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UGANDA PROTECTORATE

ANNUAL REPORT

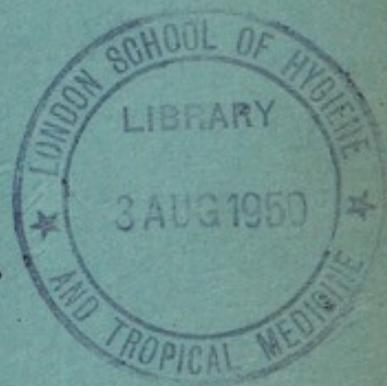
OF THE

Medical Department

FOR THE

Year ended 31st December, 1948

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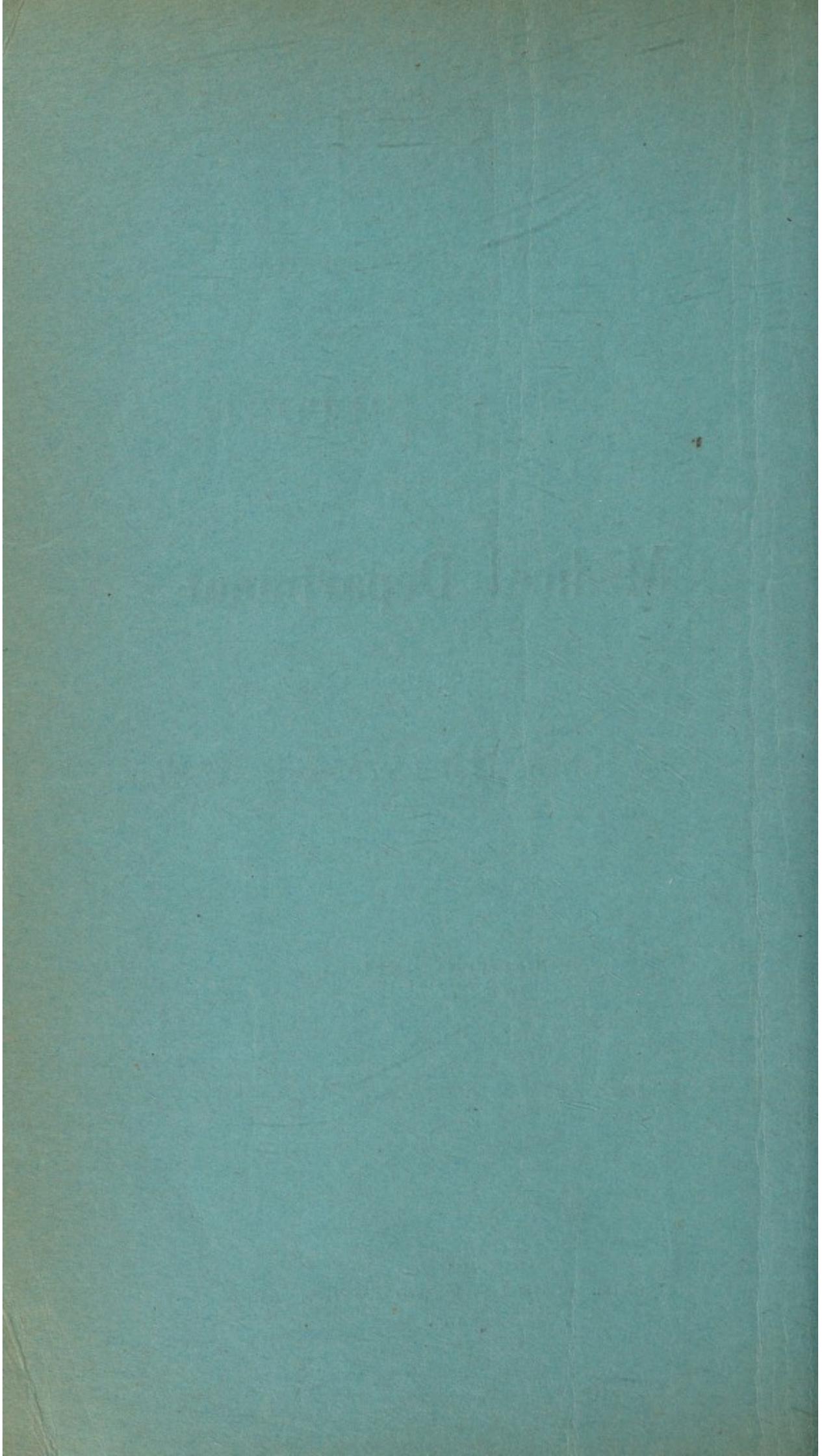


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LIST OF CONTENTS

	<i>Page</i>
MAP OF THE UGANDA PROTECTORATE.	9
SECTION I.—ADMINISTRATION	1
SECTION II.—PUBLIC HEALTH:—	
I. Communicable Diseases	9
(a) Insect-borne	9
(b) Infectious Diseases	12
(c) Helminthic Diseases	18
II. Vital Statistics	19
European Officials	22
European Non-officials	23
Asian Officials	23
Asian Non-officials	24
African Officials	25
SECTION III.—HYGIENE AND SANITATION:—	
A. General Review of Work done and Progress made—	
(I) Preventive Measures—	
(a) Insect-borne Diseases	25
(b) Infectious Diseases	28
(c) Helminthic Diseases	29
(II) General Measures of Sanitation	29
(III) School Hygiene	30
(IV) Labour Conditions	31
(V) Housing and Town Planning	32
(VI) Food in Relation to Health and Disease	33
B. Measures taken to spread the knowledge of Hygiene and Sanitation	34
SECTION IV.—PORT HEALTH WORK AND ADMINISTRATION	34
SECTION V.—MATERNITY AND CHILD WELFARE	35
SECTION VI.—HOSPITALS AND DISPENSARIES	38
Report of the Dental Division	43
SECTION VIA.—Training of subordinate personnel	44
SECTION VII.—PRISONS	47
SECTION VIII.—PROTECTORATE MENTAL HOSPITAL	48
SECTION IX.—SCIENTIFIC	
Report of the Senior Pathologist	49
Report of the Government Chemist	53
Report of the Entomological Division	54
Report of the Radiological Division	55
Report of the Pharmaceutical Division and Medical Store	55
Scientific Papers Published	56

