Nairobi differs little from other rising-rate cities and towns, but the figure over the past ten years may be really frightening for some people.

The unimproved rateable value of Nairobi in 1946 was in the region of £8 million; in 1951 £26 million, and in 1956 £40 million — a staggering increase. Even if downward adjustments for inflation are made, the figure would be £8 million (a somewhat arbitrary figure) in 1946 — £19 million in 1951 and £24 million in 1956. These reduced figures were kindly supplied by the East African Statistical Department and are related to the General Index increases over the period.

So, even without the inflation which has taken place, we have a rateable value three times greater in 1956 than was the case only 10 years earlier. Actual increase in pounds sterling is no less than five times — and the end is not yet.

The expenditure on the Public Health Department has increased from £42,274 in 1946 to £219,079 for the year 1956. As can be readily understood, this increase is not for an operationally static department but for such increased services as Day Nurseries, ambulance services, Staff Clinic-cum-Inoculation Centre, funerals and cemeteries. What may be regarded as the basic headquarters staff has a nett increase of five members only.

In an organisation of vastly increased staff in other departments, the personnel position in the Public Health Department is truly remarkable. The appointment of an Assistant Medical Officer, two Sanitary Inspectors, three Health Assistants and a reduction of two in the Infectious Diseases (Control) Section, are the administrative and inspectorate changes which have taken place.

Although the population increased by 90% during the ten years, the water supplied to the city was almost trebled over the same period.

Industry expanded to such an extent that communications became strained, roads and railway sidings having to be constructed to meet the growing demand over land far removed from the small original commercial area. The construction of water mains and sewers proceeded pari passu with other works, and the Public Health nuisances usually associated with rapid development were experienced only in a minor degree. Such expansions, as will be readily understood, necessitate much travelling for the inspectorate as the factory area alone extends for a distance of over four miles from the Town Hall.

The question of travel over such distances must be given some thought in the very near future and possibly satellite health centres set up within the areas most in need of constant surveillance.

Already this principle has been adopted in the African locations where office accommodation has been planned and when put into use will save many hours of useless travel.

The residential areas, even with their great spread, are not in the same need, for days can be set aside to visit the more distant suburbs. But as sewers are laid resulting in five houses standing where one stands today, and when something like saturation point has been reached, it will be in the interests of this Council and ratepayers to have district offices for the more economical transaction of Council business. Land might be earmarked now with advantage, for not only would the health services demand such facilities, but the Revenue Office, Child Welfare Services, Cleansing Department, the Infectious Diseases Section and Fire Brigade would function better being actually within the areas to be served.

It has been agreed that at least one experimental clinic be set up in a residential area to deal with the children of African parents who work and reside outside the Locations. So far, all the African Welfare Clinics have, of necessity, been provided within the Locations. These have increased both in numbers of institutions and in the number of attendances.

Over the ten-year period Asian ante-natal and child welfare attendances increased by over 100% while home visits were raised from over 8,000 to almost 40,000, an increase of 360%.

African attendances at clinics also rose, but to nothing like the figures in the Asian section. This is doubtless due to the disturbing influences of the Emergency and it is only possible to record increases of 7.6% in the case of clinic attendances and 30% in home visits. Detailed commentary will be found in the relative sections of this report.

As European child welfare only began to be administered by the department late in 1947, a comparison is not possible, but since its inception, has more than proved the need for, and the advantages of, the service.

Once again I should like to acknowledge the close and helpful co-operation given by the Director of Medical Services and his staff, members of the Public Health Committee, and the staff of the Public Health Department.

METEOROLOGY

Some Figures of Nairobi Rainfall 1897 - 1956

Readings taken at Nairobi Railway Station

Average yearly rainfall	1897—1900	35.10 inches
Average yearly rainfall	1901—1925	37.81 inches
Average yearly rainfall	1926—1950	32.33 inches

Total Rainfall for 1951	60.08 inches
Total Rainfall for 1952	26.09 inches
Total Rainfall for 1953	21.36 inches
Total Rainfall for 1954	24.18 inches
Total Rainfall for 1955	32.25 inches
Total Rainfall for 1956	27.60 inches

Average Yearly Rainfall 10-year Periods

1901 to 1910	37.16 inches
1911 to 1920	40.71 inches
1921 to 1930	34.90 inches
1931 to 1940	31.98 inches
1941 to 1950	30.60 inches
1951 to 1956	31.93 inches

A NOTE ON THE CLIMATE OF NAIROBI CITY

The City of Nairobi is about 5,500 feet high, rather more than 300 miles from the coast, and about 100 miles south of the equator. It is flanked by high ground on the north and west, and by extensive plains to the south and east. The modifying effect of the topography on an otherwise tropical climate is considerable.

The climate displays only relatively minor seasonal variations, but Nairobi's position so far inland results in a large diurnal variation, particularly in temperature and humidity, while its height causes it to be some 13°F. cooler than the coast. The result is a climate which does not have the enervating effect generally associated with the tropics.

The hottest months are February and March, and during this period afternoon temperatures rise to 85°F. or more, and very occasionally to nearly 90°F., a figure which has never yet been exceeded. The period June to August is invariably one of comparative low day and night temperatures. The average maximum temperature for June is about 72°F.; night-time temperatures are generally about 54°F. giving a mean range of 18°F. The lowest minimum recorded is 44°F. during an August night in 1933, but temperatures much nearer freezing point have been experienced in neighbouring valley situations from time to time.

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

Cloud is least during the period December-March when skies are about half covered in the mornings and less than half covered in the afternoons. From April onwards cloud amount increases until in August at the height of the S.E. monsoons the sky may be quite overcast all morning, the cloud only breaking in the afternoon. As cloud usually decreases after midday there is about 30% more sunshine in the afternoon than in the morning, and it follows that westerly slopes receive more sunshine than easterly. The following figures for mean hours of sunshine per day illustrate this point very clearly:—

	Hrs.		*Hrs.*		*Hrs.*
January	9.8	May	6.2	September	5.7
February	9.8	June	4.7	October	7.4
March	7.2	July	4.0	November	8.4
April	8.5	August	4.1	December	7.1

The significance of these figures is better appreciated when it is remembered that the sun is above the horizon for about 12 hours per day throughout the year.

The figures for average rainfall given in the table on page 16 show a distribution with two peaks, one in March—June (the "long rains") and the other in October—December (the "short rains"). Late December and mid-March is popularly supposed to be the dry season, but there is an appreciable expectancy of rain in this period, a rather greater expectancy in fact than in the cool, dry but cloudy mid-year

period. Rainfall is mainly, although not entirely, in the form of afternoon and evening showers, associated at times with thunderstorms. During the months June to September the S.E. Monsoon may bring a dense cap from which light rain sometimes falls for several hours, mainly during the early morning. Very heavy rain of the tropical deluge type occurs infrequently; when it does it is invariably associated with the more violent type of thunderstorm. In 1951, a very wet year, falls of as much as 5″ in 3 hours were experienced in the Nairobi area during the "long rains." This is, however, exceptional, falls exceeding 2″ in 24 hours being infrequent.

As is general in East Africa, rainfall means can be very misleading. Since several years of short rainfall may follow one another, means have to be interpreted with some circumspection. Some indication of the range of variation is given by the following extreme falls:—

Highest fall recorded in Nairobi 61.80″ in 1930.

Lowest fall recorded in Nairobi 19.13″ in 1943.

It is apposite to note at this juncture that the mean annual evaporation from a free water surface in Nairobi is some 36″, i.e. a figure comparable with the mean rainfall.

High winds are not common in Nairobi, but during February and March moderately strong east or north-easterly winds prevail, which, combined with very low humidities and high temperatures, make the few weeks before the rains the most trying of the year.

SOME METEOROLOGICAL DETAILS — EASTLEIGH AERODROME, 1956.

(From the E.A. Meteorological Department)

	1956	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TEMPERATURE (F) ...	Mean Maximum	75.5	79.2	80.8	78.0	75.7	74.7	72.7	74.9	76.6	79.7	74.0	75.6
	Mean Minimum	56.6	56.5	58.8	59.2	58.1	55.0	51.1	53.4	53.5	56.0	58.0	57.0
	Mean	66.1	67.9	69.8	68.6	66.9	64.9	61.9	64.1	65.1	67.9	66.0	66.3
RAINFALL (inches) ...		5.13	1.43	3.44	4.64	1.30	0.24	1.08	0.32	0.56	1.65	6.78	1.03
DAYS OF RAIN ...		13	6	12	13	14	3	2	3	6	7	19	8
AVERAGE RAINFALL OVER 40 YEARS ...		1.38	1.89	4.69	7.93	5.03	1.61	0.59	0.94	0.94	2.08	3.86	2.70
RELATIVE HUMIDITY % (E.A.S.T.) ...	(0900)	78	78	80	82	83	79	80	80	77	73	86	80
	(1500)	55	44	43	51	53	46	48	49	45	37	55	50
MEAN ATMOSPHERIC (E.A.S.T.) ...	(0900)	838.2	838.7	839.3	839.4	840.9	841.9	841.8	841.3	840.7	840.8	840.3	839.8
PRESSURE (mbs.) ...	(1500)	835.1	835.2	835.8	836.0	837.6	838.9	839.0	838.0	837.2	836.5	836.8	836.6

SECTION 3

VITAL STATISTICS

GENERAL

Area of City	20,480 acres or 32 sq. miles.
Population (estimate) ...	210,000
Population density per acre	10.25

Summary of Vital Statistics

	Estimated population	Deaths	Death rate per 1,000	Live births	Birth rate per 1,000	Infant deaths	Infant mortality rate	Live and still births	Maternal deaths	Death rate per 1,000 births
European	20,000	118	5.9	452	23	9	19.9	460	2	4.4
Asians	70,000	415	5.93	3.806	55.4	178	46.7	3,880	2	0.53
Africans	120,000	1,117	9.3	2,935	25.6	383	130.5	3,079	8	2.5
TOTALS	210,000	1,650	7.86	7,193	34.25	570	79.2	7,419	12	1.6

Summary of Principal Causes of Death

(Figures in brackets=total deaths)

Europeans (118)		**Asians (415)**		**Africans (1,117)**	
Circulatory	32=27%	Under 1 year	105=25%	Respiratory	204=18%
Nervous	17=14%	Respiratory	56=13.5%	Infective	171=15%
Respiratory	14=11.8%	Circulatory	49=11.8%	Digestive	170=15%
Cancer	12=10%	Digestive	44=10.6%	Under 1 year	148=13%

Table 1

Population Figures 1952 to 1956

(Estimates by East African Statistical Department)

	1952	1953	1954	1955	1956
Europeans	15,500	16,000	17,500	18,500	20,000
Asians	56,000	60,000	63,000	67,000	70,000
Africans	95,000	100,000	100,000	110,000	120,000
	166,500	176,000	180,500	195,500	210,000

Table 2

Number of Births Notified in 1956

	RESIDENTS					NON-RESIDENTS				
	MALE		FEMALE		TOTAL	MALE		FEMALE		TOTAL
	Births	Still-births	Births	Still-births		Births	Still-births	Births	Still-births	
Europeans	230	2	222	6	460	113	—	108	1	222
Asians	1,918	38	1,888	36	3,880	30	—	23	4	57
Africans and Others	1,505	77	1,430	67	3,079	329	21	244	12	606
	3,653	117	3,540	109	7,419	472	21	375	17	885

Table 3

Birth Rates for Past Five Years

	1952	1953	1954	1955	1956
Europeans	21.03	18.4	20.9	21.4	23
Asians	61.0	54.4	51.9	50.8	55.4
Africans	19.1	16.1	16.5	23.6	25.6

Table 4

Infant Mortality Rates for Past Five Years

	1952	1953	1954	1955	1956
Europeans	24	20	38	18	19.9
Asians	56	49	50	48	46.7
Africans	299	281	187	111	130.5

Table 5

Death Rates Over Past Five Years

	1952	1953	1954	1955	1956
Europeans	9.3	6.9	6.45	6.00	5.9
Asians	7.8	6.26	6.61	5.52	5.93
Africans	15.3	17.60	13.63	11.03	9.3
TOTAL	13.3	12.06	10.48	8.63	7.86

Table 6

Maternal Deaths and Maternal Mortality Rate 1956

	Live and Still Births	Maternal Deaths	Rate/1,000 Births
Europeans	460	2	4.4
Asians	3,880	2	0.53
Africans	3,079	8	2.5
TOTALS	7,419	12	1.6

Table 7

COMPARATIVE VITAL STATISTICS 1946 — 1956

	Live Resident Births			Infant Mortality Rates			Resident Deaths			Death Rate				Maternal Mortality Rates		
	European	Asian	African	European	Asian	African	European	Asian	African	European	Asian	African	All Races	European	Asian	African
1946	165	1,526	1,294	48.48	59.63	71.09	78	235	689	7.5	6.3	10.9	9.0	5.9	3.2	2.9
1947	236	1,668	1,346	63.56	98.33	224.37	95	343	906	7.04	9.03	11.76	10.46	—	4.0	2.8
1948	226	2,250	1,554	75	67	187	108	340	807	10.0	8.2	12.2	10.59	3.6	1.3	4.9
1949	326	2,656	1,703	25	57	168	118	332	922	9.8	6.6	13.8	10.7	3.0	—	2.8
1950	286	2,891	1,794	38.5	57.7	169.5	124	360	982	8.6	7.0	14.0	10.7	6.9	1.0	1.0
1951	304	3,117	1,979	52	52	180	148	437	1,350	9.9	8.0	16.8	12.9	—	2.19	3.4
1952	326	3,416	1,711	24	56	299	114	442	1,453	7.3	7.9	15.3	12.0	3.3	2.5	2.2
1953	295	3,278	1,614	20	49	281	111	376	1,760	6.9	6.2	17.6	12.8	—	0.6	4.0
1954	366	3,274	1,650	32.8	50.4	187.8	113	417	1,363	6.4	6.6	13.6	10.5	2.7	2.1	5.0
1955	387	3,462	2,517	18	48	111	111	381	1,214	6.0	5.52	11.0	8.6	2.5	2.3	2.0
1956	452	3,806	2,935	19.9	46.7	130.5	118	415	1,117	5.9	5.93	9.3	7.85	4.4	0.53	2.7

Summary of the Causes of Deaths

	Europeans	Asians	Africans	Totals	Percentage of all deaths in 1956.	Percentage of all deaths in 1955.	Death Rate 1956.	Death Rate 1955.
1. Infectious and Parasitic Diseases	6	12	171	189	11.45	16.05	0.9	1.38
2. Cancer and other Tumours	12	15	31	58	3.51	1.87	0.27	0.16
3. Rheumatism, Diseases of Nutrition, etc. ...	1	9	28	38	2.3	1.87	0.18	0.16
4. Diseases of the Blood, etc.	—	11	37	48	2.9	2.69	0.22	0.23
5. Chronic Poisoning and Intoxications	—	1	7	8	0.48	0.35	0.03	0.03
6. Diseases of the Nervous System	17	36	55	108	6.54	5.62	0.51	0.48
7. Diseases of the Circulatory System	32	49	34	115	6.96	4.16	0.54	0.35
8. Diseases of the Respiratory System	14	56	204	274	16.6	16.58	1.30	1.43
9. Diseases of the Digestive System	4	44	170	218	13.21	11.48	1.03	0.99
10. Diseases of the Genito-Urinary System (non-venereal) ...	3	14	25	42	2.54	2.4	0.20	0.2
11. Diseases of Pregnancy, Childbirth, etc. ...	2	2	8	12	0.72	0.7	0.05	0.06
12. Diseases of the Skin ...	—	—	2	2	0.12	0.29	0.009	0.02
13. Diseases of Bones and Joints	—	—	4	4	0.24	—	0.019	—
14. Congenital Malformations	4	7	25	36	2.18	1.4	0.17	0.12
15. Diseases peculiar to the First Year of Life ...	3	105	148	256	15.51	15.29	1.21	1.32
16. Senility, old age ...	6	8	4	18	1.09	1.05	0.08	0.09
17. Death from Violence ...	11	30	104	145	8.78	10.6	0.69	0.91
18. Ill-defined Causes ...	3	16	60	79	4.78	7.5	0.37	0.6
TOTAL OF ALL DEATHS	118	415	1117	1650			7.85	8.63

Causes of Infant Deaths

Under one month

International List No.	Cause	Europeans	Asians	Africans	Total
12.	Tetanus ...	—	—	2	2
24.	Septicaemia ...	—	1	—	1
30.	Congenital syphilis ...	—	—	3	3
33.	Influenzal meningitis ...	—	—	1	1
72.	Purpura ...	—	1	—	1
73.	Haemolytic anaemia ...	—	—	1	1
83.	Cerebral haemorrhage ...	—	—	1	1
84.	Mongolism ...	1	—	—	1
107.	Broncho pneumonia ...	—	8	7	15
109.	Pneumonia — undefined ...	—	4	3	7
119.	Gastro enteritis ...	—	2	5	7
122.	Intestinal obstruction ...	—	—	2	2
125.	Portal pyaemia ...	—	—	1	1
144.	Toxaemia of pregnancy ...	2	—	—	2
149.	Arm presentation ...	—	—	1	1
150.	Labour ...	—	1	—	1
157.	Spina bifida ...	—	—	2	2
157.	Congenital heart disease ...	—	1	11	12
157.	Meningomyelocele ...	—	—	1	1
157.	Congenital goitre ...	—	—	1	1
157.	Congenital abnormality ...	1	1	—	2
157.	Congenital maldevelopment of colon	1	—	—	1
157.	Monster ...	—	1	—	1
157.	Myelocele ...	—	1	—	1
157.	Imperforate anus ...	—	—	1	1
158.	Marasmus ...	—	1	2	3
158.	Debility ...	—	2	1	3
158.	Inanition ...	—	—	3	3
159.	Prematurity ...	—	75	101	176
159.	Immaturity ...	—	3	—	3
160.	Birth injuries ...	2	4	3	9
160.	Delayed in 2nd stage ...	—	—	4	4
160.	Forceps delivery ...	—	1	—	1
160.	Intra-cranial injury ...	—	1	—	1
160.	Intra-cranial haemorrhage ...	—	2	—	2
160.	Difficult delivery ...	—	—	2	2
161.	Haemorrhage of newborn ...	—	—	1	1
161.	Cyanosis ...	—	1	—	1
161.	Acute infection of newborn ...	—	—	1	1
161.	White asphyxia ...	—	1	2	3
161.	Umbilical sepsis ...	—	—	2	2
161.	Congenital jaundice ...	—	—	2	2
161.	Asphyxia neonatorum ...	1	5	—	6
161.	Congenital oedema ...	—	—	1	1
161.	Atelectasis ...	—	1	10	11
161.	Anaemia of newborn ...	—	—	1	1
200.	Fever ...	—	1	—	1
200.	Oedema ...	—	—	1	1
200.	Natural causes ...	—	—	2	2
200.	Unknown ...	—	—	3	3
		8	119	185	312

Causes of Infant Deaths

From one month to one year.

International List No.	Cause	Europeans	Asians	Africans	Total
6.	Cerebro spinal fever ...	—	1	—	1
9.	Whooping cough ...	—	—	2	2
13.	Primary tuberculosis ...	—	—	1	1
13.	Tuberculosis ...	—	—	1	1
13.	Pulmonary tuberculosis ...	—	—	3	3
13.	Tuberculous broncho pneumonia	—	—	1	1
14.	Tuberculous meningitis ...	—	1	2	3
24.	Pyogenic abscess of liver ...	—	—	1	1
27.	Bacillary dysentery ...	—	2	1	3
28.	Malaria ...	—	—	3	3
38.	Chicken pox ...	—	—	1	1
69.	Kwashiokor ...	—	—	2	2
72.	Haemophilia ...	—	1	—	1
73.	Secondary anaemia ...	—	—	1	1
73.	Anaemia ...	—	—	3	3
73.	Haemolytic anaemia ...	—	1	—	1
73.	Sickle-cell anaemia ...	—	—	1	1
80.	Encephalitis ...	—	1	—	1
80.	Acute encephalitis ...	—	—	1	1
81.	Meningitis ...	—	1	3	4
81.	Pneumococcal meningitis ...	—	—	2	2
83.	Subdural haemorrhage ...	—	1	—	1
84.	Mongolism ...	—	1	—	1
87.	Cerebral anaemia ...	—	—	1	1
90.	Septic pericarditis ...	—	—	1	1
106.	Bronchitis ...	—	1	—	1
107.	Broncho pneumonia ...	—	10	45	55
108.	Lobar pneumonia ...	—	—	4	4
108.	Bilateral pneumonia ...	—	1	—	1
109.	Pneumonia, undefined ...	—	3	8	11
111.	Pulmonary oedema ...	—	1	—	1
119.	Enteritis ...	—	—	2	2
119.	Diarrhoea ...	—	4	5	9
119.	Gestro enteritis ...	—	16	71	87
119.	Enteritic colitis ...	—	1	—	1
122.	Intussusception ...	—	—	1	1
127.	Obstructive jaundice ...	—	1	—	1
130.	Uraemia coma ...	—	1	—	1
133.	Peri nephritic abscess ...	—	—	1	1
133.	Nephritis suppurative ...	—	1	—	1
157.	Congenital heart disease ...	1	—	5	6
157.	Hydrocephalus ...	—	1	1	2
158.	Malnutrition ...	—	—	6	6
158.	Marasmus ...	—	2	—	2
159.	Prematurity ...	—	4	1	5
161.	Jaundice of newborn ...	—	1	3	4
161.	Asphyxia ...	—	1	—	1
200.	Natural causes ...	—	—	6	6
200.	Unknown ...	—	—	2	2
200.	Ill-defined ...	—	—	1	1
		1	59	198	258

Causes of Deaths

(Corrected for Outward Transfer)

International Classification

Group I.

Infectious and Parasitic Diseases

International List No.	Cause	Europeans	Asians	Africans	Total
1.	Typhoid ...	—	1	18	19
1.	Typhoid meningitis ...	—	—	1	1
6.	Basal meningitis ...	1	—	—	1
6.	Cerebro-spinal meningitis ...	—	1	8	9
9.	Whooping cough ..	—	—	5	5
12.	Tetanus ...	—	1	1	2
12.	Tetanus neonatorum ..	—	—	1	1
13.	Advanced tuberculosis ...	—	—	1	1
13.	Tuberculous broncho pneumonia	—	—	2	2
13.	Pulmonary tuberculosis ...	1	1	33	35
13.	T.B. lung ...	—	1	1	2
13.	Tuberculosis ...	—	—	3	3
13.	Bilateral pulmonary tuberculosis	1	—	1	2
13.	Fibro caseous phthisis ...	—	1	—	1
13.	Primary tuberculosis ...	—	—	6	6
14.	Tuberculous meningitis ...	—	2	7	9
15.	Tuberculous peritonitis ...	—	—	1	1
16.	Tuberculous spine ...	—	—	1	1
16.	Psoas disease ...	—	—	1	1
19.	Tuberculous adenitis ...	—	—	2	2
21.	T.B. pericarditis ...	—	—	1	1
22.	Generalised tuberculosis ...	—	—	6	6
22.	Miliary tuberculosis ...	—	—	7	7
24.	Pyogenic infection ...	—	—	1	1
24.	Septicaemia ...	—	2	5	7
24.	Pyogenic abscess of liver ...	—	—	1	1
27.	Bacillary dysentery ..	—	2	10	12
27.	Dysentery ...	—	—	2	2
27.	Shigella flexner ...	—	—	2	2
28.	Cerebral malaria ...	—	—	1	1
28.	Malaria ...	—	—	22	22
30.	Congenital syphilis ...	—	—	3	3
30.	Syphilitic cirrhosis ...	—	—	1	1
30.	General paralysis of the insane	—	—	3	3
30.	Abdominal aortic aneurysm ...	1	—	—	1
30.	Syphilitic aortitis ...	—	—	1	1
30.	Rupture of aorta ...	—	—	2	2
31.	Tick typhus ...	1	—	—	1
33.	Influenzal broncho pneumonia	—	—	1	1
33.	Influenzal meningitis ...	—	—	1	1
33.	Influenzal pneumonia ...	1	—	—	1
35.	Measles ...	—	—	5	5
38.	Chicken pox ...	—	—	1	1
41.	Hydatid cyst ...	—	—	1	1
41.	Hydatid disease of liver ...	—	—	1	1
		6	12	171	189

Group II.