Appendices

	<i>Page</i>
I. Report on the Uganda Medical School	57
II. Staff	58
III. List of Ordinances affecting Public Health, etc., enacted during the year	59
IV. Sanctioned Establishment	60
V. Financial	61
VI. Return of Diseases and Deaths	62



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MEDICAL DEPARTMENT

ANNUAL REPORT

For the year ended 31st December, 1948

SECTION I.—ADMINISTRATION

Staff

Throughout 1948 practically every branch of the Department's activities was seriously affected by inability to recruit sufficient European professional and technical staff, particularly medical officers, health inspectors and nursing sisters. There were 13 vacancies for medical officers at the commencement of the year, and only four of these were filled during 1948, two by transfers from other territories. By the end of the year there were vacancies for 9 European medical officers and a pathologist; two posts for Asian medical officers were also unfilled. The staff situation was almost as acute in most other divisions of the European Establishment. As a result of these shortages a heavy strain was thrown on the existing staff and in order to maintain essential services it was necessary to prolong the tours of service of a number of medical officers.

The most important events at Medical Headquarters were the filling of vacancies for the posts of Deputy Director and Chief Matron. In May a Senior Medical Officer was seconded for duty with the Labour Department; the need for this step had long been recognised. A Medical Officer in the Protectorate service was appointed to one of the two vacant posts of Pathologist. Another Medical Officer acted as Anaesthetist, the substantive post of which remained vacant throughout the year. An Alienist was appointed but had not arrived in the Protectorate by the end of the year.

Two Districts, Hoima and Mubende, normally staffed by European Medical Officers, were supervised throughout the year by a Sub-assistant Surgeon and an Assistant Medical Officer respectively.

2. Distinguished Visitors

Three members of the Nuffield Foundation Panel of Medical Visitors visited the Protectorate during the year, namely Professor T. H. Davey, Dr. G. L. M. McElligott and Professor A. A. Moncrieff, authorities on tropical hygiene, venereology, and child health respectively.

Dr. B. de Meillon of the Entomological Division of the South African Institute of Medical Research paid a visit to the Protectorate in order to examine the distribution of *Simulium* in parts of the Eastern and Western Provinces where onchocerciasis is prevalent.

Dr. F. W. P. Cluver, Director of the same Institute, visited Uganda to study yellow fever research work and anti-malarial measures.

Miss F. M. Udell, Chief Nursing Officer, Colonial Office, spent 18 days in Uganda studying the nursing activities of the Department.

Dr. W. Santon Gilmour, Medical Superintendent, Killingbeck Sanatorium, Leeds arrived in December to carry out a tuberculosis survey of the

Protectorate. His investigations were still in progress by the end of the year.

3. Refugees

The repatriation of a large number of Polish refugees from the Protectorate led to the closing down of the camp at Nyabyeya in Bunyoro, but the settlement at Koja in Mengo District was maintained and had a resident population of 1,250 at the end of the year. The provision of medical attention and the maintenance of the hygiene and sanitation of the camp are largely the responsibility of the refugees themselves, general supervision being exercised by staff of this Department. The number of beds maintained at the Koja Settlement Hospital was reduced from 128 to 60. The health of the refugees has been good and no outbreak of infectious disease was reported.

The temporary wooden buildings which form an annexe of the European Hospital, Kampala, for the accommodation of sick refugees are still in use, but the reduction in the number of patients requiring admission to hospital has made it possible to close down about one-third of the accommodation. At the end of the year 22 beds were kept available, slightly under one-half of which were, on the average, in daily occupation. The staff employed consisted of locally trained Polish nurses.

4. Housing

Impressive progress was made by the Public Works Department in implementing its programme for the housing of Government officials. Building construction was particularly active in Kampala where the programme included the erection of blocks of flats, four of which were completed during the year. These have proved extremely popular.

Overcrowding of the poorer sections of the Asian population within and around the major townships has assumed serious proportions, especially at Kampala and Jinja. It seems clear that the rate of building development, hampered by shortage of skilled artisans and of materials, is unable to keep pace with the increase of population. Another adverse factor is the prevailing high cost of building.

Of no less urgency than the Asian housing problem is the condition of the overcrowded African population in the environs of Kampala and to a growing extent in those of other major townships. The situation will be eased to some extent by the implementation of plans for Government housing schemes at Kampala, Jinja, Gulu and elsewhere. The Nagurru and Nakawa Scheme (Kampala) will cover 80 acres of land and provide some 800 dwellings suitable for the requirements of all classes of Africans, including itinerant labourers. At the end of the year a limited start had been made on the Nagurru Scheme, the object being to test the public demand for different types of house. Rentals will necessarily be sub-economic.

In rural areas, health inspectors and hygiene orderlies spent much of their time in attempting to improve housing standards by persuasion rather than by compulsion, by aiming at modest improvements within the

understanding and financial resources of the peasant rather than by insistence on the ideal, and by personal contact rather than by mass propaganda. By this approach, progress is steady, although not spectacular.

5. Nutrition

Under a scheme financed from Colonial Development and Welfare funds and directed by Professor E. Holmes of Makerere College, research has been continued on the pathology and etiology of kwashiorkor and of the anaemias commonly met with among Africans admitted to Mulago Hospital. Medical staff at Mulago and the Medical Laboratory, Kampala, have collaborated in this work.

Supplementary feeding experiments on African school children and prisoners at Luzira Jail were carried out during the year. These consisted of an investigation by the Senior Medical Officer (Health), Kampala, of the effect upon the nutritional state produced by a daily issue of food yeast as a supplement to the normal diet. Up to the end of the year the investigation had been in process for three months only and conclusive results had not by then been obtained.