Cancer and other Tumours

International List No.	Cause	Europeans	Asians	Africans	Total
45.	Carcinoma of tongue ...	—	1	—	1
45.	Carcinoma of pharynx ...	—	—	1	1
45.	Sarcoma of jaw ...	—	—	1	1
46.	Cancerous peritonitis ...	—	—	1	1
46.	Cancer of stomach ...	1	3	2	6
46.	Carcinoma of liver ...	1	1	5	7
46.	Carcinoma of pancreas ...	2	1	1	4
46.	Cancer of oesophagus ...	—	—	3	3
46.	Hepatic carcinoma ...	1	—	—	1
47.	Carcinoma of lung ...	—	2	2	4
47.	Carcinoma of bronchus ...	1	1	—	2
47.	Carcinoma of larynx ...	—	1	1	2
48.	Carcinoma of uterus ...	1	—	—	1
49.	Carcinoma of ovary ...	1	—	—	1
50.	Cancer of breast ...	—	1	—	1
51.	Carcinoma of prostate ...	1	—	—	1
52.	Sarcoma of bladder ...	1	—	—	1
52.	Nephro blastoma ...	—	—	1	1
52.	Hypernephroma ...	—	—	1	1
54.	Cancer of meninges ...	—	1	—	1
55.	Carcinomatosis ...	2	—	3	5
55.	Cancer ...	—	2	—	2
55.	Myelomata ...	—	—	1	1
55.	Malignant growth ...	—	—	2	2
55.	Lympho sarcoma ...	—	—	1	1
55.	Carcinoma of thyroid ...	—	—	1	1
56.	Sub-dural haepatoma ...	—	—	1	1
56.	Cyst ...	—	—	1	1
56.	Brain tumour (non-malignant)	—	1	—	1
57.	Brain tumour ...	—	—	1	1
57.	Intra cranial tumour ...	—	—	1	1
		12	15	31	58

Group III.

Rheumatism, Diseases of Nutrition and of the Endocrine Glands and Vitamin Deficiency Diseases, General Diseases

International List No.	Cause	Europeans	Asians	Africans	Total
58.	Rheumatic fever ...	—	1	—	1
58.	Rheumatic carditis ...	—	—	1	1
59.	Rheumatic athritis ...	—	2	—	2
61.	Diabetes mellitis ...	1	2	—	3
61.	Diabetes ...	—	2	—	2
61.	Diabetic coma ...	—	1	2	3
61.	Severe diabetes ...	—	1	—	1
66.	Ateliosis ...	—	—	1	1
69.	Kwashiokor ...	—	—	24	24
		1	9	28	38

Group IV.

Diseases of the Blood and Blood-forming Organs

International List No.	Cause	Europeans	Asians	Africans	Total
72.	Purpura with haemophilia ...	—	1	—	1
72.	Infantile purpura ...	—	1	—	1
72.	Thrombocytopenia ...	—	—	1	1
72.	Haemophilia ...	—	1	—	1
73.	Sickle-cell anaemia ...	—	—	1	1
73.	Anaemia (aplastic) ...	—	1	—	1
73.	Anaemia (megalocytic) ...	—	—	1	1
73.	Anaemia ...	—	4	25	29
73.	Anaemia (secondary) ...	—	—	1	1
73.	Anaemia (acute) ...	—	—	2	2
73.	Haemolytic anaemia ...	—	1	3	4
73.	Cooley's anaemia ...	—	1	—	1
74.	Leukaemia ...	—	1	—	1
74.	Acute lymphatic leukaemia ...	—	—	2	2
75.	Splenomegaly ...	—	—	1	1
		—	11	37	48

Group V.

Chronic Poisoning and Intoxication

International List No.	Cause	Europeans	Asians	Africans	Total
77.	Alcoholic poisoning ...	—	—	3	3
77.	Acute alcoholism ...	—	—	3	3
77.	Kosakoff Disease ...	—	—	1	1
78.	Encephalopathy ...	—	1	—	1
		—	1	7	8

Group VI.

Diseases of the Nervous System

International List No.	Cause	Europeans	Asians	Africans	Total
80.	Cerebral abscess ...	—	—	1	1
80.	Encephalitis ...	—	4	2	6
80.	Acute encephalitis ...	—	—	3	3
81.	Meningitis ...	1	3	14	18
81.	Meningitis (pneumococcal) ...	—	1	9	10
81.	Meningitis (pyogenic) ...	—	—	1	1
81.	Meningitis (cerebral) ...	—	—	1	1
82.	Transverse Myelitis ...	—	1	1	2
83.	Pontine haemorrhage ...	—	1	1	2
83.	Cerebral haemorrhage ...	6	12	1	19
83.	Cerebral thrombosis ...	—	1	1	2
83.	Sub-arachnoid haemorrhage ...	2	1	3	6
83.	Hemiplegia ...	1	—	—	1
83.	Cerebral embolism ...	—	2	—	2
83.	Extra-dural haemorrhage ...	—	—	1	1
83.	Acute intra cerebral haemorrhage	1	—	—	1
83.	Intra cranial haemorrhage ...	—	—	4	4
83.	Sub-dural haemorrhage ...	1	1	1	3
83.	Congestive heart failure ...	1	4	5	10
84.	Mongolism ...	1	1	—	2
84.	Schizophrenia (katatonic) ...	—	1	—	1
84.	Cerebral neurosis ...	—	—	1	1
84.	Nervous exhaustion ...	1	—	—	1
84.	Schizophrenia ...	—	—	1	1
85.	Status epilepticus ...	1	—	—	1
85.	Epilepsy ...	—	3	1	4
86.	Convulsions ...	—	—	1	1
87.	Cerebral anaemia ...	—	—	1	1
88.	Retinitis ...	—	—	1	1
89.	Otitis media ...	1	—	—	1
		17	36	55	108

Group VII.

Diseases of the Circulatory System

International List No.	Cause	Europeans	Asians	Africans	Total
90.	Pericarditis ...	—	—	1	1
90.	Pericarditis with effusion ...	—	—	1	1
90.	Pericardial haemorrhage ...	—	—	1	1
90.	Septic pericarditis ...	—	—	1	1
91.	Bacterial endocarditis ...	—	1	—	1
91.	Subacute bacterial endocarditis	1	—	4	5
92.	Endocarditis ...	—	1	—	1
92.	Aortic disease ...	1	—	—	1
92.	Aortic regurgitation ...	—	1	1	2
92.	Aortic incompetence ...	—	1	—	1
92.	Valvular disease ...	1	—	—	1
92.	Heart disease ...	—	—	1	1
92.	Rheumatic endocarditis ...	—	—	1	1
92.	Mitral disease ...	—	1	—	1
92.	Mitral stenosis ...	—	—	1	1
93.	Myocardial infarction ...	—	2	—	2
93.	Myocarditis ...	—	—	2	2
93.	Chronic myocarditis ...	—	1	—	1
93.	Myocardial degeneration ...	2	1	—	3
93.	Cardio vascular degeneration ...	2	—	7	9
93.	Toxic myocarditis ...	—	—	1	1
94.	Angina pectoris ...	—	1	—	1
94.	Coronary heart disease ...	—	1	—	1
94.	Coronary thrombosis ...	12	21	1	34
94.	Coronary occlusion ...	1	1	—	2
94.	Coronary infarction ...	—	1	—	1
95.	Rheumatic heart disease ...	—	2	2	4
95.	Auricular fibrillation ...	—	1	—	1
97.	Arteriosclerosis ...	7	3	—	10
97.	Coronary arteriosclerosis ...	1	—	—	1
98.	Gangrene left leg ...	—	1	—	1
101.	Cervical adenitis ...	—	—	2	2
102.	High blood pressure ...	—	1	—	1
102.	Hypertension ...	4	4	3	11
102.	Malignant hypertension ...	—	1	1	2
102.	Hypertensive cardiac failure	—	—	2	2
103.	Internal haemorrhage ...	—	1	1	2
103.	Arterial hypotension ...	—	1	—	1
		32	49	34	115

Group VIII.

Diseases of the Respiratory System

International List No.	Cause	Europeans	Asians	Africans	Total
105.	Laryngitis ...	—	1	—	1
105.	Acute laryngo tracheitis ...	—	—	1	1
105.	Tracheo bronchial laryngitis ...	—	—	1	1
106.	Bronchiectasis ...	—	—	2	2
106.	Tracheo bronchitis ...	—	—	2	2
106.	Terminal bronchitis ...	—	1	—	1
106.	Bronchitis ...	—	2	—	2
106.	Chronic bronchitis ...	—	1	1	2
106.	Acute bronchitis ...	1	—	—	1
107.	Broncho pneumonia ...	1	24	97	122
107.	Superative broncho pneumonia	—	—	1	1
107.	Acute broncho pneumonia ...	—	—	6	6
108.	Acute lobar pneumonia ...	—	—	4	4
108.	Bilateral broncho pneumonia ...	—	—	1	1
108.	Double pneumonia ...	—	1	—	1
108.	Bilateral pneumonia ...	—	3	5	8
108.	Lobar pneumonia ...	1	1	23	25
108.	Terminal pneumonia ...	—	—	1	1
108.	Terminal broncho pneumonia	—	—	1	1
109.	Pneumonia ...	1	12	45	58
110.	Empyema ...	—	1	1	2
110.	Pleural effusion ...	1	—	1	2
110.	Bilateral pleural effusion ...	1	—	—	1
111.	Pulmonary embolism ...	4	1	2	7
111.	Pulmonary oedema ...	1	2	4	7
111.	Hypostatic pneumonia ...	—	1	—	1
112.	Bronchial asthma ...	—	3	1	4
112.	Chronic asthma ...	1	—	—	1
113.	Pulmonary emphysema ...	—	1	—	1
113.	Emphysema ...	2	—	—	2
114.	Atelectatis ...	—	1	—	1
114.	Lung abscess ...	—	—	4	4
		14	56	204	274

Group IX.

Diseases of the Digestive System

International List No.	*Cause*	Europeans	Asians	Africans	Total
117.	Duodenal ulcer ...	1	—	—	1
117.	Gastric ulcer ...	—	1	2	3
118.	Haematemesis ...	—	1	1	2
118.	Gastric haemorrhage ...	1	—	—	1
119.	Enteritis (under 2) ...	—	—	3	3
119.	Gastro enteritis (under 2) ...	—	21	103	124
119.	Acute gastro enteritis (under 2)	—	—	1	1
119.	Enteric colitis ...	—	1	—	1
119.	Diarrhoea (under 2) ...	—	6	6	12
120.	Diarrhoea (over 2) ...	—	1	1	2
120.	Acute enteritis (over 2) ...	1	—	—	1
120.	Gastro enteritis (over 2) ...	—	—	15	15
120.	Enteritis (over 2) ...	—	1	1	2
120.	Infective diarrhoea ...	—	—	1	1
120.	Ulcerative colitis ...	—	1	—	1
122.	Intestinal obstruction ...	—	1	4	5
122.	Intussusception ...	—	—	4	4
123.	Intestinal haemorrhage ...	—	1	—	1
123.	Intestinal colic ...	—	1	—	1
124.	Cirrhosis of liver ...	1	2	14	17
124.	Hepatic cirrhosis ...	—	1	1	2
124.	Portal cirrhosis ...	—	—	4	4
125.	Hepato renal failure ...	—	—	1	1
125.	Liver abscess ...	—	—	1	1
125.	Jaundice ...	—	2	3	5
125.	Portal pyaema ...	—	—	1	1
127.	Obstructive jaundice ...	—	1	1	2
128.	Acute pancreatitis ...	—	2	—	2
129.	Peritonitis ...	—	—	2	2
		4	44	170	218

Group X.
Diseases of the Urinary and Genital System (Non Venereal).

International List No.	Cause	Europeans	Asians	Africans	Total
130.	Uraemic coma ...	—	1	—	1
130.	Acute nephritis ...	—	1	—	1
131.	Chronic nephritis ...	—	1	4	5
131.	Chronic renal disease ...	—	—	1	1
131.	Renal insufficiency ...	—	—	1	1
131.	Uraemia with renal hypertension	1	—	—	1
132.	Nephritis ...	—	1	2	3
132.	Uraemia ...	2	6	13	21
133.	Renal abscess ..	—	—	1	1
133.	Peri nephritic abscess ...	—	—	1	1
133.	Nephritis suppurative ...	—	2	—	2
134.	Nephrolithiasis ...	—	1	—	1
136.	Perineal abscess ...	—	—	1	1
137.	Enlarged prostate ...	—	1	—	1
139.	Salpingostomy ...	—	—	1	1
		3	14	25	42

Group XI.
Diseases of Pregnancy, Child Birth and the Puerperal State

International List No.	Cause	Europeans	Asians	Africans	Total
140.	Abortion ...	—	—	1	1
144.	Eclampsia ...	—	—	2	2
144.	Toxaemia of pregnancy ...	2	—	—	2
145.	Pregnancy ...	—	—	2	2
146.	Post partum haemorrhage ...	—	1	—	1
147.	Venous thrombosis ...	—	—	1	1
147.	Puerperal fever ...	—	—	1	1
149.	Arm presentation ...	—	—	1	1
150.	Labour ...	—	1	—	1
		2	2	8	12

Group XII.
Diseases of the Skin and Cellular Tissue

International List No.	Cause	Europeans	Asians	Africans	Total
153.	Erythema multiforme ...	—	—	1	1
153.	Streptococcal dermatitis ...	—	—	1	1
		—	—	2	2

Group XIII.
Diseases of the Bones and Organs of Movement

International List No.	Cause	Europeans	Asians	Africans	Total
154.	Acute osteomyelitis ..	—	—	4	4
		—	—	4	4

Group XIV.
Congenital Malformations

International List No.	Cause	Europeans	Asians	Africans	Total
157.	Monster ...	—	1	—	1
157.	Congenital heart disease ...	2	3	18	23
157.	Congenital goitre ...	—	—	1	1
157.	Hydrocephalus ...	—	1	2	3
157.	Meningomyelocele ...	—	—	1	1
157.	Congenital maldevelopment of colon	1	—	—	1
157.	Congenital abnormality ...	1	1	—	2
157.	Myelocele ...	—	1	—	1
157.	Spina bifida ...	—	—	2	2
157.	Imperferate anus ...	—	—	1	1
		4	7	25	36

Group XV.

Diseases Peculiar to the First Year of Life

International List No.	Cause	Europeans	Asians	Africans	Total
158.	Malnutrition ...	—	—	7	7
158.	Marasmus ...	—	3	2	5
158.	Debility ...	—	2	1	3
158.	Inanition ...	—	—	3	3
159.	Prematurity ...	—	79	102	181
159.	Immaturity ...	—	3	—	3
160.	Birth injuries ..	2	4	3	9
160.	Forceps delivery ...	—	1	—	1
160.	Intracranial haemorrhage ...	—	2	—	2
160.	Delayed in 2nd stage ...	—	—	4	4
160.	Intracranial injury ...	—	1	—	1
160.	Difficult delivery ...	—	—	2	2
161.	Jaundice of the newborn ...	—	1	3	4
161.	Atelectasis ...	—	1	11	12
161.	Asphyxia ...	—	1	—	1
161.	Congenital oedema ...	—	—	1	1
161.	White asphyxia ..	—	1	2	3
161.	Asphyxia neonatorum ...	1	5	—	6
161.	Cyanosis ...	—	1	—	1
161.	Anaemia of newborn ...	—	—	1	1
161.	Umbilical sepsis ...	—	—	2	2
161.	Congenital jaundice ...	—	—	2	2
161.	Haemorrhage of newborn ...	—	—	1	1
161.	Acute infection of the newborn	—	—	1	1
		3	105	148	256

Group XVI.

Senility, Old Age

International List No.	Cause	Europeans	Asians	Africans	Total
162.	Senility ...	5	8	3	16
162.	General debility ...	—	—	1	1
162.	Arteriosclerosis ...	1	—	—	1
		6	8	4	18

Group XVII.
Deaths from Violence

International List No.	Cause	Europeans	Asians	Africans	Total
164.	Suicide (railway) ...	1	—	—	1
164.	Suicide (firearms) ...	1	—	—	1
164.	Suicide (hanging) ...	—	—	8	8
166.	Homicide by firearms ...	—	—	2	2
167.	Homicide by stab wounds ...	—	1	3	4
168.	Murder ...	1	—	6	7
168.	Assault ...	—	—	1	1
169.	Railway accident ...	—	1	9	10
170.	Traffic accident ...	8	16	53	77
171.	Accident (undefined) ...	—	—	3	3
178.	Carbon monoxide poisoning ...	—	—	3	3
179.	Alcoholic poisoning ...	—	1	5	6
179.	Accidental poisoning ...	—	1	—	1
181.	Burns ..	—	7	3	10
181.	Septic burns ...	—	—	1	1
183.	Drowning ...	—	1	—	1
184.	Gunshot wounds (accident) ...	—	—	1	1
186.	Accidental fall ...	—	—	1	1
193.	Electrocution ...	—	—	1	1
194.	Snake bites ...	—	1	—	1
195.	Fractured skull ...	—	1	2	3
195.	Cerebral concussion ...	—	—	1	1
195.	Anaesthetic ...	—	—	1	1
		11	30	104	145

Group XVIII.
Ill defined causes of Death

International List No.	Cause	Europeans	Asians	Africans	Total
199.	Sudden death ...	1	—	—	1
200.	Natural cause ...	—	1	16	17
200.	Unknown, ill defined ...	—	2	17	19
200.	Malnutrition ...	—	—	11	11
200.	Marasmus ...	—	1	—	1
200.	Terminal inanition ...	—	—	1	1
200.	Fever ...	—	1	—	1
200.	Cerebral cachexia ...	—	1	—	1
200.	Cachexia ...	—	—	1	1
200.	Ascites ...	—	—	1	1
200.	Asphyxia ...	—	—	1	1
200.	Heart failure ...	2	9	6	17
200.	Acute respiratory failure ...	—	—	2	2
200.	Hyperpyrexia ...	—	1	—	1
200.	Oedema ...	—	—	1	1
200.	Emaciation ...	—	—	1	1
200.	Acute cardiac failure ...	—	—	1	1
200.	Anorexia ...	—	—	1	1
		3	16	60	79

NOTIFIABLE DISEASES

Notifiable Diseases, by Races

Diseases	Europeans	Asians	Africans	Total 1956	Totals for previous years 1955	1954	1953	1952
Anthrax ...	—	—	9	9	11	6	7	10
Beri-beri ...	—	—	—	—	—	—	—	—
Blackwater Fever ...	—	—	—	—	2	2	—	4
Cerebro-spinal Fever ...	—	4	102	106	153	30	1	2
Chickenpox ...	103	7	54	164	106	70	238	55
Diphtheria ...	—	—	—	—	5	5	13	30
Dysentery, Amoebic ...	1	—	26	27	18	31	56	75
Dysentery, Bacillary ...	81	13	297	391	466	562	564	344
Encephalitis ...	—	2	—	2	4	5	—	—
Erysipelas ...	—	—	—	—	1	3	2	1
Infective Hepatitis ...	20	1	12	33	21	18	—	5
Kala-Azar ...	—	—	—	—	—	4	—	1
Leprosy ...	—	1	5	6	2	3	9	—
Malta Fever ...	—	—	5	5	6	5	4	6
Ophthalmia Neonatorum	—	—	66	66	77	55	23	19
Para-typhoid ...	—	—	—	—	—	—	—	10
Poliomyelitis ...	3	3	1	7	19	116	20	32
Puerperal Fever ...	—	2	17	19	4	1	1	6
Relapsing Fever ...	—	—	—	—	—	1	—	5
Salmonellosis ...	6	—	3	9	9	31	—	—
Scarlet Fever ...	11	—	—	11	1	—	4	2
Smallpox ...	—	—	28	28	—	—	—	—
Tick Typhus ...	15	—	—	15	18	9	4	24
Trypanosomiasis ...	—	—	—	—	4	1	—	1
Tuberculosis ...	6	14	328	348	283	303	472	361
Typhoid ...	1	2	146	149	173	339	151	38
Totals	247	49	1099	1395	1383	1600	1569	1039

The pattern of the incidence of infectious diseases did not vary very markedly by comparison with the previous five years; in fact, the proportionate attack rates of the diseases remained more or less similar. One or two items, however, call for some mention.

Cerebro-spinal Fever maintained a somewhat unduly high incidence — 106 cases as compared with 153 for 1955 and 30 for 1954. This disease, which was confined almost exclusively to the African population has only appeared in any significant quantity since 1954, and the epidemiology is obscure. There were 9 deaths.

The only reasonable explanation for its continued occurrence would appear to be the overall low level of sanitation in the African locations — as in the case of typhoid. In fact it is a fair assumption that we will encounter the present level of infectious diseases so long as the bucket system of sanitation remains with us, and it will

be extremely interesting to follow the trends of infectious diseases in comparison with the advance of waterborne sanitation and the disappearance of the buckets.

Amoebic and Bacillary Dysentery remained roughly at the usual level, with 27 and 391 cases respectively. It is significant that 81 of these were Europeans — a good indication that there is still much to be done in the way of food hygiene, bearing in mind that for 81 cases actually notified, a very much larger number either not diagnosed or not reported must have occurred.

Poliomyelitis, happily, showed the low figure of 7 only, and of these, one in the African locations. This satisfactory position unfortunately must be regarded with some caution, since a low incidence of poliomyelitis means that the public immunity is likely to diminish accordingly. In fact, it was clear towards the end of the year that it would soon be possible to open up an inoculation campaign against this disease.

Much consideration was given to the use of the Koprowski vaccine, and the opinion was widely expressed that in our particular circumstances an ideal method of dealing with poliomyelitis would be to protect the entire community over a short period with this oral vaccine, supplies of which could be obtained free.

The proposal was, however, turned down by Government, because the Koprowski vaccine had not been approved by the Medical Research Council in England.

It then became evident that we should have to use Salk Vaccine, the cost of which put it beyond the reach of the majority of the African population. It is hoped that before long the objections against the Koprowski vaccine will be overruled, since it is felt that the ultimate effective answer to the menace of poliomyelitis is the universal immunisation of the population.

Tuberculosis maintained its usual high rate of attack, and of the 348 cases reported, 328 were Africans. It is gratifying to record that during the year negotiations proceeded successfully regarding the proposed W.H.O. and U.N.I.C.E.F. survey which should start in January, 1958.

Typhoid also remained high at 149 cases, of which 146 were Africans. This is disturbing because of the high state of T.A.B. inoculation amongst the population. 16,807 Africans were, in fact, inoculated during the year.

The staff of the Infectious Diseases (Control) Department carried out 63,448 vaccinations during the year.

MALARIA AND YELLOW FEVER CONTROL

MALARIA CONTROL

The beginning of 1956 was marked by the handing over to the Nairobi County Council's Health Department of the control of those areas outside the City boundary which lie within the jurisdiction of that authority — an area of approximately 15 square miles. This large area — mainly to the East of the City has always been a menace from a Malaria aspect lying as it does to windward of City and containing some of the finest breeding grounds for A Gambiae, in murrum pits and quarries.

Immediately upon Nairobi County Council becoming a Health Authority early in 1955 plans were made for the handing over of control and a nucleus of staff were trained in preparation for this to take place early in 1956.

A year of very little rain has allowed this new organisation to settle down more easily and it would appear that an efficient control was maintained as there was no increase in Vector Anophelines caught in the catching stations which remain under the control of the City. Advantage was also taken of the favourable conditions in revising detailed maps of sections, rearranging boundaries where necessary etc.