The African Garden Restaurant and Beer Garden in Kampala continued to attract large numbers of Africans. Meals are offered at reasonable prices, but these prices are not yet sufficiently attractive to enable the lowest paid workers to take as full advantage of the scheme as could be desired.

Talks on diet in relation to health and on the elementary principles of nutrition were given during the year by members of the Department at senior schools and at the Chiefs' course at Bukalasa.

6. Disposal of Domestic Waste

An increase in the supply of domestic refuse containers during the year resulted in an improvement in the cleanliness of many townships.

Controlled dumping is the method of disposal most commonly adopted. It is a useful method because it affords an economical means of filling the innumerable borrow pits created by past construction works in townships and is thus a valuable means of mosquito control. The manufacture of compost from domestic refuse inaugurated in Kampala in 1943 continues to be a great success and approximately 2,766 tons of finished compost were produced in 1948. Some difficulty was experienced in disposing of the product since, during the year under review, it was no longer supplied free of charge to African cultivators as was hitherto practised and the supply always exceeded the demand. Compost manufacturer has now been adopted in Entebbe, where the bulk of it is purchased by residents of the township.

In Kampala nearly two miles of storm sewers and over one and a half miles of soil water sewers were laid. In the larger townships where adequate piped water supplies and suitable local drainage conditions exist, many septic tank systems were installed. But the bucket system of soil disposal is perforce the method adopted generally in all townships outside

Kampala and Entebbe, the final disposal being by shallow trenching. The system works well enough, but close supervision of disposal is essential.

7. Water Supplies

Piped water supplies are now available in many of the larger townships and plans are being made for their installation in townships where they do not exist. Water supply schemes were completed at Fort Portal, Hoima and Kabale, and the existing supply at Gulu was augmented. At Masaka and Mbarara work was in progress which will provide these townships with purified piped supplies from the Nabajuzi and Ruizi Rivers respectively.

The pumping plant at Gaba which provides Kampala with its water was working to utmost capacity, giving a delivery rate of 850,000 gallons of water daily. A continuous service was maintained throughout the year by increasing the pumping capacity of the plant and by cutting off a large number of stand pipes in the yards of dwellings which were a constant source of wastage.

The growth of population in other townships provided with piped supplies has likewise resulted in an increase of water consumption, but in every case adequate supplies were maintained. At Jinja work was commenced which, when completed, will increase the pumping capacity of the plant by nearly one-half.

Encouraging progress was made in the construction and maintenance of protected seepage springs in rural areas, particularly in Mengo District. Many new bore-holes were constructed by the Geological Survey Department, the programme including Bukalasa and Serere Agricultural Stations and Ongino Leper Settlement.

Samples of domestic water supplies from various sources were submitted periodically for bacteriological examination at the Department's laboratory in Kampala.

8. School Hygiene

Owing to the shortage of professional staff it has not yet been possible to inaugurate a Protectorate-wide school medical service.

All children attending the Government European School in Kampala have been subject to regular medical inspection and supervision since 1945, but with the appointment of a lady medical officer to Kampala in the latter half of 1948 it became possible to extend this service to the children of all communities attending schools in the Township. By the end of the year 2,986 children (1,904 boys and 1,082 girls) had been fully examined, and a series of detailed and informative reports had been submitted. In addition, a small tuberculin test survey was undertaken in some of the African and Asian schools in Kampala and a report submitted. The results of these investigations are summarised and discussed in Sections III (iii) and II (i) (b).

Elsewhere than in Kampala the medical examination of pupils was limited to routine inspections at certain schools.

In most Districts a high proportion of school premises were inspected and defects in sanitary conditions brought to the notice of the authorities concerned.

The majority of primary and secondary schools in the Protectorate now approach conformity with the requirements of the Public Health (School Buildings) Rules, 1944; but overcrowding is reported from several Districts where the construction of new buildings is barely able to keep pace with the growing demand for education. In the case of many of the small village schools unsupported by Government grants the position was less satisfactory, although even here a measure of progress is reported.

African assistant health inspectors are playing an increasing part in the regular inspection of rural school premises. During these inspections opportunity was frequently taken to give talks on a variety of health subjects to assembled pupils and teachers. This development enables departmental activities and services to be publicised among a section of the community which is particularly receptive to new ideas. It also gives teachers and pupils the opportunity of discussing health matters on a practical plane with officers who are actively employed in health work, thereby introducing that element of reality into school health education which is frequently lacking.

9. Labour

In June a senior medical officer was seconded to the Labour Department to advise the Commissioner on all matters relating to the health of labour. Much valuable preliminary work was undertaken on the investigation of a variety of problems bearing on this subject. Special attention was given to the housing and welfare arrangements provided and projected for immigrant labourers on the migration routes traversed by natives of Tanganyika Territory and Ruanda-Urundi in search of employment in the settled areas of Uganda. The medical aspects of this problem assume special significance when it is appreciated that a high proportion of the migrating population, emerging from the relatively sheltered conditions of a traditional tribal existence, become exposed to the stresses and strains of an economic system of which they have had no previous experience. It is apparent too, that much investigation is required into the socio-anthropological origins and effects of this migration, since health problems cannot be studied properly without knowledge of the social factors which influence them.

In November a conference was held at Kisenyi in Ruanda, where the Belgian authorities discussed with the Labour Commissioners of Uganda and Tanganyika Territory problems associated with the migration of Ruanda-Urundi labour; these included the prevention of the introduction of sleeping sickness into Uganda, the repatriation of incurables and the provision of medical facilities on the migration routes.

A detailed survey of health conditions on the labour route from the West Nile was under consideration but had not been undertaken by the end of the year.

Partly as a result of increasing pressure exercised by the Labour Department, and perhaps equally by reason of a growing appreciation of the economic value of a healthy labour force, many employers introduced

improvements in housing and sanitary standards and in the provision of medical facilities for labour. This was specially evident on the larger estates. But an unduly high proportion of the smaller undertakings are still backward in these respects. Nevertheless, definite progress in the required direction is evident.

A few cases suspected to be silicosis came under observation towards the end of the year in African labourers who had worked underground in a tin mine in Ankole. Investigation of such cases is hampered by the fact that the nearest radiological facilities are in Kampala, over 200 miles distant from the mine. The diagnosis of silicosis has now been confirmed.

No outbreaks of major infectious disease among estate employees were reported during the year, but the prevailing standard of health of temporarily employed immigrant labourers, notably those from Ruanda-Urundi was, as always, low. Malaria, helminthic infestation, anaemia, dysentery, respiratory disease and nutritional disorders are prevalent and are responsible for much of the debility and low standard of efficiency so commonly met with among this class of labour, and especially among recent arrivals.

10. Communicable Diseases

No epidemics of major communicable disease occurred during the year. In comparison with 1947, notifications of cerebro-spinal meningitis declined from 2,360 to 594, sleeping sickness from 107 to 54 and smallpox from 388 to 192. A noteworthy feature was the absence of any recorded case of plague for the first time since 1905. There were significant increases in notifications of typhoid fever and endemic typhus, particularly from localities in the vicinity of Kampala. Bacteriological evidence suggested that the great majority of the typhus infections were of the murine (flea-borne) type, but efforts to isolate and identify the virus have not yet been successful.

The Inter-territorial Leprologist completed a Protectorate-wide survey of the incidence of leprosy during the year, and a comprehensive report was submitted. Of an estimated total of upwards of 100,000 cases of this disease in the Protectorate, only about 3,000 were under treatment at existing leprosy institutions. Among recommendations which were made and accepted was the organisation of systematic out-patient treatment of leprosy cases at Government Hospitals and dispensaries, associated with appropriate propaganda measures.

In December a specialist on tuberculosis visited Uganda to conduct a survey of the incidence of tuberculous infection in the Protectorate by means of mass tuberculin testing. The survey was still in progress by the end of the year. A local investigation of a similar nature was undertaken by a medical officer of the Health Office, Kampala, and a valuable report submitted.

11. Maternity and Child Welfare

Of the steadily growing popularity of the maternity service provided both by Government and by the Missions there is no doubt. A striking

illustration of this is afforded by a comparison of maternity institutional records for 1938 with those for 1948.

In 1938 37.5% of all women in the Protectorate who became pregnant attended a Government or a Mission centre for ante-natal care; in 1948 this percentage had increased to 71.7 (the number of expectant mothers attending Government institutions increased more than three-fold). In 1938, 6.1% of all live births in the Protectorate took place in Government or Mission institutions; in 1948 the percentage was 14.6. In Buganda Kingdom alone, 38.5% of all women who gave birth to a live child in 1948 were delivered in an institution while the corresponding figures for the Eastern Province were 15.8, the Western Province 7.1 and the Northern Province 2.0.

Associated with the expansion of maternity services during recent years has been a progressive decline in the recorded maternal mortality rate, from 10.64 per thousand births in 1938 to 4.74 in 1948. This decline has been very steady throughout the decennial period and cannot in consequence be attributed to errors of registration. Whilst this notable decline may be partly the result of a general rise in social and economic standards it is difficult to avoid the conclusion that the expansion of and growing public confidence in the maternity services provided by the Government and the Missions have been mainly responsible.

The foundations of an efficient maternity service are efficient ante- and post-natal care whereby abnormalities may be detected and dealt with before emergencies arise and expectant mothers may be taught the elements maternal hygiene. This aspect of maternity work offers abundant scope for development and is likely to be reflected in further reductions in the maternal mortality rate. It may necessitate some re-orientation of the relative emphasis to be placed on ante- and post-natal care on the one hand and on institutional provision for normal confinements on the other, and in the training of midwives, greater attention will have to be given not only to the medical, but to the educational aspects of ante-natal and post-natal care.

Little real progress has yet been made in promoting the popularity of child welfare clinics except in the immediate post-natal phase. It is only the more advanced members of the community who appreciate the need to attend clinics with their infants for regular medical supervision and health advice; the great majority do not attend unless the child is actually ill.

12. Medical Education

The expansion of the medical and health services depends upon an increasing output of trained Africans and the training of subordinate African staff at the four Training Centres, viz. Masaka, Mulago, Mbale and Lira, has become one of the most important functions of the Department. The training of midwives is still undertaken exclusively by the Church Missionary Society and the Franciscan Sisters at Mengo and Nsambya Hospitals respectively. For this work the Missions receive block grants from Government. In addition they also receive capitation

fees in respect of nurses trained by them who enter Government service, although the majority of Government employed nurses are trained at the Nurses Training School, Mulago.

The Mulago Medical School is now an integral part of Makerere College, but the clinical teaching continues to be undertaken by officers of the Medical Department.

During 1948, training courses were continued at Mulago Hospital for medical assistants and female nurses. These followed the lines of previous years, except that the first year course for medical assistants was discontinued as the initial step towards using the Masaka Centre exclusively for the training of medical assistants and Mulago for the training of female nurses.

13. Legislation

No legislation directly affecting the Medical Department was introduced during 1948. Attention was given to the revision of the Public Health (Drainage and Sanitation) Rules and the preparation of Rules for regulating the slaughter and distribution of meat.

SECTION II.—PUBLIC HEALTH

I. Communicable Diseases

(a) INSECT-BORNE DISEASES

14. Malaria

Malaria continues to show the highest incidence of all diseases. 101,899 cases with 320 deaths were reported throughout the Protectorate during 1948, compared with 105,751 cases and 261 deaths in the previous year. 11,204 cases were treated as in-patients. 4,868 cases were diagnosed as subtertian, 241 as quartan and 212 as benign tertian malaria.

The following table compares the incidence of malaria in districts where it is particularly prevalent:—

TABLE 1.