Difficulty continued to be experienced in the control of Culicine which breed in profusion wherever insanitary conditions occur. Temporary interruptions of drainage must occur during development but in some cases it appears that a "cart before the horse" approach is made by those responsible for planning and this Department is left to deal for some considerable time with mosquito breeding in disrupted drainage systems, occasionally on a very large scale.

MALARIA

Malaria Cases notified as having been contracted in Nairobi numbered 171. Blood smears were submitted to the Laboratory in 162 of these cases with results as follows :—

Sub-tertian 148, Benign tertian 13, Quartan 1.

The attack rate of the past five years is given in the following table :—

Attack Rate over past five years

	1952	1953	1954	1955	1956
Attack rate per 10,000	22.5	7.6	6.53	6.4	8.14

This figure of 171 cases shows an increase of 44 over that of 1955, it is however interesting to note that in Europeans and Asians the incidence of cases decreased from 25 and 8 respectively to 6 and 3.

It is also interesting to compare the Vector Anopheline catches for although an increase of over a hundred per cent was recorded over last year, this increase was almost wholly in districts other

than African i.e. Southern and Western 10 as against 3 in 1955 and Northern and Central 2 each where none were recorded in 1955.

It appears likely in view of the above that some of the African cases recorded as being contracted in Nairobi were possible recurrent attacks of an infection contracted elsewhere. It is always extremely difficult to get correct information as there appears to be a fear amongst the African population that if it is found that the case was from outside the City treatment might be refused.

Malaria Cases and Adult Gambiae Catches by Months

(Residents contracting in Nairobi)

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Europeans	1	1	—	2	1	1	—	—	—	—	—	—	6
Asians	—	—	—	1	—	—	1	1	—	—	—	—	3
Africans	11	14	14	14	17	20	18	24	4	9	13	4	162
TOTALS	12	15	14	17	18	21	19	25	4	9	13	4	171
Gambiae Catches	—	8	5	—	1	1	—	—	—	—	3	1	19

A. Gambiae Caught in Fifty-two Collecting Stations

Stations	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Eastern	—	4	3	—	—	—	—	—	—	—	—	1	8
Southern & Western	—	—	5	—	1	1	—	—	—	—	3	—	10
Northern	—	2	—	—	—	—	—	—	—	—	—	—	2
Central	—	2	—	—	—	—	—	—	—	—	—	—	2
TOTALS	—	8	8	—	1	1	—	—	—	—	3	1	22

Anti-Malarial Drainage

Anti-malaria drains and river clearance has kept well up to date with the help of the dry conditions prevailing throughout most of the year.

Considerable difficulty is experienced in preventing erosion of river banks and damage to Anti-malaria drains by unauthorised cultivation. In some areas swampy conditions are deliberately caused by unknown persons in order to irrigate crops. This is done by blocking and breaching Anti-malaria drains or damming rivers near low lying ground. The culprits are seldom caught and once flooded the ground remains swampy for some time, often irrigation has been going on for several days before it is seen.

There appears to be no easily applied remedy for this but a great deterrent is the destruction of the crops which are being irrigated. Unfortunately this entails the use of labour which is never too plentiful for normal control measures.

Maintenance of stone pitched Anti-malaria drains is under control of the City Engineer and occasionally due to pressure of work in that Department and lack of supervisory staff this work is rather

apt to be pushed into the background with the result that further damage to the structure follows with the next heavy rains. It is felt that as clearance of these drains is in the hands of this Department and all drains are seen by a member of the staff once a week a more satisfactory maintenance could be obtained by having this work also under our control.

Aedes (Yellow Fever) Domestic Mosquito Control

Inspections of all premises in Nairobi continued on a weekly basis throughout the year. The African Inspectorate Staff was increased by 4 men to cope with the usual increase in the number of premises to be inspected but it is interesting to note that in 1946 it was reported that each African Inspector averaged 25 premises per day — in 1956 the average was 40 per day.

In 1946 the number of premises to be inspected numbered 6,463. The number in 1956 was 12,101, yet the supervisory staff remain the same in number. Obviously with the Inspectorate covering double the area formerly covered efficiency must suffer unless adequate supervision is maintained and therefore it is necessary to augment the supervisory staff without delay.

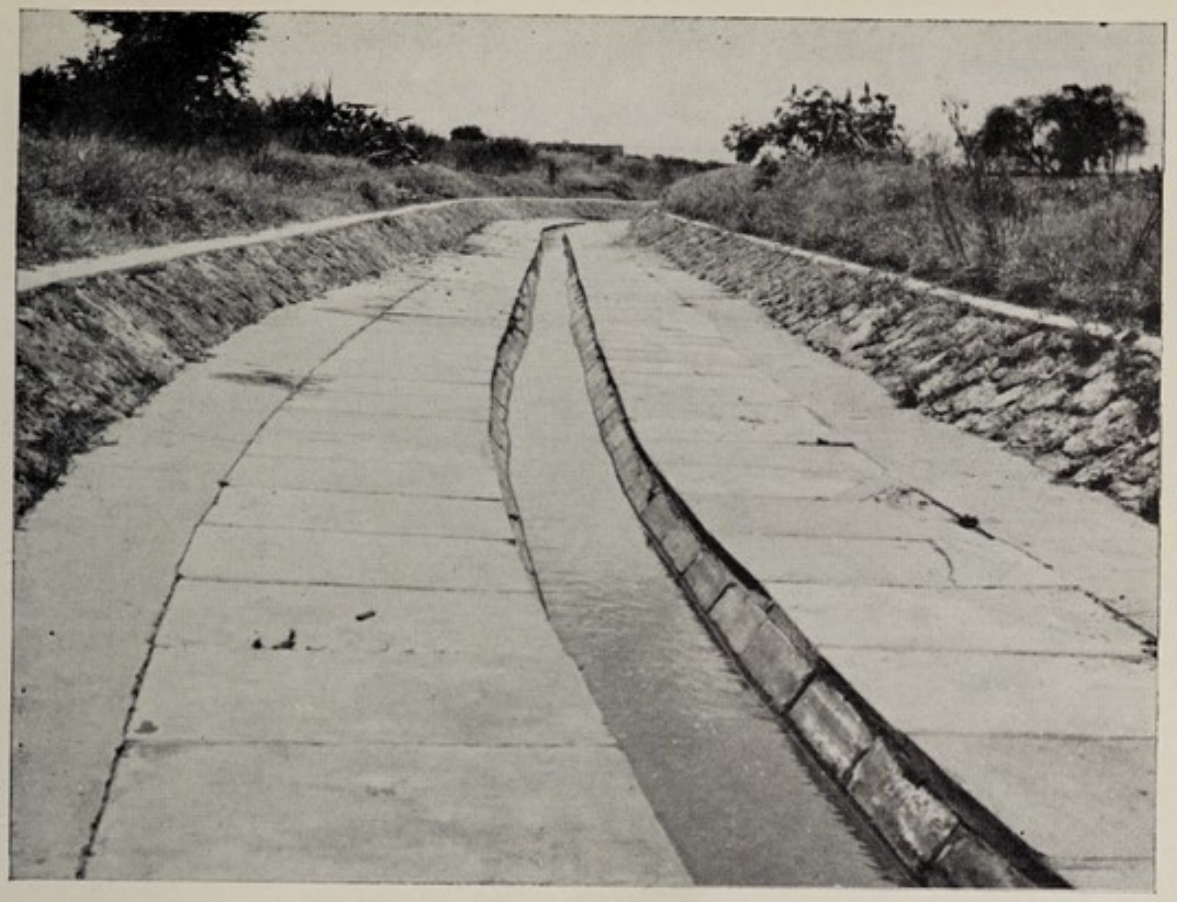
Collections of mosquito larvae numbered 6,876 of which 86 were Aedes Spp. It will be noted from the table which follows that the greater number of Aedes collections were from Temporary Foci, these were mainly old motor tyres and old drums, both of which can be found in profusion throughout the commercial area, the Asian residential areas and to a lesser degree in the European residential areas. Of the Permanent Foci rain water tanks are the only ones of significance. Householders are notoriously lax in inspections of such items as rain water tanks but are quite surprised to find that the mosquito proof gauze has disintegrated and that mosquitoes are breeding in profusion on their own door step, as it were.

It is the practice of the Department to serve a courtesy warning notice to anyone found to be allowing mosquitoes to breed on their premises although this is not a legal obligation, but from the fact that 7,552 such notices were served during the year it will be seen that this can be rather a costly form of courtesy and it might be argued that householders wait for a warning notice before doing anything. On the other hand if all cases were prosecuted without warning the courts of the City would not be able to cope with the numbers.

Prosecutions instituted under the City by-laws for mosquito breeding numbered 24, convictions being obtained in 21 of these cases. Two cases were pending at the end of the year and one was withdrawn as the accused person died before the case reached the courts.

Total Fines paid by accused in the 21 cases heard, was Shs. 2,199/-, an average of Shs. 104.71 per case.

A CANALISED RIVER



This work was done 15 years ago.

A NATURAL STREAM IN THE CITY

This should eventually be dealt with in a similar manner to the one above. (A canalised River)

Aedes Permanent and Temporary Breeding Foci and Indices

		Larvae species found (times)				*Larvae species found (per cent)*			
	No. Examined	Aedes Aegypti	Anopheles	Culex	All Species	Aedes Aegypti %	Anopheles %	Culex	All Species
PERMANENT FOCI:									
Septic Tanks	161,320	—	—	1,096	1,096	—	—	0.679	0.679
Rain Water Tanks	27,689	11	—	58	69	0.039	—	0.209	0.248
Gullies	416,692	2	—	231	233	0.0004	—	0.055	0.055
Earth Drains	138,426	—	—	381	381	—	—	0.275	0.275
Concrete Drains	645,273	—	—	304	304	—	—	0.047	0.047
Soakage Pits	74,168	—	—	1,132	1,132	—	—	1,526	1,526
Bath Pits and Sunken Drums	61,243	—	—	1,482	1,482	—	—	2.419	2.419
Water Meters	915	—	—	54	54	—	—	5.901	5.901
Total Permanent Foci	1,525,726	13	—	4,738	4,751	0.0008	—	0.310	0.311
Temporary Foci	643,459	73	—	2,052	2,125	0.011	—	0.318	0.330
GRAND TOTAL	2,169,185	86	—	6,790	6,876	0.004	—	0.313	0.317

LABORATORY

Expansion of Child and Maternal Welfare work has given more work to the Laboratory and this increase is shown in the following summary. In order to cope with this and rather than increase the number of Technicians for such a minor increase it was decided that a reduction could safely be made in the number of rats examined for P. Pestis. It will however be necessary to increase the Laboratory staff when the Dispensary service becomes the responsibility of the City in the near future.

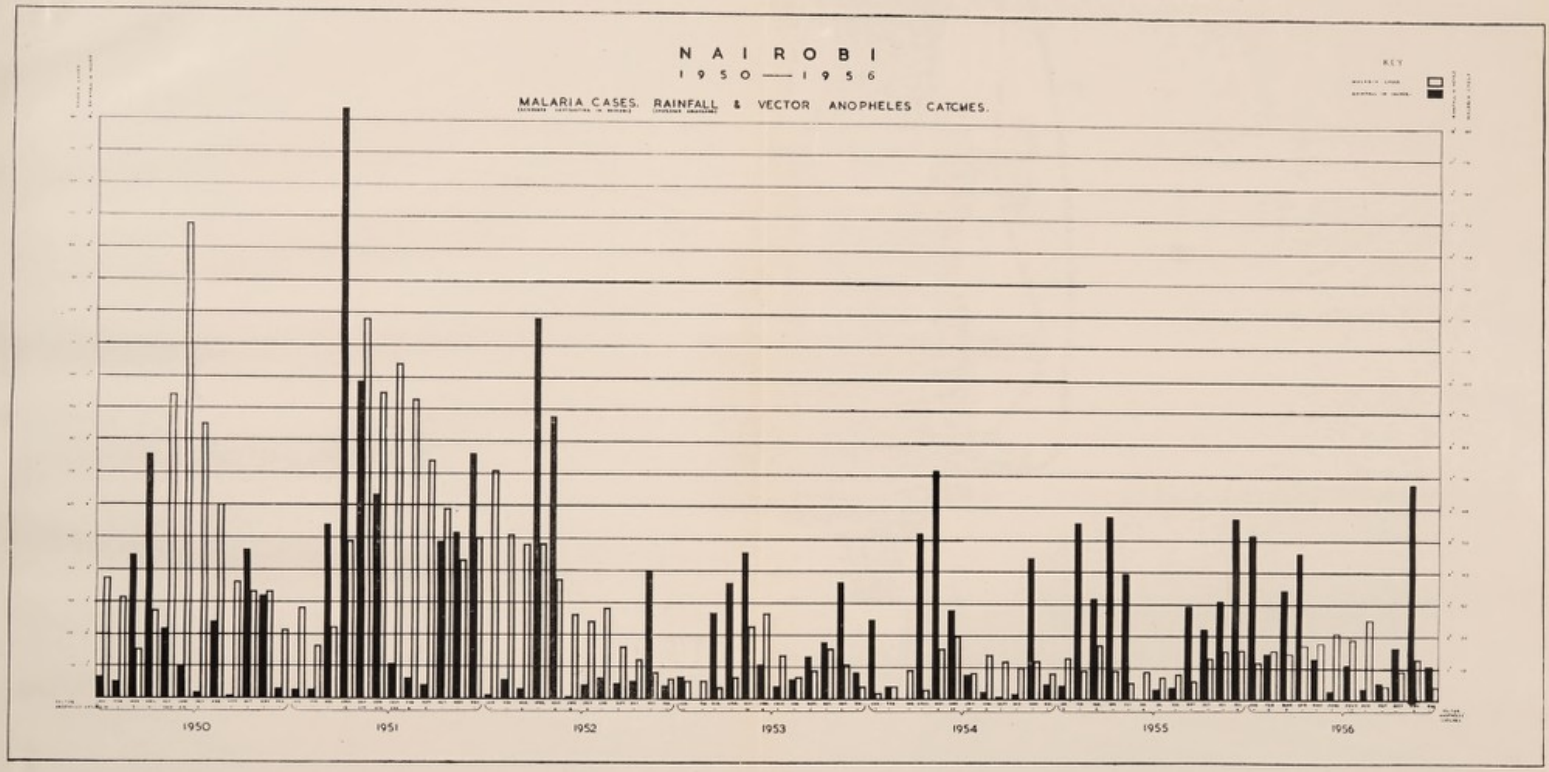
A portion of each day's catch of rats from various localities were examined as usual but a reduction was made in numbers — the total being 4,015 which was approximately one fifth of the bodies recovered.

	1954	1956
Blood Slides — Malaria ...	7,917	11,109
Stool Examinations for Ova and Cysts	4,882	4,273
Venereal Smears ...	9,464	9,995
Sputum ...	38	43
Urines ...	107	126
Blood Counts ...	5	12
	18,413	25,558

NAIROBI

1950 — 1956

MALARIA CASES, RAINFALL & VECTOR ANOPHELES CATCHES.



RODENT AND VERMIN CONTROL

RODENT CONTROL

It was possible during the year to build up the staff of section to full strength and by the end of the year the majority of the men were fairly well advanced in their training.

Full freedom of movement throughout the African estates was not legalised until the year was well advanced and this curtailed activities somewhat as most of the rat catchers are members of the Kikuyu or Embu tribes.

A small team of men for Rodent control and Disinfestation duties were trained for the Nairobi County Council's Health Department. The team consisted of 1 Headman and 2 Operatives, one man deserted before his training was completed and another left his employment after reporting for duty on completion of training. This necessitated the training of 5 men to obtain a full team of 3.

Plague

No cases of plague were reported in or near the City during the year.

Rat Examination

4,004 rats from daily catches and 11 "found dead" were examined for P. Pestis with negative results.

Rodent Destruction

The following table shows the total result of the years work :—

Total Kill

Rattus Rattus	...	2,535
Mastomys coucha panya	...	8,020
Arvicanthis abyssinicus	...	4,129
Mice (all species)	...	3,347
Otomys angoniensis	...	938
Others	...	182
TOTAL		19,151
Estimated kill, poison	...	2,500
All species (Railway admin.)	...	5,203
TOTAL		26,854

It was intended that permanent baiting points should be set up throughout all the African estates and in the Industrial area but this has proved impossible to achieve because of interference with the bait containers. The containers being used are short lengths of 3" or 4 "soil pipe let into the ground or hidden in long grass. In one estate all the containers were removed within two months of being placed in position. It is thought that this may be due to ignorance of the purpose of these pipes although some publicity was given to the scheme and it is the intention to erect small signs at each point, written in the vernacular, when more pieces of pipe can be obtained to replace those lost. Trapping and poisoning despite difficulties continued throughout the year in all the African estates with a view to keeping the Rodent population under control. Mice are the biggest problem particularly in Shauri Moyo where the floors are of asphalt and pitted with mouse holes, in fact every room in Shauri Moyo has its own mouse warren. It is rather disappointing that the City Council would again not approve financial provision for concrete floors. The following tables give detail of work in African estates.

Trapping in African Estates

	Rooms Trapped	Houses Trapped	Rooms Infested	% Index	Trapping Days	Rattus Rattus	Mice	Others	Total
Kariokor and Ziwani	461	—	18	3.9	112	14	8	—	22
Pumwani and Gorofani	—	328	155	46.6	156	59	190	—	249
Starehe	—	—	—	—	—	—	—	—	—
Shauri-Moyo	—	890	150	16.4	156	29	159	—	188
Kaloleni	605	—	81	13.2	52	4	85	—	89
Bahati	1,320	—	38	2.8	92	13	25	—	38
Mbotela	1,770	—	224	12.6	92	25	445	—	470
Ofafa	236	—	12	5.08	40	28	—	—	37
Makadara	660	—	50	7.5	52	2	74	—	81
Totals	5,061	1,218	728	—	752	174	986	—	1,174

Routine trapping in the Commercial and Industrial area is done not primarily as a means of control but as an indication of which premises are heavily infested and requiring the attentions of the Rodent Officer. The following tables therefore are important not only from the point of view of infestation indices, but also give a

general indication of the degree of infestation. It will be noted that there is a 100% infestation rate in the Industrial area but that the degree of infestation appears to be quite low bearing in mind that all these premises are large warehouses and that 30 traps were set in each premise for 3 nights, having of course been previously "pre-baited" for 2 nights.

Trapping Commercial Area

Rooms Trapped	Rooms Infested	Index	Trapping Days	Rattus Rattus	Mice	Others	Totals
929	173	18.6%	212	497	227	—	724

Trapping Industrial Area

Premises Trapped	Premises Infested	Index	Trapping Days	Rattus Rattus	Mice	Others	Totals
75	75	100%	212	285	43	1	329

HANDCATCHING IN OPEN AREAS

Handcatching continues to be a most satisfactory method of dealing with rats whether in open grassland or indoors. The following table gives details and shows the obvious success of this work particularly in regard to the indigenous hut rat — Mastomys coucha panya.

Handcatching in Open Areas

	Kariokor and Ziwani	Pumwani and Gorofani	Shauri Moyo	Kaloleni	Bahati	Ofafa	Mbotela	Makadara	Swamp	Ngara and Pangani	Abattoir	Other Areas	Totals
Rattus rattus	54	60	36	23	143	2	3	3	679	141	4	113	1,261
Mastomys coucha panya	1,273	724	699	294	599	323	91	63	3,238	247	11	451	8,013
Arvicanthis abyssinicus	591	292	185	339	425	338	161	210	768	225	29	565	4,128
Otomys angoniensis	12	19	112	57	90	86	5	17	292	58	—	190	938
Mice	166	10	59	9	100	30	29	22	1,125	147	6	123	1,835
Others	37	13	27	8	9	5	—	1	36	16	—	19	171
Totals	2,133	1,118	1,118	730	1,366	793	289	316	6,138	834	50	1,461	16,346

Hand Catching in Buildings

	Commercial Area	Industrial Area	Totals
Rattus Rattus ...	119	14	133
Mice ...	163	25	188
Others ...	3	5	8
Totals ...	285	44	329

RAT CATCHING ON REPAYMENT

Requests from the public to clear premises of rats numbered 52. These were mainly from worried householders who were troubled by a noisy pair of rats setting up house in the roof or by a colony of field rats eating the flowers in the garden. The table which follows gives the result of this work which brought in revenue of over £50 — almost Shs. 5/- per rat. Rather expensive rats from the householders point of view.

Private and Special Trapping and Handcatching

Rattus rattus ...	204
Mastomys ...	7
Arvicanthis ...	1
Otomys ...	—
Mice ...	35
Others ...	2
Totals ...	249

VERMIN CONTROL

Bed bugs continue to be a serious problem particularly in African estates where the majority of houses are heavily infested. Disinfestation presents no problem except financially, as treatment of the 8,000 rooms would cost the ratepayer several thousands of

pounds per year and naturally the City Fathers are a little reluctant to provide a free service such as this for one section of the community at the expense of others.

A scheme was started of collecting fees for disinfestation from tenants in advance but the difficulties proved insurmountable and many tenants were not prepared to participate.

Bed bugs are also a problem of great importance in hotels and boarding houses and to a lesser degree in private households in the European and Asian community. Most often on investigation the cause of infestation can be traced to the quarters of the African servants, either on the premises or in the African estates. That some householders do now realise the importance of disinfestation of their servants quarters is apparent by the fact that 375 requests were received for this work.

The various other jobs undertaken by the disinfestation team are shown in detail in the following table.

Disinfestations

	Bed Bugs	Cockroaches	Fleas	Flies	Safari Ants	Termites	Ticks	Borer Bettles	Mites	Bees	Rats	Moles	Snakes	General	Totals
Rooms	1,362	61	302	16	—	12	2	—	—	—	—	—	—	3	1,758
Roof	—	—	—	—	—	—	—	2	1	—	2	—	—	—	5
Gardens	—	—	8	—	2	20	—	—	—	—	—	4	4	—	38
Open Places	—	—	—	54	—	—	—	—	—	1	—	—	—	—	55

Insecticides prepared by the Department enjoyed their usual popularity and the total receipts in cash from the public for these amounted to Shs. 13,731.00.

These insecticides were also sold in large quantities to Government Departments, Schools, Hotels, etc.

Total revenue from disinfestation work and sales of insecticide amounted to over £3,500 during the year.

SANITARY ADMINISTRATION

To state at the commencement of this section that there are many unhygienic conditions still existing in the city would be merely to state the obvious. They are the subject of letters to the Press, of editorials, of complaints to this department, of statements in meetings of Council, as well as of letters (sometimes not very polite) to health officials. From this one might gather that lack of cleanliness, untidiness, the discarding of rubbish on public land and similar evils are abhorred by a large section of the population.

However, the average contributor to the correspondence columns of the local newspaper sees only the surface of a problem which extends much further than the public highway or even the sanitary lane. The obvious scars on this city are but the outward visible signs of a disease which lies at the very heart of a large section of the community. For the observant there are many other signs to be seen, behind the ears as it were, or just over the garden wall, while the expert diagnostician, probing deeper, under the skin, out sight of the passerby realises, often dispairingly, that the obvious scars are but mild symptoms of a disease which can paralyse civic pride, moral obligations, public health, and the general well being of the community. If the layman feels sick with indignation at what he sees, the feelings of the official who has embarked on a mission of preventive medicine can perhaps be better imagined than described.

For comfort, he turns to what the year's statistics indicate has been achieved, yet knowing full well that, compared with the task ahead, he has only put up a few sandbags to keep back the ocean. Unmade streets, with their attendant nuisances, dusty in dry weather and impassable mud in the rain, pits and septic tanks which fill up during wet weather and cannot be emptied because plots are inaccessible, undeveloped and unfenced plots which invite the dumping of refuse, derelict cars and builders' materials, workshops which overflow onto the road reserves, latrine buckets breeding flies and acting as reservoirs of disease, innumerable sub-standard "temporary" structures which have already existed for several decades and show no signs of being replaced — and so the list could be extended.