<i>Station.</i>	<i>Total cases reported</i>	<i>Station.</i>	<i>Total cases reported.</i>
Kampala ...	5,868	Lira ...	2,769
Masaka ...	6,480	Gulu ...	4,992
Mbarara ...	4,670	Masindi ...	2,806
Jinja ...	6,870	Arua ...	5,451
Tororo ...	4,962	Mbale ...	7,001
Soroti ...	4,788		

The distribution by Provinces for the past two years was as follows:—

TABLE 2.

Year	Buganda Province		Eastern Province		Western Province		Northern Province	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1947 ...	26,533	78	41,987	90	16,240	46	20,991	47
1948 ...	26,071	92	43,590	145	14,125	34	18,103	49

15. Blackwater Fever

Seventy cases with 11 deaths were reported. The incidence according to race and sex was:—

TABLE 3.

Race	Males		Females	
	Cases	Deaths	Cases	Deaths
Europeans ...	2	1	1	...
Asians ...	33	...	24	6
Africans ...	7	2	3	2
TOTAL ...	42	3	28	8

No fewer than 32 of the 57 Asian cases occurred in children or adolescents.

The number of cases, deaths and case mortality for the last 5 years (Africans excluded) were as follows:—

TABLE 4.

Year	No. of Cases	No. of Deaths	Case Mortality per cent.
1944	187	40	20·9
1945	104	26	25·0
1946	95	14	14·0
1947	78	12	15·4
1948	70	11	15·7

16. Trypanosomiasis

The record low total of 54 new cases of trypanosomiasis notified in 1948 is noteworthy. It is also gratifying to record that every infected area in the Protectorate showed a reduction in the number of cases.

One-third of the total new cases were reported from Toro District, where it is suspected that infection was being acquired in Busongoro County outside the scheduled Sleeping Sickness area.

Only 12 new cases were recorded from the Eastern Province, and none from the island of Buvuma, where a sharp epidemic occurred in 1942/43. It was established beyond reasonable doubt that three cases of *T. rhodesiense* sleeping sickness, discovered among immigrants, were infected before they entered the Protectorate.

The following table shows the recorded incidence of the disease with the number of deaths during the past 5 years:—

TABLE 5.

Year	New Cases	Reported Deaths
1944	367	37
1945	317	12
1946	214	10
1947	107	3
1948	54	2

The distribution of cases by Districts was as follows:—

TABLE 6.

District	1944	1945	1946	1947	1948
West Nile	148	107	103	24	9
Acholi ... ..	...	103	12	15	5
Toro ... ..	...	...	31	33	18
Busoga	50	45	29	14	7
Mengo	50	1	15	6	2
Mbale	50	20	2	11	5
Lango ... ..	...	28	7	4	3
Teso ... ..	...	1	15	0	0
Other districts ...	69	12	0	0	5
TOTAL	367	317	214	107	54

17. Relapsing Fever

This disease also showed a reduction in incidence during the year under review, a total of 534 cases with 8 deaths being reported during 1948, compared with 664 cases in 1947.

As in previous years the majority of cases (289 with 5 deaths) were reported from Ankole District, where the disease has been endemic for many years. It is interesting to note that for a whole decade prior to 1947 the incidence of relapsing fever in Ankole showed a progressive annual increase reaching a peak in 1946 with a total of 892 cases. In the succeeding two years there occurred a marked decline in incidence, 343 cases being recorded in 1947 and 289 in 1948. No reasons can be offered for such a marked reduction; the future trend will be watched with interest. From Masaka, 161 cases were reported.

The following table shows the recorded incidence of cases of relapsing fever treated at hospitals during the last 5 years:—

TABLE 7.

Unit	1944	1945	1946	1947	1948
Ankole	723	835	892	343	289
Masaka	236	281	381	167	161
Mulago	51	76	25	50	6
Toro	31	33	21	27	22
Kigezi	37	43	24	39	37
Others	74	89	27	28	19
TOTALS	1,152	1,357	1,370	654	534

18. Plague

A notable event was the absence of any recorded cases of plague for the first time since 1905. The notified annual incidence of cases during the decade 1939–1948 is as follows:—

TABLE 8.

Year	Cases	Year	Cases
1939	599	1944	28
1940	516	1945	20
1941	495	1946	12
1942	697	1947	1
1943	19	1948	Nil

It will be observed that there was a striking reduction in incidence in 1943 followed by a further sudden decline in 1947. Biological factors of which we have no knowledge may well be mainly responsible for this phenomenon, and the primitive standards of housing and sanitation among the general mass of the native population give no cause for complacency. It is therefore still necessary to continue to exercise the utmost vigilance in this connection.

19. Typhus

The number of cases of typhus known to have occurred in 1948 was more than double that in the previous year, viz. 69 compared with 32. The special laboratory facilities required for the accurate diagnosis of this disease no doubt partly explains why all but four cases were reported from Kampala. Nevertheless, the incidence of typhus was undoubtedly high in the neighbourhood of Kampala during 1948, and serological findings suggest that infection was predominantly of the murine (flea-borne) type. It seemed likely that a few cases were of tick-borne origin, but there is no evidence, clinical or epidemiological, that the louse was in any way concerned in the transmission of the disease.

Six cases of typhus in Europeans were reported.

(b) INFECTIOUS DISEASES.

20. Small-pox

In comparison with 1947, the notifications for small pox declined from 389 to 192, deaths in each year being 5. The disease was again more prevalent in the eastern areas of the Protectorate, 104 cases occurring in Mbale, 58 in Lango and 22 in Busoga. The infection continued to be mild in type and in many instances difficulty was experienced in differentiating it from chicken pox. In a small outbreak in Mbale District near the Kenya border a few cases were reported to be of the confluent type, but it has not been established that they were variola major.

21. Cerebro-spinal Meningitis

A total of 594 cases with 159 deaths occurred in 1948 compared with 2,630 and 505 deaths in the previous year. An outbreak which spread throughout Mbale District accounted for 265 of the cases.