Witch hunting has long since ceased to be a legitimate pastime for the Britisher, but that it flourishes in a modified form cannot be denied. Recrimination, however, will not bring a remedy, but if everyone is determined to see conditions improved, improvement should be possible.

Basically the trouble arises not from official lethargy but from lack of civic pride, too little thought being given to the effect one's behaviour will have on other members of the community.

Every year this department serves hundreds of statutory notices requiring persons to do things which generally are as obvious to them as they are to the official. Every year a hundred or so persons are prosecuted for offences against public health, and many more comply only under the threat of prosecution. Prosecutions are expensive both to the Council and to the accused, and the cost is invariably out of all proportion to the result achieved, yet it seems in this city that such procedure is inevitable.

Much has been done in recent years to improve standards of living accommodation and the standard of buildings used by the public, such as restaurants, eating houses and shops, but how often is the initial advantage of this improvement nullified by the manner in which such premises are used. Until proprietors and customers realise their obligations and put into practice the elementary principles of hygiene which they have been taught, the hope of seeing well maintained high class establishments must be remote.

Many voices have been raised insisting on more and better housing for Africans employed in the city. Many firms have sympathised with this demand and have provided at considerable expense during the past year accommodation for no less than 1,746 employees, one-third of all the housing provided for Africans in the city (excluding domestic servants housed on private plots), yet all too often such provision is found to be the beginning rather than the end of the employers' housing troubles. The premises soon become overcrowded, damaged, dirty and verminous because of the negligence of the occupants, to the continual discomfort not only of the tenant, but of the employer.

What are the fundamentals required to raise this city to the full measure of the status it was granted when the King's representative presented a charter a few years ago? Firstly, a knowledge of the basic principles of hygiene and the desire and will to put such knowledge into practice. Secondly, a determination to help oneself instead of expecting the Government or the Council or one's neighbour to provide for every contingency. Thirdly, the provision by the Council of such services as are essential to the well-being of

the community. Priority in the last category must be given to sewerage. From the absence of sewers springs by far the greater number of nuisance which this department is called upon to abate; overflowing conservancy tanks, defective septic tanks, offensive smells and mosquito breeding from improper disposal of waste water, foul bucket latrines, quite apart from the indirect effect on health and the spread of infectious disease. Another factor in this respect is the unmade condition of many of the roads, lanes, paths and open spaces, including car parks. There can be little doubt that the combination of these conditions contributes in no small measure to the incidence of tuberculosis, poliomyelitis and dysentery throughout the city.

Pumwani still remains the greatest single concentration of everything that is contrary to public health. Year after year representations are made, and year after year nothing is done. The Council cannot postpone the replanning and development of this location much longer. It is futile to imagine that the effect of such appalling conditions can be confined to this comparatively small area of the city. An epidemic in this location could have results which would involve the loss of more money, more time and indeed more lives than will ever be spent in removing this festering sore from our midst.

Summary of Sanitary Inspectors' Work

Inspections :

Dwelling Houses	4,716
Laundries	113
Offensive Trades	33
Trade Premises and Offices	1,409
Open Spares, Streets, etc.	2,235
Camps	98
Barbers and Hairdressers	254
Second Hand Clothing Dealers	23
Public Buildings	261
Other Buildings	814
Swimming Baths	53
Aerated Water Factories	179
Bakeries	131
Butchers	744
Dairies/Milkshops	408
Eating Houses	936
Fishmongers	137
Food Factories	149
Grocers	2,518
Restaurants and Tearooms	499
Hotels and Bars	465
Markets	233
Vegetable Dealers	499
Miscellaneous	1,203

Unsound Food Condemned :

	Lbs.
Bread	145
Butter	4
Biscuits	227
Cereals	1,057
Cheese	1,660
Coffee	5¼
Confectionery	2,132
Fat	122
Fish	13½
Flour	250
Fruit	6,162
Grain and Beans	2,820
Ice Cream Emulsifier	120
Meat	940
Miscellaneous	993
Pharmaceutical Supplies	74
Potatoes	3,200
Sauces, Pickles, etc.	4,258
Sugar	400
Tea	19½
Tinned Milk and Cream	44
Poultry (No.)	381

Licensing Inspections :

Trade premises inspected	2,548
Taxicabs inspected	159
Food Carts etc., inspected	139
Liquor Licensing	390

Miscellaneous :

Complaints investigated	841
Notices served	5,211
Defects remedied	3,113
Premises connected to new sewers	76

Legal Proceedings :	Cases
Public Health Ordinance	26
Milk and Dairies Regulations	5
Bylaws	41
Withdrawn or Dismissed	29
Fines ... ... Shs.	7,225/–
Costs ... ... Shs.	434/–

SECTION 8

FOOD INSPECTION

MILK

The introduction of "Tetrapak" in August 1956 was welcomed by the department. The tetrapak carton is used for the retail sale of pasteurised milk which has been heat treated and sealed at the factory. It is at present the only method of ensuring that milk reaches the consumer in the condition in which it leaves the dairy. Despite the prejudice in some countries against the so-called taste of pasteurised milk, there has been little evidence of this in Nairobi, and a large proportion of the population, particularly European and African, have not been slow to appreciate the advantages and safety of buying milk retailed in this manner. The cost of this type of milk has been kept at the same level as ordinary bottled milk and it is hoped that in view of the generally unreliable quality of the delivery staff employed by dairies that the popularity of Tetrapak milk will increase.

The introduction of Tetrapak did have at first a somewhat adverse effect on the initiative of certain dairies who were considering the construction of more modern premises to follow the traditional method of retailing milk in bottles. However, it seems to be realised now that Tetrapak will not, at any rate for some years, sweep the market and it is pleasing to report that three new dairies are now in construction to replace old premises and that one new additional dairy has been constructed. On the other hand, it is not entirely satisfactory to have to report that several of the smaller dairies comply only with the absolute legal minimum and show no sign of wishing to operate their businesses with any other viewpoint than the amount of profit which can be made, the minimum principles of hygiene being complied with only because they can be legally enforced. In these cases pressure is being brought to bear and it is hoped that in the next report elimination of these premises or considerable improvement will have been effected.

The standard of raw and pasteurised milk reaching Nairobi was maintained at a satisfactory level, as will be seen from the tabulated results of tests carried out by the department.

MINERAL WATER FACTORIES

It is pleasing to report that three of the old type mineral water factories have now discontinued business. Only one of this type now remains in Nairobi and transfer to completely new premises will be effected in the very near future.

1. Resazurin Tests

Month	Category A 4 — 6	Category B 1 — 3½	Category C 0 — ½	Total
January	223	29	49	301
February	193	40	31	264
March	236	42	10	288
April	230	43	14	287
May	221	5	9	235
June	—	—	—	—
July / August	371	19	8	398
September	135	17	15	167
October	230	15	15	260
November	223	27	26	276
December	242	28	8	278
TOTAL	2,304	265	185	2,754

2. Phosphatase Tests

Efficiently Pasteurised	Inefficiently Pasteurised	Not Pasteurised	Total
11	—	—	11

3. Estimation of Fat and Non Fatty Solids

	Satisfactory	Unsatisfactory	Total
Milk	736	149	885
Cream	11	2	13
TOTAL	747	151	898

Samples Submitted by Food Inspector to Government Chemist

Article	Satisfactory	Unsatisfactory	Total
Aerated Waters	1	—	1
Condensed Milk	1	—	1
Dried Soup	5	—	5
Edible Oil	1	—	1
Ghee	3	—	3
Maize Meal Porridge ...	1	—	1
Squashes and Cordials ...	9	—	9
Sugar	—	2	2
Sunflower Oil	1	—	1
Vinegar	1	2	3
Water (town main) ...	4	—	4
TOTAL	28	4	32

Samples Submitted by Food Inspector to Government Bacteriologist

Article	Satisfactory	Unsatisfactory	Total
Aerated Waters	193	4	197
Bottle rinses (aerated waters) ...	7	3	10
Water (town main) ...	325	16*	341
Water (other sources) ...	—	3	3
Other bacteriological examinations	1	—	1
TOTAL	526	26	552

* includes 3 samples taken from water storage tanks and repeat check samples.

Legal Proceedings Instituted in Connection with Food Offences

Nature of Offence	Prosecutions	Convictions	Penalties	Costs
Milk and Dairies Regulations				
(a) Selling or conveying adulterated milk.	2	2	Shs. 60/–.	
(b) Milk in dirty bottle	1	1	Shs. 400/–. 3 months imprisonment.	
Nairobi Municipality (General) By-laws				
(a) Exposing uninspected meat for sale.	1	1	Shs. 400/–.	
(b) Unlicensed meat vans.	2	2	Shs. 60/–. Shs. 50/–.	

EXTRACTS FROM THE ANNUAL REPORT OF THE CITY ENGINEER

SEWERAGE AND SEWAGE DISPOSAL

General. In 1955 I had to report a severe drop in the length of foul sewerage constructed, arising out of the lack of staff to design the work needed.

As predicted this rapid drop continued in 1956 and I have to report that only 4,028′ of foul sewers were constructed by Council during the past year. It is unnecessary to comment how completely inadequate this has been in comparison with the needs of the city.

Four large schemes in Eastleigh, Pangani and Parklands were placed in the hands of Consultants but no construction can be expected on these schemes until well into 1957.

The majority of sewerage construction has been carried out by the developers of private estates and the Railway.

The £325,000 extensions to the Sewage Disposal Works have continued throughout the year and should be completed later in July, 1957. Many of the new units are already in operation.

New Construction. 27,824′ of foul sewers were constructed during the year and the table below gives comparative annual statistics :—

1952	—	32,724 feet.
1953	—	58,884 „
1954	—	80,376 „
1955	—	35,960 „
1956	—	27,824 „

New Construction. Of the 1956 figure the railway constructed 9,066 ft., the Public Works Department 4,550 ft., Private Developers 10,180 ft., and Council 4,028 ft.

Foul sewers existing at the end of 1955	—	97.84 miles
Foul sewers constructed during 1956	—	5.27 miles
Foul sewers at the end of 1956	—	103.11 miles

Although the construction of foul sewers has slumped so badly, the construction of surface water sewers has been increased very materially.

During 1955 no surface water sewers were built whereas in 1956 a total length of 15,059 ft. was completed.

These sewers were generally of large diameter, the bulk being between 18″ and 33″ in diameter. Included are sections of box culverts of total length of 5,980 ft.

Sewage Disposal Works. The Sewage Disposal Works has operated under conditions of overload for much of the year but during the last quarter many new tanks were completed and the headworks put into operation. Since then conditions have substantially improved and by mid 1957 the whole position should be satisfactory.

The Council's Consulting Engineers have been instructed to proceed with the design of a new Sewage Disposal Works outside the boundary. This will treat a further 3½ million gallons of crude sewage per day and the cost of construction is estimated at £750,000.

Maintenance. A very large number of blockages occurred again this year but the monthly total began to fall later in the year when some preventative maintenance was at last possible.

Many of the older sewers in the city are in a poor and leaky condition and are a source of grave concern to me.

Total blockages occurring was 496 compared with 445 in the previous year.

Connections to Sewers.

1953	—	378 connections
1954	—	196 ,,
1955	—	426 ,,
1956	—	554 ,,

WATER SUPPLY

Sources of Supply :

(a) Water from Sasumua Dam was brought into Nairobi for the first time during July. The water level fluctuated a few feet from the top with about 1,800 million gallons storage. Approximately 4 m.g.d. of water is available from this source.

(b) The flow from the Kikuyu Springs has been re-assessed and they are now delivering 900,000 g.p.d.

(c) Ruiru Dam commenced the year with 221 million gallons when the level was 23 feet below spillway, and then filled and overflowed on the 16th May and remained full.

(d) Nairobi Dam remained on stand-by throughout the year and was not brought into use at all. The plant has now been closed down completely except for routine inspection and necessary maintenance.

Rainfall. 1956 was an average year for rain although it was better distributed over the 12 months than usual, due to the heavy falls in January. All the reservoirs have been kept filled.

Pipelines. There are now six main supply lines bringing water to Nairobi. The water from Sasumua Dam reached Nairobi through a new main some 40 miles long. There are two pipes from Kikuyu and three from Ruiru Dam. For part of the year, until the Sasumua supply was ready, the lower section of the new line was connected to Ruiru Dam and used to bring in additional water to the Kabete Treatment Works at a time when it was badly needed.

Services. 1956 saw a phenomenal increase in the number of new connections given to consumers' premises when the number installed was 1,582 as against 966 last year, thus bringing the total installation to 12,547. This increase has largely been due to flat development where, for instance, a block of eight flats is now fitted with separate metered connections.

Quality of Water. With the introduction of the Treated Water supply from Sasumua the load on the Kabete Works has been greatly reduced and the quality of water delivered has improved. The colour of the water is now measured against the Hazen Colour Scale and it is consistently below 5 units (which is a very low reading) and is of excellent quality.

Some 300 samples of main water were taken for bacteriological testing. Only 16 of these failed to reach the standard of "highly satisfactory" and each of these on subsequent sampling reached this standard. No poor samples have been found since August.

Delivery and Consumption. The total quality of water treated and delivered into Council's mains during 1956 was 2,239 million gallons, or an overall average of 6.14 million gallons per day.

The City's total population is estimated at 210,000 and on this basis the average consumption per head of population had risen to 31.8 gallons by the end of the year.

The average for 1956 was 29.3 gallons per head.

Supply and Demand. Early in the year the 24" pipeline from Githunguri was connected temporarily to Ruiru Dam to augment the supply to Kabete. This was at a time when the delivery of the other three lines was reduced due to the large draw-down of the dam level. The supply was thus maintained, and was in fact increased slightly by the careful overloading of the Kabete Filter Plant. The dam level recovered well with the January and April rains to overflow in May, and thereafter the supply was governed solely by the capacity of the Treatment Plant. In July, after changing over

connections, the new 6 million gallon reservoirs were brought into use followed by the Sasumua Supply of 4 million gallons of treated water a day.

New Works. The main contracts for the Chania/Sasumua Scheme 1st Phase were all completed during the year and the scheme was put into operation during July. With tests and sterilising of the mains complete the new supply was passed into Council's mains on the 25th July, 1956. The official opening ceremony was performed by the Mayor, Alderman I. Somen, M.B.E., on the 22nd September, 1956. All remaining works of finishing off and tidying up of the site are being done by the Dam Superintendent with a resident labour force and by contractors.

The scheme to bring water from the Kabete Works through the town to the Eastlands area is well advanced. Phase 1 (from Kabete to Salisbury Road) was already complete and Phase 11 (from Salisbury Road to Limuru Road) was complete by the end of 1956. A contract for the construction of Phase III (from Limuru Road to Pumwani) is let and the design for Phase IV (Pumwani to Ofafa) is now in hand.

The output of the Annual Mainlaying contract has not been as great as hoped and the amount of new mains laid was only some 10 miles — a drop of 20% on the previous year's figures. The mains were mostly 3″, 4″ and 6″ diameter, but did also include nearly two miles of the 18″ main for the Eastlands Trunk mentioned above.

Public Cleansing. This service, taken over in 1954, has continued to work under difficulties. It is hoped that 1957 will see the provision of the facilities necessary for effecting improvements in the services offered.

Changing from day to night clearance of bucket latrines in the African estates was effected on the 15th August, 1956, but while the change was warranted, the complete sewering of the estates due to start in 1957 is considered the only satisfactory answer to the problem.

The following is a table of operations carried out during the year. The figures should be regarded as approximate.

(a) Refuse Removal			
Total daily collections	... ...	tons	53,671
Special removals	... ...	loads	415
Junk and refuse (street sweepings incl.)	...	loads	5,008
Derelict vehicle bodies cleared	... ...	number	14
Carcase collection	... ...	number	294
Street washer	... ...	loads	3,322
(b) Exhauster Removals			
Conservancy tanks	... ...	loads	16,738
Waste water pits	... ...	loads	10,249
Septic tanks	... ...	loads	1,499
(c) Bucket Service			
Conservancy lorries	... ...	loads	2,796
Small trailers (incl. Army)	... ...	loads	821
(d) Sale of Compost	... ...	tons	1,847
(e) Choke Clearing			
African Estates	... ...	number	690
Other areas	... ...	number	506
(f) Drain clearing	... ...	man days	3,710
(g) Grass Cutting	... ...	man days	1,494

Buildings Passed Out and Occupation Certificates Issued during 1956

	European	Asian
New Dwellings	204	105
New Flats	216 (36 blocks)	640 (133 blocks)
Additions to Dwellings and flats	84	110
Commercial Premises and additions	16	85
Industrial Premises and additions	71	62
Public Buildings and additions	22	11
Employers' African Housing	18	20
	631	1,033

	1956	1955
Occupation Certificates Issued :	1,664	915

Makadara African Housing

	Type of Dwelling		
	(a)	(b)	(c)
	Stone Houses	Mud & Wattle	Shops & Hotels
Plots allocated and plans issued	40	72	1
Buildings commenced but not completed	16	82	2
Buildings completed	10	58	8

EUROPEAN CHILD WELFARE

The primary characteristic of healthy childhood is growth, and the European Child Welfare Department is a healthy eight-year-old following the approved pattern — expanding somewhere and somehow all the time and growing out of almost everything. Though growth was phenomenal in 1955, attendances rising by 70% within the single year, there was a further increase during 1956 as the statistical record reveals. Each succeeding year demonstrates yet again how great is the need and how constant the demand for the services we are able to provide.

STAFF.

Dr. Philippa Gaffikin continued throughout the year as Medical Officer in Charge, and also exercised general supervision over the two Day Nurseries and the health of the children attending them.

Mrs. Elizabeth Sullivan was the sole Health Visitor during January, then left for England on well-earned long leave. Mrs. Marion Humphreys, filled the vacancy most capably from February to mid-June, when she left to take up an appointment as School Matron. Mrs. Margaret Dempster was appointed as locum from 1st June, to permit of overlapping and a direct take-over, and carried on the work single-handed until the end of August when Mrs. Sullivan returned. As far back as the end of 1954 the increased activities of both clinics made the provision of extra staff not only desirable, but essential. Our pleas at last prevailed, and we were able to retain Mrs. Dempster as well as Mrs. Sullivan for the remaining four months of the year. This staff establishment is to be made permanent in 1957.

BUILDINGS

Parklands Clinic. For the first eight months of the year sessions for the Parklands area were held in the Ngara Clinic building of the Indian Maternity and Child Welfare Department, as the new Parklands Clinic was still unfinished. The construction of the latter was distressingly slow, and although the builders moved out in June and it was allegedly ready there was so much still incomplete that the first session in the new premises could not be held until the first week of September. Even then, much remained to be done — indeed at the end of the year the seating remained unpadded, unupholstered and deplorably hard. However, the building itself is very satisfactory, the layout has proved in practice all that was hoped for the design on paper, and the Parks Department have "done us proud" in the garden.

Woodley Clinic. The time has come to talk seriously of increased clinic space. For the first time, attendances at Woodley Clinic this year exceeded those at Parklands, and congestion, especially in the Waiting Room reached choking point. In fact, people were waiting in the drive to get into the hall where they could wait to enter the Waiting Room! The available alternatives are (1) to build out into the drive in the line of the existing two rooms, which would mean disrupting the Nursery both literally and in its organisation and would provide only a moderate increase in space for a fairly high cost; or (2) to build ab initio, on the pattern of Parklands, at slightly higher total cost but providing much better accommodation. The snag attached to the second alternative is a further year's delay, but after discussion and much heart searching it was agreed that the Department and its long-suffering public (not to mention the Nursery) would endure the present congestion for one more year on the clear understanding that Plan Two would be carried out in 1958.

CLINIC ACTIVITIES

The time-pattern of clinic sessions remained fluid for several years, while growing experience indicated how best to mould it to the needs of the public. Towards the end of 1954 it became clear that the arrangement then in force was as good as could be contrived, and it has been maintained since that date. Two sessions per week were held at each clinic, the Medical Officer being present at one session in each area. From the appointment of a second Health Visitor in September the city was divided into two sectors, each under the particular care of one Health Visitor who thereafter concentrated her visiting in her own area. Each Health Visitor also acted as Advisor during the clinic sessions of her own district, in that way continuing close personal contact with the mothers whom she visited in their homes, while the other Health Visitor dealt with weighing, inoculations and record-keeping.

Attendances at clinics again showed an increase over the preceding year, and that despite the handicaps suffered by the Parklands sessions. For the first eight months of the year these had to be held in the Asian Clinic at Ngara. Although this building is modern and pleasant, and the facilities were as good as those provided by the new Parklands and far better than the makeshift arrangements in the Nursery, it was apparent that quite a number of mothers were reluctant to attend there — "I'll wait till you're in the new building" was a remark heard all too often. Once the new building was open attendances certainly rose like a tide and remained high to the end of the year; but it was not enough to compensate for poor levels in the first eight months. Attendances at Woodley showed an increase which was absolute as well as relative to Parklands. It was particularly satisfying to note a marked rise

EUROPEAN CHILD WELFARE

Parklands Clinic
Opened September 1st, 1956

in the new registrations of infants in this area, 176 compared to 112 in the previous year. The building development in the Bernhard Road and St. Austin's Road areas has swung the balance of younger households back towards this side of Nairobi, and redressed the former overweighting of Parklands which was due to young families predominating in Marlborough Estate and Spring Valley.

Supervision of the 1 — 6 years age group continued to receive a high priority, and with marked success as attested by 450 new registrations.

One significant gap in toddler care gave rise to anxiety, namely those who spend all the hours of the working day in Nursery or Creche while both parents are at their places of employment. These children are consequently never in their own homes during the hours available for home visiting. It is just these toddlers who are unlikely to be brought to the clinics since the parents' days are already very full; for the same reason their home care may be less than adequate through the mother being rushed and weary, and it is a matter of serious concern to this Department that a way may be found for their health to be looked after instead of overlooked.

Parallel and interconnected with this problem was the uneasiness aroused by the increase in "baby-minding." The unending rise in the cost of everything drove more and more mothers into paid employment — indeed, without two breadwinners it was almost impossible for many families to make ends meet, let alone provide for the future — and the demand for safe harbourage for the children, to enable the mother to be out of her home, elicited a brisk response in the form of such offers as these from the "Personal" column of the East African Standard :—

'Children's creche. Two experienced fully trained S.R.N.'s in charge. Inquiries to . . . .'

'Mother able to look after young babies during business hours. Phone . . . .'

'Nursery now accepts babies from six weeks old. Entirely European supervision. Telephone . . . .'

'European lady cares for babies and young children daily and during school holidays. Phone . . . . or apply Voucher . . . .'

'Vacancies now exist in K . . . . for five children age two — five. Conscientious motherly supervision. Lovely garden. Terms moderate. Phone, mornings . . . .'

These five, selected at random, are representative of many more. Doubtless in most cases the people offering their services provide admirable facilities, and were actuated by humanitarian motives as well as the ordinary and reasonable urge to earn money. But financial stringency operates in most households nowadays, and might induce less suitable people to consider the rewards but not the responsibilities of caring for small children; while those well fitted for the occupation might attempt too much, take on the care of too many — indeed the best types, public-spirited women anxious not to let a child remain ill-cared-for would be very likely to accept too many for that very reason.

"Baby-minding" is controlled in England by careful legislation designed first to protect the children whose wellbeing might be jeopardised and secondly to protect the conscientious "minder" from conscienceless competition. Without the least wish to hamper these hardworking people who provide a valuable service, it is imperative that some similar control should be instituted here, something after the lines indicated below :—

1. Existing and prospective child-minders must apply to have their names and particulars recorded in a register to be maintained by the Medical Officer of Health. This applies to all those who undertake the care of children, irrespective of the number of children concerned and includes Nursery Schools which are or may be registered with the Education Department.

2. Premises intended to be used for child-care must be inspected by a member of the Medical Officer of Health's staff, and a schedule of minimum equipment and facilities (i.e. floor space, garden area, washing and lavatory accommodation in proportion to the children to be admitted) will be provided and must be complied with.