The extensive outbreaks which occurred in Teso and the West Nile in 1946 and continued during 1947 subsided in the year under review, only 96 cases from Teso and 62 from the West Nile being notified. Sporadic cases continued to occur in most areas of the Protectorate.

Notifications, deaths and case mortality during the past 5 years are as follows:—

TABLE 9.

Year	Notifications	Deaths	Case Mortality
1944	1,850	217	11·73
1945	2,842	350	12·32
1946	6,348	684	10·77
1947	2,630	505	19·12
1948	594	159	26·76

The rise in the mortality rate is as striking as the decline in the number of notifications, and cannot be explained.

22. Acute Poliomyelitis

A considerable rise in the incidence of this disease during the year is reported, but in no instance can it be said to have reached epidemic proportions.

Of the total of 82 cases notified from all parts of the Protectorate, no fewer than 27 occurred in the West Nile District. In Mengo District 32 cases were notified, 11 of which were from Kampala.

There were 4 deaths.

23. Tuberculosis

794 cases of pulmonary tuberculosis and 127 of other forms of the disease attended Government hospitals during the year. Of these, 415 cases of pulmonary disease and 104 cases of other forms of tubercular disease were treated as in-patients, deaths being 116 and 41 respectively. The disease is especially prevalent amongst recently-arrived immigrant labour from Ruanda-Urundi, who appear to be much more prone to progressive tuberculosis than those who are settled in the Protectorate.

A tuberculin survey was carried out by a medical officer among a limited sample of African and Asian school children in Kampala. It was found that African children gave a positive reaction in far greater numbers than was expected, viz. 42% compared with 24% among the Asian children. It was also found that African children became positive at a much later age than was the case with Asian children.

Dr. W. Santon Gilmour's preliminary tuberculosis survey has already been referred to in Section I.

At Mbarara it was reported that 53.4% of 249 cattle examined post-mortem at the abattoir in 1948 were infected with tuberculosis.

24. Typhoid and Paratyphoid Fevers

A total of 359 cases and 58 deaths were notified during the year, compared with 236 cases and 44 deaths in the previous year.

The uncontrolled growth of population around the larger townships has produced conditions conducive to the spread of enteric disease, and it is in these areas, particularly around Kampala, that the highest incidence occurs.

In Mengo District the number of reported cases in 1948 was almost double the reported incidence in 1947—188 compared with 95—the peak incidence occurring during the rainy seasons. The majority acquired their infection in the densely populated areas within a ten-mile radius of Kampala, an occasional spread occurring into the rural areas beyond this limit. The chief source of infection was not definitely determined, and it is thought that a combination of factors may have been responsible. Though it is likely that contaminated surface springs and wells were sources of infection in many instances, defective refuse and sewage disposal and the insanitary habits of healthy carriers are probably equally implicated; the possible part played by native beer prepared from infected water is under investigation.

Twenty-two cases of typhoid occurred in the environs of Entebbe and in the vicinity of Kisubi.

Seven cases were reported from within Kampala, but in every instance it appeared that infection was contracted outside the township area.

In Mbale District, 72 cases were reported; these included a number of Indians.

An outbreak at Kitabi Seminary in Ankole affected no fewer than 37 of the 80 scholars, one case ending fatally.

25. Venereal Diseases

The steady increase in the number of patients treated for these diseases in the past 5 years is shown in Table 10. It is possible that the prospects of rapid cure by the use of penicillin and sulpha drugs may be partly responsible for the increased attendances; but there is a prevailing impression, as yet unsupported by statistical evidence, that these diseases are actually on the increase in all Districts.

TABLE 10.

Year	Syphilis	Gonorrhoea
1944...	24,021	10,526
1945...	31,549	14,936
1946...	39,444	20,098
1947...	45,444	30,111
1948...	47,854	33,160

The distribution of cases by Provinces during the year is shown in Table 11.

TABLE 11.

	Buganda	Western	Northern	Eastern
Syphilis ...	17,298	3,503	1,788	25,265
Gonorrhoea ...	11,458	3,290	1,697	16,715

In the treatment of syphilis it is still a rarity for Africans suffering from the disease to submit themselves to the full courses of treatment required for a complete cure. It is becoming increasingly realised that medical measures alone are unlikely to make any significant inroads into the prevalence either of syphilis or gonorrhoea in the present stage of development of African society.

26. Yaws

A slight reduction in the incidence of this disease was recorded during the year: 35,913 cases attended Government hospitals in 1948, compared with 37,803 in the previous year.

Arrangements were completed by the end of the year for the institution of an intensive campaign against the disease in Lango District, where it is particularly prevalent. It was agreed that one-half of the expenses incidental to the campaign would be met by the Protectorate Government and one-half by the Lango Native Administration, subject to a maximum contribution of £6,500 by the latter.

27. Leprosy

In view of the increasing attention now being given to leprosy problems

a brief outline of the present organisation and administration of leprosy control in the Protectorate may be of interest.

Of the five residential institutions for the care and treatment of leprosy cases, three—at Kumi and Ongino in Teso and at Lake Bunyoni in Kigezi—are controlled by the Church Missionary Society; and two—at Nyenga in Mengo and at Namagera in Busoga—by the Roman Catholic Franciscan Mission. These institutions derive their income partly from Mission sources, partly from grants by the Protectorate Government and some of the Native Administrations and partly from the B.E.L.R.A. A measure of general control is exercised by the Uganda Branch Committee of B.E.L.R.A. which disburses the Government and B.E.L.R.A. grants. The Branch Committee is representative of the Missions, Government, and the Native Administrations.

In 1948 the total Protectorate grant amounted to £4,500 for capital development (chiefly buildings) and £1,000 for maintenance. In addition, this Department supplied drugs for the treatment of leprosy free of charge to all institutions. The B.E.L.R.A. grant was £400.

Facilities are available at all Government medical centres for the out-patient treatment of leprosy, and in 1948 a total of 576 patients attended. This is a very small proportion of the estimated number of persons suffering from active leprosy in the Protectorate, the popularity of out-patient treatment being adversely affected by the long and regular courses required to produce any improvement in the clinical condition.

During the year the Inter-territorial Leprologist conducted a general survey of the prevalence of leprosy in Uganda and submitted a valuable report with comprehensive recommendations for the control of the disease. It was estimated that there were upwards of 100,000 cases of active leprosy in the Protectorate of whom only about 3,000 were receiving regular treatment at leprosy institutions. The number of infective cases was probably of the order of 20,000. No tribes were found to be exempt, but the distribution of cases is uneven, the prevalence being greater in the western parts of Uganda than in the east. Its incidence ranges from 118 per 1,000 of the population in Bunyoro, Toro and the West Nile to 6 per 1,000 in the Mengo-Masaka area. Among recommendations which were made and accepted were (a) the establishment of a new leprosy residential institution in the western part of Uganda (b) financial assistance by Government towards the whole-time appointment of doctors to Mission institutions (c) the distribution of the new drug sulphetrone at Government expense to all leprosy institutions in charge of a doctor (d) the development of systematic out-patient treatment of leprosy at Government hospitals and dispensaries, with appropriate publicity measures and (e) the appointment of a Government Leprologist who will be responsible for the organisation, co-ordination and supervision of leprosy control and treatment throughout the Protectorate.

REPORTS ON MISSION SETTLEMENTS

St. Francis' Leper Settlement, Namagera, Busoga.

The work of this settlement has continued to make good progress, treat-

ment being supervised by a visiting Mission doctor. Statistics relating to the Colony are as follows:—

Number resident at end of 1947	...	...	288
Number admitted during 1948	...	...	68
Number of births during 1948	...	...	3
Number of deaths during 1948	...	...	4
Number discharged during 1948	...	...	55
Number remaining at end of 1948	...	...	300
Number of out-patients treated	...	...	247

Thirty patients were selected for sulphetrone treatment and placed under special supervision. The progress of each case was carefully observed both clinically and by laboratory investigations which included urinalysis, blood examinations, skin biopsies, and lepromin tests. Photographic records were also kept. At the end of three months' treatment the patients were examined by the Inter-territorial Leprologist who reported that all but one of the patients had shown improvement.

Towards the end of the year a further 12 patients were selected for trial treatment with sulphetrone. In the forthcoming year it is hoped to extend the treatment to upwards of 100 patients.

The routine treatment of the remainder of the inmates and of all out-patients is with hydnocarpus oil administered intradermally. Large doses of up to 20–30 cc. per injection are well tolerated and give more satisfactory results than the smaller doses previously used.

247 patients were treated as out-patients during the year, but the regular attendance required is impossible to obtain in many cases.

There was considerable building activity in the Settlement during the year, much of it by the lepers themselves. New permanent works included a doctor's house and five houses each intended to accommodate four patients.

A school of semi-permanent construction with five large classrooms and six houses in wattle and daub were completed, the latter for the accommodation of married couples. A permanent building formerly used for lepromatous cases was converted into a clinic.

Brick making is now undertaken on a large scale at the Settlement.

Difficulties were experienced in obtaining sufficient supplies of food for patients in the early months of the year. A tractor was purchased which should help considerably in the cultivation of food crops on a large scale and reduce the cost of upkeep.

The diet is generous and includes matoke or sweet potatoes, maize flour, fresh mixed vegetables, fish (daily) and meat (weekly).

All children of school age attend school daily. There are now two certificated masters and it is hoped shortly to obtain the services of a certificated mistress. Games and outdoor exercises are encouraged. Those who are able do communal work and in certain cases receive payment for their services.

A deficit of Shs. 51,380 on 1st January, 1948, had been reduced to Shs. 39,131 by the end of the year, despite the expansion in the activities of the settlement.

St. Francis' Leper Settlement, Nyenga, Mengo

This is the second of the settlements managed by the Sisters of the Franciscan Order and is also supervised by a mission doctor.

The statistics for the year are as follows:—

Number resident at the end of 1947	...	...	190
Number admitted during 1948	...	...	83
Number of births	...	...	3
Number of deaths	...	...	6
Number discharged or paroled	...	...	69
Number remaining at end of 1948	...	...	201
Number of out-patients	...	...	370

For routine treatment, hydnocarpus oil in large doses is used.

Limited supplies of sulphetrone were received and 11 patients with lepromatous lesions were selected for treatment and kept under special observation as at the Namagera settlement. Laboratory examinations during the year totalled 1,371.

Residential accommodation is so limited that no fewer than 150 cases who sought admission had to be turned away.

A semi-permanent dormitory for lepromatous cases was commenced during the year and is expected to be completed early in 1949.

A Native Administration grant of £105 was made towards the provision of huts for burnt-out cases, but shortage of labour and water prevented a start being made before the end of the year.

Water at this settlement still presents a problem during the drier months of the year, but it is hoped that a solution will shortly be found by the construction of a borehole.

Kumi and Ongino Leper Settlements, Teso (Church Missionary Society)

After many years of devoted service Miss M. Laing, O.B.E., relinquished her duties as Superintendent of these Settlements in April. Towards the end of the year Dr. H. W. Wheate arrived in Uganda and assumed medical charge of both Settlements. The Kumi Leper Home accommodates children up to the age of sixteen years, after which they are transferred to the adult Settlement at Ongino.

A recent analysis of the cases at Kumi revealed that of the 254 young inmates in the Home, 85 were lepromatus, 141 tuberculoid, the remainder being unclassified. Fifty lepromatous cases were selected for sulphetrone treatment, but a start on courses of treatment was not possible before the end of the year. As at the other settlements, the dosage of hydnocarpus oil used in routine treatment was much increased during the year. 1 c.c of oil per 10 lbs. body-weight is administered twice weekly and given by subcutaneous, intramuscular and intradermal routes.