3. The ratio of children (a) under two
(b) over two

permitted per adult (i) European, qualified;
(ii) European unqualified;
(iii) Seychelloise
(iv) African (ayah)

will be defined for each case, and the number allowed must not be exceeded.

4. A register of the children, giving surname and first name must be kept, must be checked daily, and each attendance/absence recorded.

5. The Medical Officer of Health and his authorised agents (i.e. the Medical Officer and Health Visitors of the European child Welfare Department) must be permitted access to the children at all reasonable times.

6. Where food is to be provided for children, sample menus must be submitted to the Medical Officer of Health, the kitchen and any rooms used for storage or preparation of food must be inspected and approved, and a periodic check of the food given will be made by the Medical Officer of Health's staff.

None of this is intended as "nosiness" or unwarrantable interference; it is wholly an effort to prevent a potential and largely inadvertent threat to infant and especially toddler welfare. The children concerned, some babies and many toddlers, are precisely the age group for whose care the European Child Welfare service exists, and this Department is well placed to tackle this among the many problems confronting it. In doing so, it should also be possible to locate and supervise the children never seen at home, through the Health Visitor having access to them under section 5.

Controls should be initiated now, to forestall possible evil. Such control would operate to the benefit of all concerned in providing **good** child-care since there will automatically be created a register of satisfactory minders to which parents wishing to place a child may be referred. The conscientious care given by registered minders would be infinitely preferable to leaving children casually with ayahs and nannies — a practice wholly to be deplored — and the supply of plentiful, good and well-regulated "minding" is a service this Department would be happy to promote.

HOME VISITING

Primary visits to newborn infants mainly in hospital, but occasionally at home, were carried out with such thoroughness throughout the year that no new baby whose existence was known to the Department was left unvisited. In a few cases further contact was lost as the mother did not wish to accept the facilities offered, but the vast majority of mothers were delighted to know of the clinic services, accepted the Health Visitor's guidance and in the words of a Health Visitor herself "I am glad to report that I was made most welcome in every home I visited."

Apart from visits by appointment to both infants and toddlers, the increase in staff in the later part of the year made it possible to intensify the programme of door-to-door visiting by districts which is so valuable for locating children who may be in substandard condition. Although the European Child Welfare service has been

in operation for over eight years, it was found that there were still families — and by no means only newcomers — unaware of its existence. Such families were in many instances greatly in need of guidance in child health and management, and were genuinely glad of help. Their attitude had been one of resigned acceptance that small children should be howling little horrors, not realising that modern feeding and up-to-date methods could turn them in a few weeks into charming little cuddles!

CONCLUSIONS

The most important trend observed during 1956 has already been stressed — the sharp rise in extra-domiciliary employment of married women. It was evident throughout the year that greater economic stringency, occurring pari passu with lessening of any threat to a child's bodily safety, was bringing many more mothers out of the home and into paid employment. Up to the end of 1955 the risk in leaving children unguarded outweighed all other factors, but in the course of 1956 public security was restored in all but forest areas to the pre-Emergency level, the cost of living rose still further, and the outward pull became the stronger. It is both impertinent and futile to condemn these mothers, indeed in many cases they made a real sacrifice of personal inclination in an effort to improve their family circumstances. It better becomes us to consider how we can help.

The staff of the European Child Welfare Department paid particular attention to all children left in the care of ayahs and Seychelloise nannies, and reported favourably upon their physical condition, nutrition and cleanliness. But "man does not live by bread alone" and the older pre-school children in such cimcumstances can suffer gravely from mental malnutrition. They lack that unformulated but essential pre-school "education" which is acquired imperceptibly through play and activities under European guidance in a Nursery or Creche. They may even suffer mental toxaemia when the enquiring young mind propounds questions that demand a rational answer, but received a response stemming from tribal beliefs or ignorance and superstition.

The gainful employment of mothers outside the home is a world trend, not peculiar to Kenya and not likely to be reversed in present world circumstances. The care of pre-school children, whether in smaller or larger units, must be so contrived and controlled that the children gain rather than lose from the altered social customs.

STATISTICAL RECORD

Attendances

	Parklands	Woodley	Total
0 — 1 year	1,815	1,860	3,675
1 — 6 years	1,274	1,235	2,509

New Registrations

0 — 1 year	207	176	383
1 — 6 years	233	217	450

Immunisations

Vaccination	323	286	609
Diphtheria	34	30	64
Whooping-cough	19	26	54
Diphtheria/whooping-cough ...	412	430	842
T.A.B.	55	64	119

Home Visits

Hospital	First visit – home	Revisit	Total
620	899	3,502	5,021

Comparative figures — 5 year period

	1952	1953	1954	1955	1956
Attendance for advice, etc. ...	3,971	3,848	3,722	5,990	6,184
Vaccination	257	307	287	428	609
Diphtheria	405	487	122	172	64
Whooping-cough	339	523	9	17	45
Diphtheria/whooping-cough ...	—	—	219	548	842
T.A.B.	141	428	74	336	119
Totals	5,113	5,593	4,433	7,491	7,863

DAY NURSERIES

Parklands Day Nursery

1956 has been the most difficult year since the Nursery opened in 1948. The extensions to the Nursery, begun in November, 1955, continued right up to the end of June, 1956. The builders fenced off at least one third of the playing area and then in early April the Parks Department decided to plant a second third with grass which made it useless for playing purposes for the rest of the year.

In addition, illness was continuously present amongst the staff. Together with transfers, these difficulties meant extra work and strain for the staff on duty. Despite all this, however, the Nursery flourished and kept up its high standard.

The Matron's cottage was completed by April. The conversion of the old flat into a kitchen, and extensions to the dining room were then started. This meant further upheaval as the children had to be fed in the banda. Work on the extension to the Nursery was not completed until the 23rd June (some weeks overdue). This delay caused great inconvenience as the extra 30 children were admitted on 1st June.

Mrs. Dickson went on long leave in April. Unfortunately on her return in October her husband was transferred to Dar es Salaam.

The Annual Sports Day was held in June. Races were entered into with enthusiasm from 2 years old, " old " girls and boys, parents and staff. Tea was enjoyed by all.

Parents and friends gave their usual support to the Christmas Concert. A Nativity Tableau, depicting the peoples of the world was produced by Mrs. Dennison and Mrs. Bolden. The pantomime " Snowwhite and the Seven Dwarfs " was produced by Mrs. Ross-Whyte. The children taking part did so with enthusiasm and thoroughly enjoyed themselves. Judging by the applause, so did the audience. The usual excellent tea dispensed by the staff was the close of a very pleasant afternoon. As in 1955, a small charge was made and several items were donated and raffled. This realised the magnificent sum of £100 which was divided equally between St. Nicholas' School for Backward Children and the Hungarian Relief Fund.

The Christmas Party was the final event of the year complete with Father Christmas and Punch and July show. Tea was served outside to parents and children.

We had a chickenpox epidemic in May, otherwise there was no break in attendance through illness.

The total number of infectious diseases notified was :— chickenpox 76; German measles 9; mumps 2 and measles 1.

Woodley Day Nursery

The year 1956 started off rather badly with only 63 children on the register. Mrs. Thornton, Matron, left in March and Mrs. Daley took over as Acting Matron, being appointed Matron on 1st August.

After much hard work and re-organisation the number of children on the books began slowly to increase and by December the number of permanent children was 100.

One epidemic of measles occurred which was of a severe type and practically every child in the Nursery contracted it.

Since August the children have been divided into age groups of under 3, 3—4, 4—5 and over 5 years. Each section has 2¼ hours of concentrated lessons each morning, varying from learning through play to elementary reading and arithmetic, based on the new methods of teaching. All the children look forward each day to their lesson times, and then enjoy much more their free play period. Parents, too, are much happier now their children are being encouraged to make full use of their hours in the Nursery.

Woodley Nursery's first Sports Day was held on June 16th. Sir Richard and Lady Woodley attended and Lady Woodley kindly presented the prizes to the children.

The Christmas party was held in December. The children sang carols around the Xmas Tree for their parents. The Mayor honoured us with his presence, and tea and a filmshow were very much enjoyed by all.

The staff have worked well, but suffered many periods of sickness.

Highridge Day Nursery

This Nursery now appears to be well established with 70 children attending by the end of the year.

His worship the Mayor and the Mayoress visited the children's Christmas party on the 1st December and seemed very interested in

the proceedings. They remained until the gigantic cracker containing all the toys had been pulled.

Colds and coughs and influenza were persistent throughout the year. There were also several cases of tonsillitis and in September four children had diarrhoea and vomiting. Epidemics of measles and chickenpox broke out in October and four children remained away on account of infection. Most of the children had returned by November and this month the attendance was exceptional. The total number of infectious diseases notified was — measles 25; German measles 2; mumps 4; chickenpox 8 and whooping-cough 1. Two cases of malaria were also reported.

In June the sandpit was constructed and the drive repaired.

In spite of repeated attention, there are still many stubborn leaks in the building. Two bad cracks in the children's cloakrooms were inspected in February.

Two very unsatisfactory drains have given considerable trouble and the pipes of one were replaced in June.

The problem of African staff has considerably decreased owing to the easing of Emergency conditions. Wages appeared adequate and there was only once change.

Day Nursery Attendances

	Parklands		Woodley		Highridge	
	1955	1956	1955	1956	1955	1956
Regular full day ...	15,903	21,234	21,451	18,925	6,363	7,819
Regular mornings ...	7,595	9,621	2,717	3,565	4,839	7,060
Casual full day ...	953	533	76	640	28	—
Casual half day ...	755	458	55	229	34	14

ASIAN MATERNITY AND CHILD WELFARE

In every country in the world the growth of urban civilisation has been followed by a growing awareness of the need for positive health, for measures to prevent illness rather than a panic-stricken search for aid when illness has already struck. High in priority comes the care of the newborn, and linked with it the care of their mothers on whom in every sense their lives depend.

A measure of the success attending these efforts is the infant mortality rate, the number of infants dying less than a year old in proportion to every thousand born alive. Among the Asian population of Nairobi this figure has shown a dramatic decline, from 509 in 1935 to 48 in 1955; but it is the general experience in Child Health services that as the rate falls so also does the speed of decline. Far more effort is required to bring about a fall from 50 to 40 than from 500 to 400. The crux of the problem is neonatal mortality, the infant deaths at less than one month of age, and records for the past few years reveal that Nairobi has entered this doldrum zone where progress is slow or non-existent and every advance is hardly won.

Nevertheless, 1956 showed a further fall in the infant mortality rate, the figure for the year being 47 per thousand compared with 48 last year, and in every respect of maternity and child welfare the year was one of vigorous endeavour eliciting a real response — a pleasant reward for hard work — as the statistical record reveals.

STAFF

Dr. Philippa Gaffikin continued throughout the year as full-time Medical Officer in Charge.

Dr. Ruth Hume held the part-time appointment of Assistant Medical Officer from January to May, when she transferred back to African Maternity and Child Welfare. She was succeeded by Dr. Ellen Shirley, who was appointed on 1st May and continued throughout the remainder of the year.

Mrs. Margaret Arthur remained through the year as Supervisor of the Department and also of midwives and dais — duties which may justly be described as two jobs plus. The appointment of an Assistant Supervisor who could devote her whole time to the midwives and dais is a matter of urgency and would be immensely rewarding.

The establishment of Health Visitors for 1956 was increased by two over the previous year to a total of 10, and for the first time in many years the staff was up to establishment for a good part of the year. This made possible a considerable extension of Clinic activities, especially in the field of home visiting, and the result is reflected in the increased attendances. Within this single year the total rose from 26,072 to 32,720.

The Health Visitor posts were filled as under :—

Mrs. Tyagi; Mrs. Nayer; Mrs. Safri; Mrs. Daya; Mrs. Sandhu; Mrs. Saleem (formerly Miss Khursheed Ramzan); Miss da Cruz — during January; Mrs. Trilochan Singh — from 1st February; Miss Gulshan Ahamed — from 1st February; Miss Shirin Ahamed — from 10th February; Mrs. Gurcharan Singh — from 1st August.

Mrs. R. Pachecos was on long leave until the end of February and thereafter on unpaid leave until 10th November. She spent the leave period at the Simpson Memorial Maternity Hospital, Edinburgh Royal Infirmary, where she obtained the qualification of State Certified Midwife.

The post of Clerk/Interpreter was filled throughout the year by Miss Davinder Kaur Sehmi.

BUILDINGS

Ngara Clinic. The reconstruction of this building in 1954 was intended to provide satisfactory accommodation for the services of the Ngara area, and this intention was fully accomplished. What could not be foreseen was the continuing over-use brought about by running the services for the Pangani and Parklands areas in the same building during the ensuing three years. The consequent overcrowding is a severe strain on the fabric of building and furnishing and on the stamina of the staff, and wear and tear has become apparent in all three.

Victoria Street Clinic. This well planned and well built clinic continued to give excellent service, and was the venue of clinic activities on an increasing scale without evident deterioration. Redecoration in pastel shades of washable plastic emulsion made the premises even more attractive, in itself a factor of psychological value in building up a subconscious demand for better domestic standards.

Eastleigh Clinic. Redecoration in pastel plastics and the growth of a very attractive garden, made this clinic an oasis of pleasant living in a desert of squalor.

Sandiford Road Clinic. This small building continued fully adequate for its area — an Asian enclave between African housing and industrial plots — as it has proved impossible to encourage

attendance there from districts further afield. Families living beyond the immediate confines of the Sandiford Road area preferred to travel by 'bus to Victoria Street rather than on foot to Sandiford Road.

Pangani/Forthall Road. The provision of a building for this "ghost" clinic was again the subject of muddle and delay, and once again the year ended with nothing done.

Parklands. The need for a clinic in this area became more acute with every passing day. The population increased still further, overcrowding was yet more rife, and the desire of the people to obtain clinic services was envinced by their efforts to attend at Ngara. A site for a clinic has been reserved, the staff are already at work in the area despite all difficulties — it remains only for money to be allocated to erect the building.

Nairobi South. Detailed plans for this building were discussed and agreed with the architects of E.A.R. & H. during 1955, and in July 1956 an enquiry regarding a provisional completion date elicited the reply that staff should be held available for December 1956 or at latest January 1957. Consequently the reply to a further enquiry in November 1956 was received with horrified surprise — that the building had not yet been begun, had not even been financed, and **might** be built some time in 1957! The population of the area increased very rapidly during the year, being largely composed of younger couples with rising families whose need for a clinic is considerable.

CLINIC ACTIVITIES

Antenatal Welfare. Antenatal sessions were held weekly throughout the year for each district, those for Ngara, Parklands and the Pangani/Forthall Road areas in the Ngara building and for Eastleigh, Victoria Street and Sandiford areas in their respective clinics. Attendance figures again rose, both in respect of new registrations and of total attendances. A feature of note was a larger number of mothers attending much earlier in pregnancy, at the second month rather than the fourth or fifth — an admirable tendency enabling deviations from normal to be noted earlier and with better prospects of successful treatment. It also meant a larger aggregate attendance, but the added burden on clinic staff was willingly accepted for the better results.

Maternal health levels on first attendance were about the same as in the previous year — a fair general condition, the nutrition state varying from good (a few) to fair (the majority) or poor, and anaemia almost universal. Even allowing for the physiological anaemia of haemodilution, the haemoglobin level was almost always around two-thirds of normal. On enquiry these women denied feeling ill or unduly tired. This state is apparently what they have always known

and consider satisfactory. In fact it is far from satisfactory, and the conclusion is inescapable that most Asian women spend their lives in a condition of sub-health.

There were four maternal deaths during the year, occasioned as follows :—

1. A Dai's case, para 11, the patient refused to attend a clinic and had no antenatal care. Death was due to a postpartum haemorrhage.
2. A patient from up-country had no antenatal care for the first 7 months of pregnancy. She then consulted a doctor in Nairobi. She died after a severe postpartum haemorrhage.
3. A patient delivered in the Indian Maternity Hospital by Caesarian section died on the 9th day after operation from pulmonary embolism.
4. A woman was admitted to the Indian Maternity Hospital with severe anaemia and a history of antepartum haemorrhage. She had refused antenatal care. She died in hospital from cardiac failure.

Of these cases, the first came to a tragic end through her own obstinacy, and the third was an unforeseeable accident to which no blame can be attached. There is insufficient evidence in the second case regarding antenatal treatment during the two months that she was under medical care, but anaemia was in all likelihood a contributory factor. The fourth case, as the first, died as a result of her own attitude.

The total of live and stillbirths for the year was 3,928, giving a maternal mortality rate of 1.01 per thousand births.

Consultations and Family Planning. A routine consultation session was held at Victoria Street clinic weekly during the first 8 months of the year. It became steadily more evident that the facility was no longer essential for the well-being of Asian mothers, in view of the number of Asian women doctors now available to whom gynecological cases could be referred for examination. Accordingly, when pressure of work in other fields made its continuance a matter of difficulty and a sacrifice of doctor-hours better used elsewhere, it was discontinued.

Instruction in methods of family planning has been available to Asian women at Victoria Street clinic each week for some 5 years, and there has been a slow but definite increase in the number of families where parenthood is planned rather than haphazard. The number of such families is considerably in excess of the total of women who have attended the Contraception Clinic. It is clear that the idea of spaced pregnancies spreads below the surface like an underground fire, and the necessary practical advice and equipment

is obtained through the family physician, a midwife, or the feminine staff of chemists. A commercial Contraception Clinic was operated for several months in premises in Victoria Street, but despite propaganda and the co-operation of this department it was not well patronised and finally closed.

In the latter part of the year Miss Gates of the National Committee on Maternal Health of New York visited the city on a publicity tour. Under the stimulus of her enthusiasm a Family Planning Association was founded in Nairobi. Subsequently progress slowed considerably, but it is hoped that the new Association may be able to focus favourable public attention on this most important aspect of family life.

Child Welfare. Child Welfare sessions were conducted weekly for each area throughout the year. Ngara and Parklands (jointly), Victoria Street and Eastleigh required two sessions per week, Pangani/Forthall Road and Sandiford were adequately served by one. Those of Ngara/Parklands and Pangani were held of necessity in Ngara building and the former especially were painfully overcrowded.

Attendances at all ages rose during the year, the total 16,639 being an increase of 2,000 over 1955. New registrations both of under and over 1 year of age showed a satisfying increase. The infant new registrations totalling 2,266 represented 60% of the notified births. As the latter figure made no allowance for non-residence, the percentage of resident infants attending at the clinics would be considerably higher. The rise in new registrations in the 1—5 year group reflected the improved staff position. During 1956 it was possible to undertake systematic visiting of toddlers and 64% more toddlers were registered than in the previous year.

Once past the noenatal period, the health and progress of clinic babies were very satisfactory. Knowledge of modern methods of infant feeding is at last percolating by seepage instead of only by direct pumping; the trickle is nowhere near becoming a flood, but its mere appearance is encouraging!

Neonatal mortality remains the first and greatest problem in child welfare. 113 of the 180 infant deaths occurred in the first month of life, 104 of them within hours or days of birth and attributable to prematurity and/or hazards attendant on delivery. The problem presented by this group is discussed at length later in this report. Among the remaining 9 neonatal and 67 infant deaths, by far the greatest individual causes were pneumonia and gastro-enteritis, which accounted for 31 and 19 respectively. In this anti-biotic age, deaths from pneumonia should be few and far between. That they are neither can be traced to three factors — delay in starting treatment, inadequate treatment, and the development in the Asian community of bacterial strains resistant to antibiotics.

The health of toddlers was satisfactory on the whole, though a considerable number tended to lose in weight and condition towards the second birthday. This could be ascribed to (a) refusal of food as a means of gaining attention, not countered by parental discipline and reinforced by greater will-power as the child grew older; (b) the arrival of a new infant leaving the mother with less time for the ex-baby and tending to promote (a) as a means of recapturing attention; (c) the ordinary health hazards of exanthemata. The loss was in most cases made good within a few months or a year.

Clinic parties were held for each area at the end of November, and once again sincere thanks go out to all the generous friends who gave in cash and kind the means to provide party fare and gifts for all and prizes for the most regular attenders.

Immunisations. Inoculation sessions were held on Saturday mornings at every clinic throughout the year, and the uniformly fixed day became widely known and was of value in increasing attendances. Protection against smallpox, the typhoid group, diphtheria and whooping cough was provided and a total attendance of 8,587 was 2½ times that for 1955. The increase was predominately in vaccinations against smallpox, consequent on a minor outbreak on the fringes of Eastleigh.

Home Visiting. The systematic organisation of visiting programmes by districts, coupled with the improved staff position, brought about a notable rise in the total of visits paid during the year. Supervision of child health at all ages was consequently much more regular and where defects had been noted and treatment initiated it was possible to maintain a close "follow-up." Both parents and staff expressed pleasure at the improved situation — the staff experienced greater professional interest in being able to watch the results of their intervention and to observe the progress achieved, while the mothers expressed warm appreciation of the constant care shown towards their children's wellbeing.

Health Education. Apart from the direct teaching which was given at every home visit, full use was made of group and indirect methods of imparting health knowledge. Visual aids were freely used, especially in the form of models. These were displayed in glass-fronted cabinets, as experience has shown that no amount of "don't touch" will keep small fingers away from miniature houses and furniture. The display at each clinic was changed monthly, that interval having proved the happy mean between "never had a proper look" and "seen that one already," and the themes illustrated ranged over a wide field of personal and domestic hygiene, diet, antenatal and infant welfare and the care of children at all ages.

Antenatal and postnatal exercises were taught and demonstrated at all clinics, though attendances were erratic. This was not wholly

due to apathy, as many of the mothers already knew the exercises, had used them in successive pregnancies and required no further instruction.

A competition for hand-made clothing attracted considerably more attention than last year, and the standard of the winning entries was very high. Mrs. Pickering, a judge of the handwork competition at the Royal Show, was kind enough to undertake the judging and remarked of the winner "as good as anything entered at the Royal Show and in some points even better." The first three entries received prizes and certificates and a fourth entry of almost equal excellence received a "Highly Commended" certificate.

TRAINING

Health Visitors. The fourth course of training leading to the Diploma in Health Visiting (Kenya) was begun at the end of February, 1956. Six candidates were accepted initially, of whom one withdrew without explanation at the end of the first term. The training of another was discontinued at the end of the second term as her examination results showed her educational level to be quite inadequate. A third who had shown herself to be an excellent student had to be withdrawn on medical grounds, a decision reached with very real reluctance and regret. An additional candidate came forward in June, and was accepted rather charily on probation but "made the grade." Altogether four students completed the year's work.

The part-term from mid-February to Easter, and the May term, were devoted to systematic lectures in anatomy and physiology, midwifery, insect-borne diseases and personal and domestic hygiene; lectures in the September term comprised anatomy and physiology, midwifery, mothercraft, and insect-borne diseases. Tutorials in all these subjects were given during all three terms, together with practical instruction in clinic organisation and routine, records and home visiting. Practical tuition in the conduct of antenatal, postnatal and child welfare sessions was given by the Medical Officers at clinic sessions throughout the year. Written examinations were held at the end of each term on the subjects covered by that term's work, and continuance of training was conditional on the attainment of satisfactory standards.

In the course of the year observation visits were made to :—

Elephant Soap factory;
Baring Biscuit factory;
New Stanley Hotel kitchens;
Parklands European Day Nursery;
City Council laboratory;
Inoculation Centre;
High Ridge Day Nursery;

At the last-named the students were able to spend an entire day and to appreciate the value to toddlers of Day Nursery care.

Sincere thanks are extended to all who so kindly made possible the observation visits, and to the Senior Health Inspector and his staff who gave so much in time and effort to these visits and to lecturing.

Midwives. The annual Midwives' Refresher Course was held in the fortnight beginning 7th December, and was attended by some 18 out of the 25 practising midwives. The programme consisted of lectures on subjects germane to midwifery, visits to places of professional and general interest, and an "open forum" session. The course was opened by the Deputy Mayor, Councillor Mrs. Needham-Clark, and the presentation of certificates of attendance was carried out by the Chairman of the Public Health Committee, Alderman Nathoo.

With the facilities at present available, a Refresher Course of the present type is the best that can be achieved. It falls far short of the ideal, which would comprise a period of residence in a teaching hospital. With the improvements projected at the Indian Maternity Hospital it is not beyond hope that this dream might become a practical possibility . . . . !

CO-OPERATION WITH OTHER HEALTH SERVICES

Private Practitioners. During the first eight months of the year a total of 157 patients were referred to the Consultation Clinic. This presents an average of 4.4 patients per session and underlines the conclusion that this service has ceased to be necessary.

Indian Maternity Hospital. Responsibility for the administration of the hospital remained in the hands of the autonomous Management Committee until March, while arrangements were in hand for its transfer to the Social Service League. At the end of that month control was vested in an Interim Management Committee appointed by the Social Service League pending completion of the legal transfer, and this Committee continued to function for the remainder of the year. The Social Service League expressed a wish that the Medical Officer i/c Indian Maternity and Child Welfare should continue to serve on the Management Committee, a request most willingly granted. The new Committee displayed much more vigour than the old, and in the course of the year plans were drawn, agreed and passed through the necessary Committee for (a) really satisfactory accommodation for a staff comprising Matron, Deputy Matron, Sister Tutor, Staff Nurse and 15 probationers with possible expansion to 20; and (b) conversion of the entire existing building to patient-accommodation with a total of 40 beds. At present building costs the expenditure envisaged is far from small, but before the end of the year

material progress towards raising the funds had been achieved. Meanwhile the hospital itself laboured on under the old difficulties, but with new hope.

The Indian Maternity and Child Welfare Department again lent its aid in the training of probationers. Dr. Shirley lectured on midwifery twice weekly throughout the year, once each to senior and junior groups. She reported great difficulty in getting the essential knowledge assimilated — even with extreme simplification — and ascribed it to the unduly low level of education accepted as adequate for entry as a probationer. The other side of this picture was feelingly voiced by the Matron, who described her extreme difficulty in getting any probationers at all. The latter problem is closely related to the very poor accommodation now available for probationers, and improved conditions should attract a better type of candidate. It will then be imperative to set **and maintain** a much higher minimum standard of education.

Private Maternity Homes. Five private Maternity Homes were in operation during the year, four of them conducted by midwives and one by a doctor. Routine visits to all five were made throughout the year, at approximately three month intervals, by the D.M.O.H., the Medical Officer in Charge and the Supervisor of Indian Maternity and Child Welfare, and at more frequent intervals by the Supervisor. All the Maternity Homes run by midwives were maintained at quite a satisfactory standard, the deficiencies in materials or methods were rectified with reasonable promptness when pointed out, and there was evidence of a genuine wish to co-operate.

Midwives. The Supervisor again observed that most midwives were genuinely anxious to co-operate, and again regretted the impossibility of devoting adequate time to their needs — indeed her commitments in other fields were even greater than before owing to increased clinic attendance. In particular far more time was required, but could not be allocated for teaching, since nearly all the midwives now practising were trained in the Indian Maternity Hospital where the course is conducted wholly within the hospital and there is no training in district midwifery. Their methods of practice have of necessity been developed empirically without guidance, and still leave a great deal to be desired.

Notification of births was fairly good throughout the year; record keeping was again far from satisfactory and in need of constant supervision. Much improvement is still needed in the notification of puerperal pyrexia by midwives and also by private practitioners. It should be emphasised that all pyrexia occurring in the puerperium is notifiable irrespective of cause.

The constant supervision which is required in order to maintain even a moderate standard of midwifery practice in the city, and the

problems and difficulties constantly arising in connection with midwives and their work, demonstrate yet again that there is urgent need and ample work for a whole-time Supervisor of Midwives.

Dais. Dais' classes were held whenever opportuniity offered throughout the year. One afternoon per week was devoted to receiving their (necessarily verbal) notifications of births, and the Supervisor or a senior Health Visitor was available at the same time so that they could disclose and discuss any problems.

Welfare Department. An admirable liaison was developed between the Indian Maternity and Child Welfare Department and the Welfare Officers of the Central Government, whereby problem families were jointly visited and their difficulties tackled at one and the same time from the health and welfare standpoints.

CONCLUSIONS.

Surveying the health of Asian woman and children during 1956, the panorama is golden in every sector but one — the neonatal period. The neonatal death rate was deplorable. Of 180 infants who died at under one year old, 113 died in the first month after birth.

Neonatal mortality is the hard core of infant mortality, and it is obvious that not all such deaths could be preventible — indeed there are a proportion better not prevented, those infants born so malformed or handicapped from causes beyond human control that life would be a burden and death is a blessing. But the vast majority of infant deaths are a tragic waste which could be prevented yet continues to occur, because prevention is difficult and not yet achieved. As the late King George VI remarked of tuberculosis "If it is preventible, why is it not prevented?" There is no answer to that — only a series of excuses.

In the attack on neonatal mortality the requirements are threefold and easily defined: firstly healthy mothers, protected as far as human foresight extends against preventible ills; secondly, skilled midwifery, so that the hazards of birth are mitigated by professional care alert either to carry out a midwife's duties or to recognise situations beyond a midwife's scope and summon timely aid; and thirdly, planned parenthood so that children are born by choice and not by chance, a welcome gift rather than an unsought burden. Spacing of births in a family, and their limitation to a total which strains neither the father's income nor the mother's health, is a prerequisite no less important than the other two; yet whether through prejudice, ignorance or apathy it is the factor most constantly neglected. No attack on neonatal mortality can hope to succeed unless this situation is recognised and its solution attempted. Essential to this end is a clear and vigorous propaganda campaign, founded on a definite and unchanging policy. Although facilities for education

in planned parenthood have long been available in this department, endeavours to promote the principle of spaced families have frequently been hampered by nervous apprehension (at a high level) that this or that public body/religious sect/community might disapprove. It is more than time that every level realised and admitted the truth — there is nothing so important as good health, and without good health all effort is a striving after nothing since what is achieved cannot be enjoyed. Continual childbearing nullifies at the outset all endeavour to bring better health and happier homes to Nairobi, for the home centered on an ailing wife and delicate children has scant hope of happiness.

STATISTICAL RECORD

	Ngara	Eastleigh	Victoria Street	Pangani	Sandiford Road	Total
Antenatal Welfare						
Sessions ...	51	56	52	47	52	258
Attendances ...	1,761	1,586	1,513	845	389	6,094
New registrations ...	573	464	434	299	119	1,889
Consultation/ Contraception Clinic	—	—	192	—	—	—
Child Welfare						
Sessions ...	78	97	102	60	51	388
Attendances ...	5,197	3,943	4,070	2,459	970	16,639
New registrations						
0 – 1 yr. ...	662	500	525	440	139	2,266
1 – 6 yrs. ...	415	413	364	186	96	1,474
Immunisations						
Vaccination ...	1,140	2,493	1,006	706	394	5,739
Diphtheria/ Whooping Cough ...	662	503	144	432	110	1,851
Diphtheria ...	19	9	18	—	—	46
Whooping Cough ...	1	—	—	—	—	1
T.A.B. ...	202	257	203	161	127	950
Health Education						
Attendance at classes, demonstrations, etc. ...	185	196	242	133	165	921
Home Visits						
Supervisor						102
Staff ...	9,470	7,657	9,317	7,751	4,961	39,156

Comparative Figures 5 years period

	1952	1953	1954	1955	1956
Antenatal Welfare					
Attendances ...	5,285	5,034	5,453	5,712	6,286
New Registrations ...	1,803	1,481	1,518	1,607	1,889
Child Welfare					
Attendances ...	12,513	14,403	12,686	14,738	16,639
New Registrations					
0 – 1 yr. ...	1,595	1,499	1,417	1,741	2,266
1 – 5 yrs. ..	1,486	1,467	1,152	900	1,474

Home Visits

All staff ...	11,815	12,966	17,107	21,081	39,258

Total Attendance

All ages, all clinics ...	—	25,448	22,703	26,072	32,433

Notification of Births

	Live births	Still births
Midwives	1,767	19
Dais	826	6
Indian Maternity Hospital	573	31
Ideal Nursing Home	192	6
Sunshine Nursing Home	169	3
Nairobi Nursing Home	73	3
Alice Beaton Nursing Home ...	21	1
Janet Miranda's Maternity Home ...	144	2
Mrs. Bedier	62	—
Doctors	8	—
Still births not notified	—	22
TOTAL	3,835	93

Mortality Rates

Maternal deaths	4
Maternal mortality rate (per thousand births) ...	1.01
Infant deaths (under 1 year old)	181
Infant mortality rate (per thousand live births) ...	47.1

Causes of Stillbirth

Accidental haemorrhage	5
Asphyxia	4
Anencephaly	1
Abnormal delivery	1
Eclampsia	1
Intracranial injury	2
Macerated foetus	8
Malformation	3
Postmaturity	1
Prematurity	21
Placenta praevia	2
Precipitate labour	1
Prolapsed cord	3
Prolonged labour	2
Syphilis	1
Toxaemia	12
Cause not known	35
TOTAL	103

Causes of Death — Asian Children under 5 years

	Under 1 year	1—5 years
Asphyxia	6	1
Anaemia	1	2
Abnormal delivery	1	–
Atelectasis	1	–
Bacillary dysentery	2	–
Birth injury	4	–
Brain tumour	–	1
Bronchitis	1	–
Burns	–	1
Congenital heart	2	–
Congenital obstruction	1	–
Cyanosis	1	–
Debility	2	–
Enteric colitis	1	–
Encephalitis	–	1
Foetal abnormality	4	–
Fever	1	–
Gastro-enteritis	19	2
Haemophilia	1	–
Heart failure	4	–
Intracranial haemorrhage	5	–
Jaundice	2	1
Marasmus	2	–
Meningitis	3	–
Nephritis	–	4
Pneumonia	31	3
Poisoning (kerosene)	1	–
Prematurity	81	–
Prolonged labour	1	–
Purpura	1	–
Respiratory infection	1	–
Septicaemia	1	–
TOTALS	181	16

SECTION 13

AFRICAN MATERNITY AND CHILD WELFARE

STAFF

Medical Officers

Except for periods in January, February and December, when only one and a half doctors were available because of sickness and overseas leave, two and a half doctors were on duty for the twelve clinics and the medical examinations for eight nursery schools. Dr. Davidson and Dr. Van der Werf gave very able and greatly appreciated help in a temporary capacity.

Supervisor of Health Visitors

Mrs. E. T. Dugmore stopped work in the clinics at the end of February to proceed on three months leave pending retirement. Her departure was a great loss to the department, not only because of her personal charm, but also because of the experience, vision and ability she gave to her work. All were delighted when her years of faithful and energetic services were awarded in the Queen's Birthday Honours List by the award of the M.B.E.

Mrs. N. Mitchell (neé Rasmussen) was appointed as Supervisor to replace her.

Other Staff

There were many changes amongst the health visitors and African assistants throughout the year and the work suffered because of this. The European staff were unsettled by the facts that their applications for appointment are received with some degree of indifference; they are not given a copy of the terms of service to read or any proper contract produced for both parties to sign. Another cause of discontent is that women who wish to join the establishment staff cannot do so and have to remain on temporary terms, which give no sense of security to unmarried women.

There is still a great need for more highly qualified African assistants.

REVIEW OF ACTIVITIES

General

Her Royal Highness, the Princess Margaret, visited Kaloleni Clinic on 20th October, 1956.

Another year has passed without the Engineer's Department building permanent buildings for the clinics in the newer estates and the situation was so serious in the early part of the year that clinics were opened in Mbotela and Ofafa on 1st May in rented rooms. The Railway building programme is also behind schedule, so temporary huts have been lent by the E.A.R. & H. since July 2nd to run a clinic for the mothers and children in the recently built flats in Makongeni and in the temporary quarters.

The urgent need for adequate drainage, realignment of drains, upkeep of drains and grounds, change from bucket latrines to water-borne sewerage were subject of endless reports and investigations, and this department was grateful when Mr. Kendray, Sanitary Inspector, was deputed to supervision of the health side of the African locations.

Far more could be done for the general condition of the estates if the onus of upkeep of house surrounds was handed to the tenant, and although there is some machinery for making employers responsible for the condition of their housing, its inadequacy is obvious from the shocking condition of most of the employers' housing and its grounds.

The death of a child from drowning in one of the "trial" holes at Ofafa and the condition of the unfinished housing and the whole of the grounds in Ofafa point to the need for increased supervision of works in the area.

Quoting from this department's report for 1955 :—

> "I cannot urge too strongly that the care of the grounds round the houses in all the estates in Nairobi — Government, City or privately owned, should be the tenants' responsibility, and any expenditure in fencing required would be repaid in the saving in grass cutting and sweeping and in the improved conditions."

The pilot scheme to run an antenatal and child welfare clinic for Africans living in an Asian and European housing estate was postponed until 1957.

Like mothers all the world over, the African will not trust and co-operate with the clinic staff until they really know them. The working mother and father, who cannot be contacted, is a problem which has increased enormously. To improve this situation pilot schemes for evening clinics were started at Ofafa and Bahati, but the response was disappointing and fresh angles of approach must be found for this important work.

More and more toddlers are being left by themselves during the day, or in the charge of an ayah whose age ranges from 7 — 10 years.

When fathers' meetings were held at Ofafa, Kaloleni, Bahati and Maisha, the need for parents to make adequate arrangements for their children during the day was emphasised. The working mothers tend to come from the two extremes of salary scales, i.e. the educated, who need the money to fulfil their wider tastes, and the very poor who want the money just to exist.

Miss Forrester, at the Church of the Martyrs' Community Centre in Bahati, has started classes for the juvenile ayahs to teach them simple hygiene and methods of feeding and this, together with the individual help they receive in the clinics, may improve conditions for the neglected babies and toddlers.

In all estates there are many children of 5 — 14 years who spend their days in the streets and form unruly bands with no sense of, or respect for, law and self discipline. It is hoped that compulsory juvenile education will improve this and that the adult population will be honest and not bring into Nairobi and claim as their own more and more children who really belong to other members of their family and thus sabotage the scheme at its inception.

The total number of attendances at all clinics throughout the year was 187,455.

The total number of examinations done by the medical officers was 22,822, which included 1,865 nursery school children (Railway and City schools) and 206 routine quarterly "free from infection" examinations for clinic and nursery school staffs.

The success of the clinic play hours for toddlers was illustrated by the childrens' friendliness and willingness to join in the games at the Christmas parties, which were enjoyed very much by all the clinics.

Ante Natal Clinics

The total number of new cases was 2,591, and the total attendances 7,838, i.e. 51 and 497 more than in 1955. The post natal examinations were 512, i.e. 191 more than in 1955. This increase is due probably to the increase in district midwives now operating.

Child Welfare Clinics

Infant welfare new cases were 2,572, an increase of 51 over 1955; pre-school new cases were 2,765, an increase of 357 over 1955; total attendances were 32,622, an increase of 3,639 over 1955.

Transfers to pre-school registers were 559, an improvement of 194 on 1955, and probably due to decrease in population movement within the city. Attendances at clinic milk bars numbered 30,564 for 1,970½ gallons of milk. Those attending belonged to the following groups :— weaning age to be taught to drink milk; convalescents after general illnesses; Kwashiakor and tuberculosis cases. Much

teaching has been done about the benefit to toddlers of taking fat free milk powder both as a milk drink and mixed with uji and as a powder stirred into other food. One thousand, eight hundred and forty pounds of milk powder have been sold at cost price (Sh. 1/60 per lb.) in the clinics during the year.

Dispensary Services

The total attendances were 82,432, an increase of 1,144 over 1955. Another year has passed without the plan for the multiple city dispensaries being implemented, but it is hoped that they will materialise in 1957 and allow the clinic staffs to use the hours at present spent on treating disease to teach preventive medicine.

Ambulance

On 6th December a new ambulance was allocated to this department. It was much needed as great anxiety had been caused throughout the year by the rickety and unreliable condition of the two vehicles which were available.

Home Visits

The total visits for the year were 27,183. The black spots, where members of the staff cannot go singly and happily are now few. Generally the staff are welcomed when visiting and attention is given to the teaching in the homes. It may be that contact may be made with parents who work all day by evening visiting rather than through evening clinics.

Sanitation and Housing

Mr. Kendray has helped greatly in the African estates and it appears to be due to his efforts that the collection of night soil at night has been re-introduced and that vigorous action was taken at the Sewage Works and Bahati to reduce the fly population which was such a menace in Bahati and Ofafa during the typhoid epidemic.

Mr. Savage of the African Affairs Department organised a House and Gardens Competition in Bahati, which did much to raise the general standard there.

Makongeni estate is now entirely on sewerage, except for the cottages.

Refuse disposal in many of the estates has been improved greatly by issuing individual dustbins. Flat life is not ideal for Africans because, although many of the rooms are well kept, passages and stairs being "no-man's-land," are used for throwing down rubbish and as latrines.

The estates of Bahati, Makadara and Ofafa remain black spots. The general drainage is bad, heaps of rubble litter the estates, there are no sewers and no well constructed paths or house surrounds.

Unless these problems are tackled with vigour and rapidly, the African population will have to continue to live in shameful surroundings which can only breed discontent and flies.

Teaching

In November and December, in conjunction with the African Affairs Department and Health Inspectors, a special effort was made to educate the public in the estates about the correct use of latrines and training of children. Lectures were given by African Health Inspectors to nursery school teachers on all aspects of community hygiene, e.g. care of food and water, use of latrines, the control of rats and insect pests, so that they, in turn, would be better equipped to teach.

Weekly medical lectures were given by the doctors to the clinic assistants throughout the year and well attended courses were conducted to help in the learning of Jaluo and Swahili. These classes certainly helped in contacts with the mothers.

In teaching the mothers, all clinics used group teaching in the clinic and individual instruction in the homes. Subjects included personal, household and community hygiene, ante natal care and preparation for delivery, the care of infants, the education of and diets for the toddler, with special attention to the weaning period and 1 — 2 years period.

It is still a problem to get the mothers to work towards keeping a healthy child healthy.

In spite of improved wages for some jobs, the lack of money is the chief cause of inadequate diet.

Medical Aspects

In March and April there were cases of smallpox in Pumwani and Bahati, and mass vaccinations were done. At about the same time there was also an epidemic of typhoid fever in Bahati. The medical officers running the Government Medical Department sessions for the treatment of tuberculosis in children have worked in close co-operation with the clinics, and cases discharged from hospital and referred by them have attended the city clinics for milk and cod liver oil daily and for check examination by the doctors. Throughout the year the numbers of children with primary tuberculosis attending each month has averaged 60.

Measles and whooping cough occurred throughout the year and whooping cough particularly affected many very young infants. Respiratory tract infections, more numerous in the cold wet weather, and gastro-enteritis were the main complaints. Skin and eye infections were relatively few, though some of the cases of infantile eczema were persistent and worrying.

It is still felt that a small hospital in the housing estate area for short term cases would fulfil a great need and careful consideration should be given to the possibility of building such a hospital and incorporating it in the Health Centre service.

Treatment was given to 1,001 cases of malaria and 545 cases of clinical malaria, also to 648 cases of helminthic infections. At Kaloleni clinic 2,552 treatments were given to cases of otorrhoea; an average of 33 cases attended each month. 3,695 vaccinations were done, and 4,187 T.A.B. inoculations given.

Nursery Schools

One thousand, eight hundred and sixty-five medical examinations were done during the year by doctors. The standard of cleanliness and supervision of the children in the Railway schools was very satisfactory, but disappointing in the City Council schools. The supervision in the latter seemed inadequate and in many instances, in addition to the poor general standard, little effort was made to co-operate with the medical officer by fulfilling recommendations for further investigations or treatment.

1956	Kariakor (A & B)	Muthuruwa	Kaloleni	Makongeni	Maisha	Liverpool Road †	Bahati V.	Bahati P.W.D.	P. & T.	Mbotela *	Ofafa *	TOTALS 1950	1951	1952	1953	1954	1955	1956
Ante natal																		
New cases ..	432	292	279	235	164	78	363	175	318	181	74	1,735	2,098	2,194	1,639	1,845	2,540	2,591
Births at home ..	151	110	113	109	96	33	130	39	58	26	13	382	491	803	532	432	717	878
Births in hospital ..	116	101	61	31	23	5	110	42	113	39	14	226	231	363	324	334	570	655
Total attendances ..	1,493	944	1,025	735	533	158	1,037	429	879	429	176	5,634	5,448	5,492	4,447	4,936	7,341	7,838
Infant Welfare																		
0 - 1 year New Cases ..	451	293	334	237	155	111	295	179	258	160	97	1,576	1,868	1,696	1,543	1,716	2,521	2,572
0 - 1 year Transfers to P.S. Register ..	93	61	87	66	66	6	53	44	45	15	18	343	363	429	262	249	365	559
1 - 5 years New Cases ..	313	259	317	272	169	246	260	212	221	236	260	1,831	2,283	1,753	1,259	2,318	2,408	2,765
Total attendances ..	5,896	3,524	3,509	3,084	2,942	1,294	3,804	2,594	3,080	1,285	1,610	33,798	37,673	25,908	13,626	19,722	28,983	32,622
Home Visits																		
By Health Visitors ..	1,542	795	511	566	222	247	552	368	830	262	584	5,012	4,751	3,609	576	760	3,902	6,479
By African Assistants ..	3,190	1,628	3,123	1,834	1,554	1,170	1,514	1,040	2,172	1,218	2,036	15,399	22,343	16,660	3,880	1,869	13,094	20,479
Total ..	4,732	2,423	3,634	2,400	1,776	1,417	2,066	1,408	3,002	1,480	2,620	20,411	27,094	20,269	4,456	2,638	17,086	26,958
Dispensary																		
Women — new ..	411	346	284	214	172	56	355	214	253	103	63	6,499	2,293	2,276	1,840	2,263	2,385	2,471
Women — repeat ..	676	735	328	358	551	83	945	553	444	107	132	—	13,938	14,132	5,378	6,531	4,539	4,912
Children — new ..	1,981	1,460	1,495	1,367	1,333	464	1,602	1,122	1,008	531	638	36,763	8,341	8,457	6,592	8,776	11,630	13,001
Children — repeat ..	6,615	4,861	5,111	5,625	8,330	2,289	5,884	6,290	3,300	1,621	2,657	—	53,702	52,829	32,226	58,555	54,317	52,583
Attendances for tonics ..	1,559	782	674	910	1,421	325	1,053	1,223	564	319	635	—	—	2,716	5,270	8,506	8,417	9,465
Total attendances ..	11,242	8,184	7,892	8,474	11,807	3,217	9,839	9,402	5,569	2,681	4,125	43,262	78,274	80,410	51,306	84,631	81,288	82,432

* Mbotela and * Ofafa were opened on 1st May, 1956.
† Liverpool Road was opened on 2nd July, 1956.

Laboratory Tests

Khan specimens	2,365	positive	161
Cervical smears for G.C.	1,641	positive	6
Blood slides for malaria	9,980	positive	1,288
Stools for helminths	3,561	positive	1,009

Dr. Hunter, the Nairobi City Council venereologist, gave a lecture demonstration on the value of, and method of, taking cervical smears for gonorrhoeal infection and thereafter this was done in all ante natal cases.

District Midwives

Mrs. C. M. Davis has been Supervisor throughout the year, and has worked very hard to rebuild this service at a high standard of efficiency.

It is an urgent need that legislation should come into effect to control this important public service.

Kaloleni

Mrs. Delina Haron all the year.

To African Maternity Hospital
3 mothers, delayed labour.
1 premature, 7 months.
1 eclampsia.
1 B.B.A. infant (died in African Maternity Hospital).
Mother in King George VI Hospital, cirrhosis of liver.

Makongeni, Maisha and Liverpool Road

Mrs. Drucilla Agot. 1st January to 1st July.
Mrs. Elizabeth Njeri. 1st July to 31st December.

Districts :—

Makongeni	62
Maisha	24
Liverpool Road	40

To African Maternity Hospital
1 B.B.A. with A.M.H. ante natal card.
1 B.B.A. and mother had P.P.H.
1 delayed labour.
1 premature, 7 months.
1 case of twins.
1 pyrexia on 6th day.

Abnormal and dead
1 B.B.A. and S.B.

Abnormal and alive
1 B.B.A. with breech.

Muthuruwa

Mrs. Elizabeth Njeri. 1st January — 30th June.
Mrs. Susan Karanja. 1st July — 31st July.
Mrs. Rose Njeri. from 7th November — 31st December.
To African Maternity Hospital

1 retained placenta.
1 delivered by the roadside.

1 P.P.H.

1 breech with extended arm.
1 Blue Baby.

Bahati

Mrs. Naomi Phineas from 1st June — 31st December.
To African Maternity Hospital

3 mothers, delayed labour, 1 S.B.
2 premature, 7 months.
1 forceps delivery.
1 P.P.H., scalp child abnormal.
1 shoulder presentation.
1 B.B.A., mother with a P.P.H.

Posts and Telegraphs District

Mrs. Mary Naftali from 7th — 31st December.

The Supervisor held monthly meetings with all the midwives, and different aspects of the work were emphasised in discussion with them. The midwives on these occasions had the opportunity of raising problems which had occurred in their districts. Midwives with private practices were invited to attend these meetings. They were Mrs. Ruth Elikani and Miss Cecilia Nduta. The former had 85 African deliveries during the year, but from the 1st January to August, when she closed St. Jude's Clinic, Cecilia only sent in five notifications of births.

District	Normal living child.	Normal dead child.	Abnormal living child.	Abnormal dead child.	To A.M.H.	Other cases	Total	P.N.E.	B.B.A.	Infant deaths	Maternal deaths
Kaloleni	80	—	—	—	7	—	87	33	2	1	1
Makongeni, Maisha and Liverpool Road	119	1	1	—	6	—	127	36	5	1	—
Muthuruwa	46	—	—	—	5	—	51	25	1	—	—
Bahati	75	—	—	3	9	—	87	27	1	3	1
P. & T.	2	—	—	—	—	—	2	—	—	—	—

Post Natal Visits by Supervisor

Total	Not Seen	Gone to Reserves	Wrong Address	Overcrowded
872	242	37	107	157

AFRICAN MATERNITY HOSPITAL

Staff

There have been several changes during the year. Dr. P. M. Anderson was on overseas leave from June until December, during which time Dr. Foley deputised.

Miss Foord retired on the 1st September and Miss Koppert was appointed Acting Matron.

Sister Wenzel was appointed Acting Sister Tutor from November 1st.

Throughout the year there has been a full European staff. The Social Welfare worker Miss Vaux resigned on September 1st. The post was thereafter filled temporarily by Mrs. Cresswell, then Miss Salk.

There has been a full complement of Staff Nurses throughout the year and greater responsibilities have been given to them.

Training

The whole training programme for nurses has been drastically reorganised. Sister Wenzel, the Sister Tutor, in addition to giving nursing training to the junior nurses and midwifery training to the seniors, runs the Ante Natal and Post Natal Clinics, where she is able to give a great deal of practical tuition. There are daily lectures for all groups. The Staff Nurses have been given greater scope and responsibilities in their various wards and departments, including the practical teaching of delivery and ward techniques. Frequently Caesarean Sections and other operations are performed with teams of trainee nurses only in the theatre, which indicates that most of them are fully able to accept the responsibilities assigned to them when properly instructed. In September 100% passed the Junior examination, 75% passed the Senior examination and 100% gained their Midwives' Certificates.

The results of the new system of training will not be fully demonstrated until the nurses who started in October 1956 have completed their curriculum, but it is hoped and expected that results will improve with each succeeding intake.

There are still far more applicants for training than can possibly be absorbed, and concerted attempts are being made to select trainees with sufficient educational background to enable them to complete the exacting course. As in previous years, the majority are Kikuyu.

Towards the end of the year a noticeable improvement in both discipline and happiness of the nurses was observed.

General Work

Once again the total number of admissions has risen compared with the previous year, Jaluo admissions rising proportionately faster than other tribes. This overall increase in numbers has necessarily resulted in frequent shortages of beds. Patients are no longer able to enjoy five days of hospital nursing after normal delivery. Normal patients who have attended the ante natal clinics of the Maternity and Child Welfare Department are often sent home as early as the second day to the care of the District Midwives to make room for new abnormal admissions. We are very grateful to the staff of the Maternity and Child Welfare Department for their unfailing help on these occasions. We find we are relying on them more and more often.

The number of abnormal cases treated has risen by 16 only. Shewn as a percentage of the admissions in 1955, 16.1% were abnormal and in 1956 14.2% were abnormal — which once again stresses the value of ante natal supervision.

The number of operations performed has increased from 88 to 148, and the effect is shewn in the decrease in maternal deaths and the increase in live births.

The number of stillbirths remains fairly constant — 5.9% in 1955 and 6.2% in 1956. Infant deaths have decreased. In 1955 there were 8% and in 1956 only 5.2%. The number of premature babies is still high, but seventeen less babies have died as a result of prematurity than last year.

It is our opinion that the average size of babies — irrespective of the tribe — is increasing, possibly due to the improved standard of living which the mothers enjoy. This observation would seem to be borne out by the increase of forceps and Caesarean operations for disproportion, especially in mothers who have in previous confinements been able to deliver themselves normally of smaller children.

The attendances at the Ante Natal Clinic have increased by nearly 1,000 over the figure for last year. The standard of the work performed in this clinic has also greatly improved. Cases of anaemia, parasitic infestations and malaria are diagnosed and treated earlier and proper appraisal of pregnancy abnormalities is made long before the patient reaches term. We are very grateful to the staff of the Venereal Diseases Clinic who still examine all our ante natal patients, and we feel that their help, so readily given, has a marked beneficial effect on the general health of mothers and babies during confinement and the neonatal period.

In conclusion, the objects of maternity hospital work are twofold, firstly to increase the number of live births and secondly to decrease the number of maternal deaths. The figure for live births has increased by 315 over the 1955 figure. The maternal death rate has dropped from 10 in 1955 to 5 in 1956, that is from 3 per thousand admissions to 1.5 per thousand admissions.

Other Items

We would like to express our thanks to the staff of the Parks and Gardens Department for the maintenance of our beautiful gardens, and to the staff of the Maintenance Department for the improvements made to the hospital buildings and for the erection of the new Ante Natal Clinic.

Some of the items of a larger list of hospital equipment ordered have already arrived. These include the anaesthetic apparatus for the theatre, which is a very great improvement.

A Nurses' Social Club has been started and is run by Matron and Sister Tutor. A weekly social evening is held, which is very popular.

On September 10th compulsory English lessons were started and we have noticed a pronounced improvement in the nurses' written and spoken English since then.

On October 18th the hospital was honoured by a visit from H.R.H. Princess Margaret and members of the staff were presented to her.

Hospital Statistics

Total Admissions	3,383
Births	2,701
Stillbirths	167
Maternal Deaths	5
Infant Deaths	142
Operations	148
Born Before Arrival	141
Abnormal Presentations	192
Twins	46
Triplets	—

Ante Natal Clinics

Number of clinics held	205
Attendances	14,839

Post Natal Clinics

Number of clinics held	50
Attendances	803
Patients in Hospital on first day of year	39

Admissions

Resident	2,630
Non-resident	753
Total	3,383

Discharges

3,243

Patients in Hospital on last day of year ...	63
Patient Days	19,158
Baby Days	16,116
Motherless Baby Days	398

Admission by Districts

Athi River	23	Kasarani	10	Limuru	16
Dagoretti	30	Kiambu	42	Lukenya	1
Dandora	28	Kibera	18	Machakos	8
Embakasi	27	Kima	2	Mbagathi	2
Fort Hall	2	Kisumu	1	Narok	1
Juja	5	Kikuyu	8	Nakuru	1
Kabete	271	Kururu	5	Ngong	61
Kahawa	41	Kijabe	1	Ruiru	15
Kajiado	3	Kwale	1	Ruaraka	75
Kamiti	3	Langata	35	Sultan Hamud	1
Karen	36	Lima	1	Thika	4
				Uplands	2

Admission by Tribes

	Clinic	Direct	Total
Kikuyu	807	134	941
Jaluo	872	104	976
Other Tribes	1,211	250	1,461

Statistics, Clinic and Non-clinic

	Clinic	Direct	Total
Births	2,409	292	2,701
Stillbirths	127	40	167
Born Before Arrival ...	85	56	141
Malpresentations	152	40	192
Twins	37	9	46

Stillbirths with Causes

	Clinic	Direct	Total
Anencephalic	6	2	8
Atelectasis	4	1	5
Ante-partum haemorrhage	1	0	1
Birth injuries	2	1	3
Breech deliveries	4	1	5
Cause unknown	8	5	13
Cord round neck	3	1	4
Congenital syphilis ...	2	0	2
Delayed labour	12	4	16
Death in utero	7	6	13
Heart Failure	2	0	2
Hydrocephalic	4	0	4
Macerated foetus	10	2	12
Obstructed labour	10	2	12
Placenta praevia	2	2	4
Prematurity	25	12	37
Prolapsed cord	13	1	14
Ruptured uterus	3	0	3
Spina bifida	1	0	1
Toxaemia	4	0	4
True knot in cord	1	0	1
White asphyxia	3	0	3
	127	40	167

Infant Deaths with Causes

	Clinic	Direct	Total
Atelectasis	4	3	7
Birth injuries	4	1	5
Cerebral injuries	3	3	6
Congenital oedema ...	1	0	1
Congenital heart	7	0	7
Congenital deformities ...	1	0	1
Gastro-enteritis	1	1	2
Jaundice neonatorum ...	3	0	3
Malnutrition	4	0	4
Marasmus	2	1	3
Pneumonia	0	1	1
Prematurity	62	41	103
	92	51	143

Maternal Deaths with Causes

	Clinic	Direct	Total
Anaemia and toxaemia ...	0	1	1
Eclampsia	1	0	1
Endometritis	1	0	1
Heart failure	1	0	1
Ruptured uterus	0	1	1
	3	2	5

Operations

	Clinic	Direct	Total
Artificial rupture of membranes	7	0	7
Caesarean Sections	57	12	69
Curettage	6	1	7
Evacuation of uterus ...	1	0	1
Evacuation of haematoma ...	1	0	1
Excision of Keloid ...	0	1	1
Forceps	36	7	43
Hysterotomy	1	0	1
Internal Podalic Version	8	0	8
Manual Removal of Placenta	6	1	7
Perineorrhaphy	1	0	1
Repair of uterus	1	0	1
Replacement of prolapsed hand	1	0	1
	126	22	148

Clinics

Ante-Natal :

Number held	205	
New cases, Resident		2,760
New cases, Non-Resident		1,769
Repeats, Resident		6,303
Repeats, Non-Resident		4,007
		14,839

Post-Natal :

Number held	50	
Resident		617
Non-Resident		186
		803

Total Abnormal Cases Treated	500
Total Normal Cases Treated	2,689
Died	5
Recovered	3,184

VENEREAL DISEASES CLINIC

The work of the clinic was continued in the building in the grounds of the African Maternity Hospital. Dr. L. O. Hunter, Medical Officer, V.D. Clinic, retired on July 31st after 14 years' service. The work was carried on by Dr. H. Weir.

The total attendance for the year was 21,349, a decrease of 5,022 over the previous year. Of this number (21,349), 13,499 visits were paid by patients with venereal disease. The average attendance per day in 1956 was 85 patients.

Fewer new patients were admitted to the clinic in the latter part of the year and comparative figures are given :—

	Jan – June	July – Dec.
Patients with Syphillis	217	262
Patients with Gonorrhoea :		
Positive	84	42
Clinical	666	194
Those found to be negative ...	1,349	1,034
	2,316	1,532

SYPHILIS

Analysis of 640 cases of syphilis seen in 1956, compared with 708 cases seen in 1955

		1956	1955
Group 1.	Cases who received no treatment at all ...	6	30
Group 2.	Cases given a complete course of treatment before 1956, who attended for "follow-up" only ...	81	59
Group 3.	Cases where treatment was begun in 1956 and continued in 1957	85	63
Group 4.	Cases whose treatment was begun in 1955 and continued in 1956		
	(a) those who completed treatment; ...	43	65
	(b) defaulted before completing treatment; ...	14	37
Group 5.	Cases treated with a complete course of penicillin, arsenic and bismuth, or penicillin and bismuth ...	159	187
Group 6.	Cases who defaulted during a course of penicillin, arsenic and bismuth ...	252	267
	Totals	640	708

GONORRHOEA

The number of cases of gonorrhoea attending the clinic in 1956 was 1,083, a decrease of 449 cases over the 1955 figure.

The following table is an analysis of these 1,083 cases compared with the 1,534 cases seen in 1955.

	1956	1955
1. Cases who received no treatment ...	3	22
2. Cases treated in 1956 and who attended for "follow-up" in 1957	11	85
3. Cases treated and discharged cured	416	447
4. Cases who defaulted before being cured	543	738
5. Cases treated in 1956 who were re-admitted with a new infection ...	110	242
Totals	1,083	1,534

Lymphogranuloma Venereum

One case of lymphogranuloma venereum was seen during the year which was treated and discharged cured.

Other cases — not venereal disease

During 1956, 2,443 patients attended the clinic for examination who were found not to be suffering from venereal disease. They were treated for vaginitis, cervical erosions and non-specific vaginal discharge.

Of this number (2,443)	1,859	were discharged;
	565	defaulted,
	19	continued into 1957.
Total	2,443	

Statistics Venereal Diseases Clinic, 1956

1. Attendances

	1954	1955	1956
Total attendance for the year	18,680	26,371	21,349
Number of clinics	253	253	250
Average attendance per day	74	104	85

2. Consultations

	1954	1955	1956
By patients with syphilis	5,724	7,827	6,244
By patients with gonorrhoea	6,418	9,455	7,237
By patients with lymphogranuloma	—	17	18
By patients with soft chancre	141	16	—
Total by patients with venereal disease	12,283	17,315	13,499
By other patients (not venereal disease)	6,397	9,056	7,850
Total consultations	18,680	26,371	21,349

3. Analysis of cases

	1954	1955	1956
Number of cases of :—			
Syphilis			
Primary	61	65	37
Secondary	159	170	174
Total acute syphilis	220	235	211
Latent	344	399	345
Tertiary	1	—	—
Congenital	76	74	84
Total syphilis	641	708	640
Gonorrhoea	1,348	1,534	1,083
Soft Chancre	2	2	—
Lymphogranuloma venereum	—	1	1
Total cases of Venereal diseases	1,991	2,245	1,724
Other cases (not venereal diseases)	2,151	2,729	2,443
Total cases	4,142	4,974	4,167

4. Pregnant women

The number of pregnant women who attended the clinic was 2,403. In 1955, 2,527 pregnant women were seen. Of these 2,403 pregnant women —

364 were suffering from syphilis;
519 were suffering from gonorrhoea;
1,520 were found to be free from venereal disease.

5. Injections given

	1954	1955	1956
Intravenous N.A.B.	3,228	2,294	1,285
Intramuscular bismuth and acetylarsan	3,664	4,000	2,994
Penicillin	3,077	5,729	4,815
Totals	9,969	12,023	9,094

Penicillin : 3,130 penicillin injections were given to cases of gonorrhoea and 1,629 penicillin injections to cases of syphilis. The remaining 56 penicillin injections were given for other reasons.

6. Specimens for Kahn test, 6,885.

Positive	Doubtful	Negative
1,241	452	5,192

7. Smears for gonococcal examination

During the year 16,182 smears were taken for examination. This averaged 64 per clinic. The results of the examination of these smears were as follows :—

Smears from urethra	7,957	Number positive		3
„ „ cervix	7,819	„	„	96
„ „ vagina	157	„	„	11
„ „ eye	249	„	„	16
Total smears taken	16,182	Total positive		126

8. Home visits

The total number of visits paid was 1,474. On 769 occasions the patient was contacted and 479 return visits were paid to the clinic after these contacts.

9. Ayahs

The number of ayahs referred for examination was	137
Those with syphilis	27
Those with gonorrhoea	9
Total with venereal disease	36
Total negative	101
Total examined	137

STAFF CLINIC

AND INOCULATION CENTRE

Staff Clinic

The figures for 1956 are :—

Total attendances	17,795	Fit for duty	10,636
Total new cases	7,277	Unfit for duty	6,999
Average daily African staff			3,532
Daily attendance rate			1.97%
Daily off duty rate			0.766%

The principal complaints were :—

	1955		1956	
	No. cases	% new cases	No. cases	% new cases
Respiratory diseases	1,539	24%	1,411	19%
Wounds	1,214	19%	1,278	17%
Abdominal	852	13%	807	11%
Influenza	808	12%	1,111	15%

INOCULATION CENTRE

Inoculation and Vaccinations 1956

		Europeans	Asians	Africans	Total
Smallpox	...	6,310	10,132	5,265	21,707
Yellow Fever	...	5,396	8,973	247	14,616
T.A.B.	...	982	974	16,807	18,763
Cholera	...	284	1,898	10	2,192
Diphtheria	...	82	2	—	84
Diphtheria/Pertussis	...	340	56	—	396
Whooping Cough	...	11	58	—	69
Plague	...	—	—	—	—
Totals	...	13,405	22,093	22,329	57,827

SCHEDULE OF STAFF

Post	Name of Officer	Established Non-Established Temporary
Medical Officer of Health	A. T. G. Thomas, M.D., B.S., D.P.H. ...	E.
Deputy M.O.H.	J. W. McAllan, M.B., Ch.B., D.P.H. ...	E.
Staff and Inoculation Clinic:		
Assistant Medical Officer	F. S. Gillespie, M.B., B.Ch., B.A.O. ...	T.
Sister Storekeeper	Mrs. J. Young, S.R.N., T.A. Cert. ...	E.
Sanitary Inspection:		
Senior Sanitary Inspector:	Mr. R. C. Forster, M.B.E., Cert. R.S.I. and Meat Cert., San.Sc. (Retired December)	E.
	Mr. H. T. Beechey, Cert. R.S.I. and Meat, Dip. R.I.P.H.H. (Hons.) (Commenced (August)	E.
Sanitary Inspectors (Grade I)	Mr. D. Mackintosh, Cert., R.S.A.S. ...	E.
	Mr. S. White, Cert., R.S.I.	E.
	Mr. A. Ramshaw, Cert., R.S.I. and Meat	E.
	Mr. K. E. Kendray, Cert. R.S.I. & Meat	E.
	Mr. S. Daley, Cert., R.S.I. and Meat ...	E.
	Mr. G. B. Ashford, Cert. R.S.A. (Scotland) and Meat	E.
	Mr. J. Knowles, Cert., R.S.I. and Meat	E.
	Mr. P. H. Newbold, Cert., R.S.I. and Meat (Commenced December) ...	E.
	Mr. G. V. Boid, Cert., R.S.A. (Scotland) and Meat (Commenced December)	E.

It is with very great regret that the death of Mr. S. White in August, 1956, must be recorded. He had served the Council since 1933, and his death is a loss to the department.

Post	Name of Officer	Established Non-Established Temporary
Sanitary Inspectors (Grade II)	Mr. R. D. Belsare, Cert. R.S.I. (India) & Meat Cert. (Eng.), Cert. Trop. Hy.	E.
	Mr. Mohd. Din, Cert., R.S.I. (India) ...	E.
Sanitary Inspectors (African)	Mr. N. Mimano, Cert., R.S.I. (E.A.) ...	E.
	Mr. T. L. Muganda, Cert., R.S.I. (E.A.) ...	E.
	Mr. J. A. Ngaruiya, Cert., R.S.I. (E.A.)	E.
	Mr. W. G. K. Nyawade, Cert., R.S.I. (E.A.)	E.

Clerical Staff :

Administrative Assistant	Mr. R. C. Forster, M.B.E. (From 6.12.56)	T.
Secretary	Mrs. A. M. Alexander (to July) ...	E.
	Mrs. C. Burge (from September) ...	E.
Clerk/Typists	Mrs. D. I. Butcher	N.E.
	Mrs. S. Powell	N.E.
	Mrs. M. Waller (to August)	T.

Infectious Diseases Control Department :

Infectious Diseases Officer	Mr. J. Morrill	E.
Mosquito Inspectors	Mr. A. Gocs	E.
	Mr. M. I. Shah, Cert. R.S.I. (India) ...	E.
	Mr. Y. Ahmedi	E.
Malaria Overseer	Mr. S. Keli	E.
	Mr. H. Odida	E.
Rodent Officer	Mr. L. H. Clough	E.
Rodent and Vermin Overseer	Mr. J. Karebe	E.
Clerk/Typist	Mrs. G. H. Millership	E.
Laboratory Technicians	Mr. W. Ongare	E.
	Mr. S. Otieno	E.

European Child Welfare :

Medical Officer	Dr. P. Gaffikin, M.B., Ch.B.	E.
Health Visitors	Mrs. E. M. Sullivan, S.R.N.	E.
	Mrs. M. Dempster, S.R.N., S.C.M., H.V. Cert. R.F.N.	E.

Post	Name of Officer	Established Non-Established Temporary
Parklands Day Nursery:		
Matron	Mrs. I. B. J. Ross-Whyte, Princess Louise Children's Nurse	E.
Assistants	Mrs. L. Somen	Con.
	Mrs. J. Reeves	T.
	Mrs. C. Randall	T.
	Mrs. H. Priest	T.
	Mrs. C. Carcasson	T.
	Mrs. W. Jones	T.
Woodley Day Nursery:		
Matron	Mrs. I. Daley	N.E.
Assistants	Mrs. I. Simpson	T.
	Mrs. G. Whipp	N.E.
	Mrs. G. Burnett	Con.
	Mrs. P. Dowdell	T.
	Mrs. L. M. Simpson	Con.

High Ridge Day Nursery:		
Matron	Mrs. H. R. Hobden, S.R.N., S.C.M. ...	E.
Assistants	Mrs. E. H. Johannes, Teacher's Diploma and Domestic Science Diploma (Lebanon)	E.
	Mrs. O. Pereira	T.
	Mrs. L. Gunputrau	T.
	Mrs. S. L. Puri	T.
African Maternity and Child Welfare:		
Medical Officers	Dr. J. A. T. Henry, M.B.E., M.B., Ch.B., D.T.M. and H.	E.
	Dr. V. R. Hume (Part year)	T.
	Dr. E. Haskard (Jan. - Sept.)	T.
	Dr. B. H. P. Van der Werf (Sept. - Dec.)	T.
Supervisor of Health Visitors	Mrs. E. T. Dugmore, S.R.N., S.C.M. (Resigned May)	E.
	Mrs. N. Mitchell, S.R.N., S.C.M. ...	T.

Post	Name of Officer	Established Non-Established Temporary
Supervisor of District Midwives	Mrs. C. M. Davis, S.R.N., S.C.M., H.V. Cert.	E.
Health Visitors	Mrs. B. J. Brooks, S.R.N., S.C.M. ...	E.
	Mrs. M. Taylor, S.R.N., S.C.M. ...	E.
	Miss J. P. Koppert, S.R.N., S.C.M. ...	E.
	Mrs. D. M. Burgess, S.R.N., S.C.M., H.V. Cert.	T.
	Miss P. J. Fisher, S.R.N., S.C.M., H.V. Cert.	E.
	Mrs. J. M. Jackson, S.R.N., S.C.M. ...	T.
	Mrs. I. B. Pereira, S.R.N., S.C.M. H.V. Cert.	T.
	Mrs. D. Carter, Enrolled Nurse, S.C.M.	T.
	Mrs. T. H. Wilson, S.R.N., S.C.M. ...	T.
	Miss M. Perkins, S.R.N., S.C.M. ...	T.
	Mrs. D. M. MacLean, S.R.N., S.C.M. Special Premature Baby Nursing Cert.	T.
	Miss B. Davies, S.R.N., S.C.M. (1st Part), H.V. Cert.	T.
Venereal Diseases Clinic:		
Medical Officer	Dr. H. Weir	T.
European Sisters	Mrs. M. Bracken, S.R.N.	E.
	Mrs. V. Hook, S.R.N.	E.
Lady Grigg African Maternity Hospital:		
Medical Superintendent	Dr. P. M. Anderson	E.
	Dr. E. Foley (Locum June – Dec.) ...	T.
Matron	Miss K. M. Foord, M.B.E., S.R.N., S.C.M. (resigned August)	E.
	Miss J. Koppert, S.R.N., S.C.M. (Acting Matron)	E.
European Sisters	Miss S. T. Wenzel, S.C.M. (Sister Tutor)	E.
	Mrs. M. Joyce, S.C.M.	E.
	Mrs. P. Welford, S.R.N., S.C.M. ...	T.
	Miss L. J. Vaux, S.R.N., C.M.B. ...	Con.
	Miss F. E. O'Toole, S.R.N., S.C.M. ...	E.
	Mrs. A. Holmes, S.R.N., S.C.M. ...	T.
	Mrs. E. Packman, S.R.N., S.C.M. (to August)	T.
	Mrs. D. M. Cresswell, S.R.N., (Sept. – November)	T.
	Mrs. J. Durie, S.R.N., S.C.M., (from November)	T.
	Miss R. Zalc (November – December) ...	T.

Post	Name of Officer	Established Non-Established Temporary
Indian Maternity and Child Welfare:		
Medical Officer	Dr. P. Gaffikin, M.B., Ch.B.	E.
	Dr. R. Hume (Part-time, Jan – May) ...	T.
	Dr. E. Shirley (May – December) ...	T.
Supervisor of Health Visitors	Mrs. M. Arthur, S.R.N., S.C.M., H.V. Cert., R.S.H.	E.
Health Visitors	Mrs. E. Tyagi	E.
	Mrs. N. Nayer, H.V. (Kenya)	E.
	Mrs. J. Safri	N.E.
	Mrs. S. R. Daya	N.E.
	Mrs. M. Sandhu, H.V. (Kenya) ...	E.
	Mrs. K. B. Saleem (formerly Miss Khursheed Ramzan), H.V. (Kenya)	E.
	Mrs. Trilochan Singh	N.E.
	Miss Gulshan Ahamed	E.
	Miss Shirin Ahamed	N.E.
	Mrs. Gurcharan Singh	T.
	Mrs. R. Pachecos, S.R.N. (Karachi), H.V. (Kenya)	E.
Clerk Interpreter	Miss Davinder Kaur Sehmi	E.

SECTION 18

GENERAL FUND REVENUE ACCOUNT FOR THE PUBLIC HEALTH

EXPENDITURE

Public Health Administration :

	£ s. cts.	£ s. cts.
Employees —		
Salaries	25,576 1 19	
Special Temporary Allowances	568 15 18	
Housing Allowances	379 4 44	
Superannuation Charges	4,024 3 61	
Provident Fund Contributions	143 0 48	
Passages Reserve Contribution	575 0 00	
Medical Benefits	211 17 77	
Wages etc. — African Staff	444 6 20	
Passages — New Appointments	569 18 73	
		32,492 7 60
Running Expenses —		
Transport		
Locomotion	1,201 14 40	
Other Transport	3 2 21	
Establishment Expenses		
Printing, Stationery and Advertising ...	668 16 24	
Printing Report	256 5 00	
Postages	228 5 02	
Telephone	424 13 55	
Insurances	659 6 00	
Uniforms	52 3 46	
Rent of Offices	2,432 1 71	
Central Establishment Charges	7,710 0 00	
Miscellaneous		
Food and Drug Analysis	783 16 64	
Food and Meat Inspection	21 4 54	
Public Health Propaganda	178 13 47	
Purchase of Projector	235 0 00	
Demolition of Buildings	5 8 00	
Other Expenses	36 2 57	
		14,896 12 81
		47,389 0 41
Less : Charged to Staff Clinic, Inoculation Centre and Poultry Abattoir ...		235 0 00
Carried forward		47,154 0 41

YEAR ENDED 31st DECEMBER 1956

SERVICES

INCOME

Public Health Administration :

	£ s. cts.	£ s. cts.
Government Grant	84,955 16 00	
Fees — Food and Drug Analysis	74 14 00	
Other Income	1 1 00	
		85,031 11 00

Carried forward 85,031 11 00

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		47,154 0 41
Staff Clinic and Inoculation Centre:		
Employees —		
Salaries	2,050 13 35	
Special Temporary Allowances	53 4 83	
Superannuation Charges	58 5 16	
Wages etc. — African Staff	1,368 1 62	
		3,530 4 96
Running Expenses —		
Furniture and Fittings	8 0 00	
Electricity	22 6 86	
Supplies, Equipment, etc.		
Medical Stores and Equipment	580 9 71	
Cleaning Materials	3 1 86	
Uniforms	27 10 36	
Laundry	31 2 55	
Transport		
Other Transport	1 3 00	
Establishment Expenses		
Printing, Stationery and Advertising ...	12 16 52	
Telephone	41 12 24	
Rent of Offices	720 10 35	
Departmental Establishment Charges ...	210 0 00	
Other Expenses	15 0 00	
		1,673 13 45

Carried forward	52,357 18 82

INCOME

	£ s. cts.	£ s. cts.
Brought forward		85,031 11 00
Staff Clinic and Inoculation Centre:		
Government Contribution for Inoculation ...	900 0 00	
Vaccination and Inoculation Fees	111 17 80	
		1,011 17 80

Carried forward	86,043 8 80

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		52,357 18 82
Infectious Diseases Prevention :		
Employees —		
Salaries	6,890 9 84	
Special Temporary Allowances	127 6 40	
Housing Allowances	234 14 29	
Superannuation Charges	760 12 03	
Medical Benefits	169 14 65	
Wages etc. — African Staff	13,659 17 95	
		21,842 15 16
Running Expenses —		
PREMISES		
Maintenance of Buildings	10 6 81	
SUPPLIES, EQUIPMENT, ETC.		
Stores and Materials	3,634 13 66	
Laboratory Equipment	11 4 42	
Uniforms	418 15 95	
TRANSPORT		
Locomotion	834 16 26	
T.I.F.A. unit	964 10 69	
Other Transport	2,583 6 25	
Establishment Expenses		
Printing, Stationery and Advertising ...	557 5 11	
Telephone	58 5 04	
Rent of Offices	507 18 79	
Miscellaneous		
Fly Nuisance Abatement	178 1 43	
Hospital Fees	2,851 0 00	
Notification Fees	39 2 00	
Other Expenses	7 11 20	
		12,656 17 61
Carried forward		86,857 11 59

INCOME

	£ s. cts.	£ s. cts.
Brought forward		86,043 8 80
Infectious Diseases Prevention :		
Vermin and Rodent Destruction	2,957 18 73	
Malaria Control	200 0 00	
		3,157 18 73

Carried forward	89,201 7 53

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		86,857 11 59
Venereal Diseases Treatment:		
Employees —		
Salaries	3,852 10 87	
Special Temporary Allowances	81 19 96	
Superannuation Charges	204 14 51	
Provident Fund Contributions	102 17 23	
Medical Benefits	22 4 82	
New Appointments	37 4 92	
Wages etc. — African Staff	1,175 17 17	
		5,477 9 48
Running Expenses —		
PREMISES		
Maintenance of Buildings	27 16 69	
Cleaning Materials	40 0 09	
SUPPLIES, EQUIPMENT, ETC.		
New Equipment	1 9 25	
Medical Stores and Equipment	566 13 03	
Uniforms	43 19 84	
TRANSPORT		
Locomotion	45 17 41	
Other Transport	5 1 50	
Establishment Expenses		
Printing, Stationery and Advertising ...	78 4 96	
Rent	360 0 00	
Insurance	18 00	
		1,170 0 77
Carried forward		93,505 1 84

INCOME

	£ s. cts.	£ s. cts.
Brought forward		89,201 7 53
Venereal Diseases Treatment:		
Fees	42 10 00	
Rent	72 0 00	
		114 10 00

Carried forward	89,315 17 53

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		93,505 1 84
Day Nurseries :		
European — Parklands		
EMPLOYEES —		
Salaries	3,799 6 60	
Special Temporary Allowances	91 0 27	
Superannuation Charges	95 19 22	
Passages Reserve Contribution	55 0 00	
Medical Benefits	16 3 50	
Wages etc. — African Staff	439 18 94	
		4,497 8 53
Running Expenses —		
PREMISES.		
Maintenance of Buildings	126 19 03	
Maintenance of Furniture and Fittings ...	131 13 68	
New Furniture	174 15 37	
Maintenance etc. of Grounds	293 2 07	
Tarmac Drive	85 5 59	
Fencing	13 0 17	
Electricity and Fuel	246 6 14	
Water and Conservancy	57 13 10	
Cleaning Materials	109 15 45	
Rates	112 10 00	
Renewals Reserve Contribution	125 0 00	
Supplies, Equipment etc.		
Maintenance of Equipment etc.	159 2 68	
New Equipment	182 15 77	
Provisions	990 0 71	
Uniforms	28 19 80	
Establishment Expenses		
Printing, Stationery and Advertising ...	8 19 65	
Telephone	41 3 60	
Insurances	4 3 67	
Miscellaneous		
Loans Fund Expenses	4 15 81	
Other Expenses	18 3 30	
		2,914 5 59
Loan Charges —		
Principal	148 18 16	
Interest	258 4 94	
		407 3 10
Carried forward		101,323 19 06

INCOME

	£ s. cts.	£ s. cts.
Brought forward		89,315 17 53
Day Nurseries :		
European — Parklands		
Fees		6,822 9 52

Carried forward		96,138 7 05

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		101,323 19 06
Day Nurseries—(Continued)		
European — Woodley		
EMPLOYEES —		
Salaries	3,739 4 06	
Special Temporary Allowances ...	87 1 42	
Superannuation Charges	133 11 62	
Housing Allowance	41 13 30	
Medical Benefits	32 7 01	
Wages etc. — African Staff	434 18 55	
		4,468 15 96
Running Expenses —		
PREMISES		
Maintenance of Buildings etc.	163 2 48	
Alterations to Buildings	387 8 26	
Maintenance of Grounds	209 17 15	
Fencing	32 5 77	
Maintenance of Furniture and Fittings ...	214 15 31	
Electricity and Fuel	177 1 39	
Water and Conservancy	74 7 44	
Cleaning Materials	177 16 38	
Rates	56 5 00	
Renewals Reserve Contribution ...	150 0 00	
Supplies, Equipment, etc.		
Maintenance of Equipment etc.	70 0 52	
New Equipment	12 0 87	
Provisions	1,219 10 03	
Uniforms	52 12 67	
Transport		
Locomotion	9 0 40	
Other Transport	1 8 40	
Establishment Expenses		
Printing, Stationery and Advertising ...	17 17 11	
Telephone	42 5 65	
Insurances	4 10 00	
Miscellaneous		
Loans Fund Expenses	15 15 29	
Other Expenses	18 11 61	
		3,106 11 73
Loan Charges —		
Principal	606 7 47	
Interest	705 9 83	
		1,311 17 30
Carried forward		110,211 4 05

INCOME

	£ s. cts.	£ s. cts.
Brought forward		96,138 7 05
Day Nurseries—(Continued)		
European — Woodley		
Fees	5,474 4 15	
Rent of Flat	60 0 00	
		5,534 4 15

Carried forward	101,672 11 20

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		110,211 4 05
Day Nurseries—(Continued)		
Asian — High Ridge		
EMPLOYEES —		
Salaries	2,224 5 35	
Special Temporary Allowances ...	45 6 24	
Superannuation Charges	124 19 98	
Medical Benefits	8 1 75	
Wages etc. — African Staff	214 13 28	
		2,617 6 60
Running Expenses —		
PREMISES		
Maintenance of Furniture and Fittings ...	90 5 08	
Maintenance of Buildings	67 13 58	
Maintenance of Grounds	119 3 05	
Sandpit	70 15 86	
Electricity and Fuel	150 7 48	
Water and Conservancy	44 14 10	
Cleaning Materials	52 17 33	
Rates	86 12 50	
Renewals Reserve Contribution ...	85 0 00	
Supplies, Equipment etc.		
Maintenance of Equipment etc. ...	11 14 96	
New Equipment	64 18 60	
Provisions	769 10 83	
Uniforms	20 0 96	
Establishment Expenses		
Printing, Stationery and Advertising ...	9 12 53	
Telephone	25 17 25	
Insurances	1 10 00	
Other Expenses	8 16 10	
		1,679 10 21
Carried forward		114,508 0 86

INCOME

	£ s. cts.	£ s. cts.
Brought forward		101,672 11 20
Day Nurseries—(Continued)		
Asian — High Ridge		
Fees		3,276 15 86

Carried forward	104,949 7 06

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		114,503 0 86
Maternity and Child Welfare :		
European		
EMPLOYEES —		
Salaries	2,282 13 55	
Special Temporary Allowances ...	53 10 48	
Superannuation Charges	83 11 64	
Provident Fund Contributions	71 5 77	
Passage Reserve Contribution	55 0 00	
Medical Benefits	8 1 75	
		2,554 3 19
Running Expenses —		
PREMISES		
Maintenance of Furniture etc.	2 16 23	
New Furniture and Fittings	4 4 06	
Water and Conservancy	16 10	
Renewals Reserve Contribution ...	10 0 00	
Supplies, Equipment etc.		
New Equipment	90 9 69	
Medical Stores and Equipment	83 7 97	
Purchase of Infant Foods	593 13 30	
Uniforms	1 8 46	
Transport		
Locomotion	224 4 02	
Establishment Expenses		
Printing, Stationery and Advertising ...	10 6 70	
Telephone	9 15 39	
Insurance	9 29	
Other Expenses	18 30	
		1,032 9 51
Loan Charges		128 6 60
Carried forward		118,223 0 16

INCOME

	£ s. cts.	£ s. cts.
Brought forward		104,949 7 06
Maternity and Child Welfare:		
European		
Sale of Foods		575 8 85

Carried forward		105,524 15 91

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		118,223 0 16
Maternity and Child Welfare—(Continued)		
Asian		
EMPLOYEES		
Salaries	9,049 3 13	
Special Temporary Allowances	202 5 29	
Superannuation Charges	915 17 99	
Provident Fund Contributions	102 7 08	
Passages Reserve Contribution	105 0 00	
Medical Benefits	22 2 75	
Wages etc. — African Staff	550 19 70	
		10,947 15 94
Running Expenses —		
PREMISES		
Maintenance of Grounds	60 4 26	
Maintenance of Buildings	310 6 17	
Maintenance of Furniture etc.	108 0 91	
New Furniture and Fittings	47 1 24	
Fencing	4 10 36	
Electricity and Fuel	175 14 96	
Water and Conservancy	34 5 20	
Cleaning Materials	44 10 14	
Rates	379 2 50	
Renewals Reserve Contribution ...	150 0 00	
Supplies, Equipment etc.		
Medical Stores and Equipment	179 9 47	
New Equipment	52 14 83	
Uniforms	72 17 03	
Transport		
Locomotion	224 2 55	
Other Transport	662 3 95	
Establishment Expenses		
Printing, Stationery and Advertising ...	109 7 15	
Telephone	31 19 78	
Insurances	3 2 00	
Miscellaneous		
Health Visitors Training Scheme ...	18 19 50	
Midwives and Dais Training Scheme ...	9 8 67	
Loans Fund Expenses	3 5 35	
		2,681 6 02
Loan Charges —		
Principal	110 0 72	
Interest	109 3 21	
		219 3 93
Carried forward		132,071 6 05

INCOME

	£ s. cts	£ s. cts.
Brought forward		105,524 15 91
Maternity and Child Welfare—(Continued)		
Asian		
Training Fees		55 0 00

Carried forward		105,579 15 91

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		132,071 6 05
Maternity and Child Welfare—(Continued)		
African		
EMPLOYEES —		
Salaries	12,467 9 71	
Special Temporary Allowances	289 2 74	
Superannuation Charges	375 12 28	
Provident Fund Contributions	222 4 21	
Passages Reserve Contributioon ...	165 0 00	
Medical Benefits	56 12 26	
New Appointments	15 9 80	
Wages etc. — African Staff	4,509 12 65	
		18,101 3 65
Running Expenses —		
PREMISES		
Maintenance of Buildings	792 0 73	
Maintenance of Grounds	26 1 21	
Maintenance of Furniture etc.	124 5 83	
New Furniture and Fittings	578 18 47	
Electricity	157 7 07	
Water and Conservancy	40 14 20	
Cleaning Materials	84 16 32	
Rents	212 0 10	
Rates	144 0 00	
Supplies, Equipment etc.		
Medical Stores and Equipment —		
Clinics	1,317 9 95	
Medical Stores and Equipment —		
Midwives	34 9 56	
Medical Stores for Resale	12 15 10	
New Equipment	344 1 32	
Teaching Unit	37 17 72	
Purchase of Infant Foods	154 4 41	
Uniforms	219 11 63	
Transport		
Locomotion	454 5 10	
Other Transport	1,153 5 73	
Establishment Expenses		
Printing, Stationery and Advertising ...	163 6 24	
Telephone	137 5 83	
Insurances	5 6 00	
Miscellaneous		
Christmas Parties	50 0 00	
Loans Fund Expenses	1 17 24	
Other Expenses	2 16 20	
		6,248 15 96
Loan Charges —		
Principal	101 19 91	
Interest	142 18 62	
		244 18 53
Carried forward		156,666 4 19

INCOME

	£ s. cts.	£ s. cts.
Brought forward		105,579 15 91
Maternity and Child Welfare—(Continued)		
African		
Fees	453 13 50	
Sale of Foods	136 15 81	
Contribution for Medical Examinations ...	80 0 00	
Other Income	24 15 50	
		695 4 81

Carried forward	106,275 0 72

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		156,666 4 19
Lady Grigg Maternity and Training Hospital :		
Employees —		
Salaries	7,238 3 13	
Special Temporary Allowances	189 10 07	
Superannuation Charges	390 7 96	
Provident Fund Contributions	55 1 88	
Passages Reserve Contribution	165 0 00	
Medical Benefits	36 7 89	
Wages etc. — African Nursing Staff ...	1,516 15 00	
Wages etc. — African Domestic Staff ...	1,650 1 78	
Passages — New Appointments	103 3 58	
		11,344 11 29
Running Expenses —		
PREMISES		
Maintenance of Buildings	257 3 35	
Alterations to Buildings	773 14 06	
Maintenance of Furniture etc.	169 19 17	
New Furniture and Fittings	149 8 41	
Maintenance of Grounds	471 8 16	
Electricity and Fuel	1,415 4 01	
Water and Conservancy	692 11 55	
Cleaning Materials etc.	567 1 04	
Rents	65 0 00	
Renewals Reserve Contribution ...	500 0 00	
Supplies, Equipment etc.		
Maintenance of Equipment	128 14 29	
New Equipment etc.	476 9 50	
Linen and Cutlery	405 0 11	
Medical Stores	1,646 8 49	
Provisions	2,674 8 92	
Uniforms	349 4 59	
Transport		
Locomotion	52 3 33	
Other Transport	886 17 05	
Establishment Expenses		
Printing, Stationery and Advertising ...	205 6 05	
Telephone	116 14 81	
Insurances	12 15 80	
Miscellaneous		
Consultants and Anaesthetists Fees ...	276 3 00	
Recreation and English Tuition ...	62 16 70	
Loans Fund Expenses	24 4 68	
Other Expenses	5 3 60	
		12,384 0 67
Loan Charges —		
Principal	1,262 11 82	
Interest	1,207 5 17	
		2,469 16 99
Revenue Contributions to Capital Outlay —		
Sisters' Mess Extension	714 17 71	
Staff House	5,000 0 00	
Ante Natal Clinic	500 0 00	
		6,214 17 71
Carried forward		189,079 10 85

INCOME

	£ s. cts.	£ s. cts.
Brought forward		106,275 0 72
Lady Grigg Maternity and Training Hospital :		
Fees	3,638 7 70	
Rent — V.D. Clinic	360 0 00	
		3,998 7 70

Carried forward	110,273 8 42

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		189,079 10 85
Ambulance Service :		
General		
EMPLOYEES —		
Wages etc. — Drivers		537 11 32
Running Expenses —		
Equipment	6 16 92	
Uniforms	17 12 80	
Transport	46 11 91	
Renewals Reserve Contribution	200 0 00	
		271 1 63
African Estates :		
EMPLOYEES —		
Wages etc. — Drivers	603 10 40	
Running Expenses —		
Transport	638 1 38	
Equipment	172 11 08	
Renewals Reserve Contribution ...	200 0 00	
		1,614 2 86
Anti-Malarial Works :		
Construction of Drains (see opposite)		
Payments to Contractors		3,860 12 78
Maintenance of Drains :		
EMPLOYEES —		
Wages etc. — Artisans	311 14 35	
Wages etc. — African Staff	305 15 50	
Stores and Materials	195 3 88	
Transport and Plant	198 6 56	
Charges — Other Departments	16 0 07	
		1,027 0 36
Cleaning of Drains :		
EMPLOYEES —		
Wages etc. — Artisans	3 5 20	
Wages etc. — African Staff	2,390 1 73	
Stores and Materials	151 5 74	
Transport and Plant	929 15 09	
		3,474 7 76
Carried forward		199,864 7 56

INCOME

	£ s. cts.	£ s. cts.
Brought forward		110,273 8 42
Ambulance Service :		
Hire Charges		387 12 00

Construction of Drains

	£ s. cts.
Ainsworth Street	1,597 12 88
Balmoral Road	87 19 03
Gelai Gardens	946 18 00
Hurlingham Road	46 8 95
Upper Hill Road	60 18 09
L.R. 37	787 3 33
Woodley Estate	333 12 50
	3,860 12 78

Carried forward	110,661 0 42

EXPENDITURE

	£ s. cts.	£ s. cts.
Brought forward		199,864 7 56
Funerals, Cemeteries and Mortuary :		
Funerals :		
EMPLOYEES —		
Funerals Overseer, Salary etc.	307 17 09	
Allowances to Staff	720 10 00	
Running Expenses —		
Water and Conservancy	6 12 00	
Cost of Coffins	3,303 2 61	
Lettering Plates	107 10 00	
Transport		
Locomotion	80 3 55	
Hearse — Running Expenses	123 11 36	
Hearse — Renewals Contribution ...	200 0 00	
Telephones	54 5 74	
Central Establishment Charges ...	690 0 00	
		5,593 12 35
Cemeteries :		
EMPLOYEES —		
Wages etc. — African Staff	971 2 32	
Running Expenses —		
GROUNDS		
Maintenance of Graves and Memorials ...	17 19 63	
Grave Numbering	4 1 50	
Special Work (see opposite)	356 19 74	
Water and Conservancy	48 2 42	
Supplies, Equipment etc.		
Stores	1 9 40	
Establishment and Other Expenses		
Insurances	22 2 00	
Central Establishment Charges ...	180 0 00	
Loans Fund Expenses	7 35	
		1,602 4 36
Loan Charges —		
Principal	7 9 35	
Interest	12 2 48	
		19 11 83
Revenue Contributions to Capital Outlay —		
New Cemetery — Langata		2,000 0 00
Mortuary :		
Revenue Contribution to Capital Outlay ...		10,000 0 00
TOTAL		219,079 16 10

INCOME

	£ s. cts.	£ s. cts.
Brought forward		110,661 0 42
Funerals, Cemeteries and Mortuary:		
Funeral Charges	10,182 12 22	
Other Income	48 0 00	
		10,230 12 22

Details of Special Work	£ s. cts.
Forest Road Cemetery —	
Boundary Wall	332 4 04
Development of Cemeteries ...	24 15 70
	£ 356 19 74

TOTAL	120,891 12 64

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