It is reported that over 300 men, women and children who are not themselves suffering from leprosy but who have relatives as a patient-inmates are living at the Ongino colony and that four children, hitherto untainted, have recently contracted the disease. Steps have been taken to persuade most of these people to vacate the Settlement and to leave their relatives in the care of the husband or wife only.

The Public Works Department has installed a bore hole water supply at Ongino and the problem of shortage of water which has been so serious in the past is now solved.

The following is a summary of the statistics of both settlements:—

		Kumi	Ongino
Number resident at the end of 1947	...	343	349
Number admitted during 1948	...	40	90
Number of deaths during 1948	...	24	15
Number discharged during 1948	...	85	46
Number transferred (to Ongino)	...	12	...
Number absconded	...	8	104
Number remaining at end of 1948	...	254	274

Lake Bunyoni Leper Colony, Kigezi (Church Missionary Society)

This is the third of the Leprosaria in charge of the Church Missionary Society and is supervised by a resident Mission doctor.

Statistics for the year are as follows:—

Number resident at end of 1947	...	666
Number admitted during 1948	...	127
Number of births	...	28
Number of deaths	...	10
Number discharged or paroled	...	64
Number remaining at end of 1948	...	747
Number of out-patients	...	4

As a result of treatment with chaulmoogra oil 427 patients are described as having improved. No benefit from treatment was observed in 78 cases and 99 are reported as having become worse.

The number of patients in whom the disease was arrested is 73, of whom 59 are without deformity.

Towards the end of the year the Medical Superintendent went on overseas leave. It was not possible to initiate treatment with sulphetrone, which requires close medical supervision.

A noteworthy feature was the exceptionally high proportion of lepromatous cases admitted during the year, viz. 112 out of a total of 127 new admissions.

The general health of the population of the Colony remained very good throughout the year. There was little intercurrent or incidental disease apart from a small outbreak of amœbic dysentery amongst the uninfected children and a few cases of mumps and measles.

Special attention is devoted to occupational therapy of various kinds, including cultivation, wood-cutting, fishing, carpentry, building construction, tailoring, etc.

With the exception of the staff at the creche and one school teacher, the entire African staff of the Colony are either active or quiescent cases of leprosy.

A building for the accommodation of 24 infirm and helpless persons was completed during 1948. Six double tenement houses in permanent materials were built for infectious cases.

(c) HELMINTHIC DISEASES.

28. The number of cases of infestation with intestinal parasites recorded in the returns include only those patients whose symptoms are diagnosed as attributable to such parasites. Many other infestations are discovered during the routine examination of stools of hospital patients but are not recorded separately, though treatment is given where advisable.

29. Ankylostomiasis

5,867 cases were recorded, compared with 5,609 in 1947. The incidence of this disease is widespread in the Protectorate. The District Medical Officer, Mbale, reported a particularly high incidence in Tororo District, where severe degrees of infestation accompanied by marked anæmia, œdema and pallor of the skin and hair are common. These cases formed a high proportion of admissions to the hospital wards and responded well to anthelmintic treatment. Re-infestation frequently occurs after discharge from hospital.

30. Schistosomiasis

949 cases were recorded in 1948 compared with 1,072 cases in the previous year. The disease is particularly prevalent in the West Nile District where both vesical and rectal infections occur, the latter (due to *S. mansoni*) being much the commoner. Many cases were reported also from Acholi, Lango, Mengo and Bunyoro Districts.

Two new cases of schistosomiasis due to *S. mansoni* were discovered in Entebbe, the infestation in all probability being derived from Lake Victoria. Several cases of urinary schistosomiasis were discovered at a school at Nakasongola in Mengo District.

31. Dracontiasis

This disease occurs especially in Acholi and West Nile Districts and is often the cause of prolonged disability. A small focus of infestation with guinea worm was reported for the first time from eastern Usuku in Teso.

32. Taeniasis

Tape worm is found most frequently in Ankole, Kigezi and Mubende Districts. Human infestations are almost exclusively due to *T. saginata*.

33. Ascariasis

This is particularly common in Kigezi and Masaka Districts.

34. Onchocerciasis

In addition to the known heavily infested areas in eastern Mengo and Busoga, a focus of onchocerciasis in the Gombolola of Kayonza in Kigezi District was reported for the first time by the Entomologist. He further reported evidence of infestation amongst the indigenous population living in the neighbourhood of rivers crossing the Katwe-Fort Portal road in Toro.

The ocular manifestations of this disease do not appear to be encountered as frequently in Uganda as elsewhere.

II. VITAL STATISTICS

35. The vital statistics for the African population in each Province and District of the Protectorate are set out in Tables 12 and 13. The population figures quoted are based on the Census returns of 1948 supplied by the E.A. Statistical Department; consequently statistical information relating to this year must be regarded as much more accurate than the preceding years, which relied for population data on the Census for 1931 with corrections for the annual increase or decrease obtained from the records of births and deaths. No statistics are available in respect of Karamoja District.

TABLE 12—RETURN SHOWING BIRTH, DEATH, STILL-BIRTH AND INFANTILE MORTALITY RATES FOR THE UGANDA PROTECTORATE FOR THE LAST SEVEN YEARS.

PROVINCES AND DISTRICTS	BIRTH RATE PER 1,000 POPULATION						
	1942	1943	1944	1945	1946	1947	1948
BUGANDA—							
Mengo ...	31.24	33.25	32.02	34.09	23.87	26.024	16.856
Masaka ...	26.57	31.49	30.86	37.62	36.38	33.374	26.146
Mubende ...	11.29	11.29	12.65	11.04	12.44	11.931	24.902
TOTAL ...	26.76	29.04	28.94	30.91	24.66	25.254	19.613
EASTERN—							
Busoga ...	19.54	18.13	16.04	22.49	26.31	30.078	24.872
Mbale ...	24.59	22.78	18.85	21.96	22.76	24.253	25.929
Teso ...	22.97	22.04	19.03	19.35	25.40	23.055	16.937
TOTAL ...	22.66	21.16	18.02	21.52	23.24	25.436	22.882
WESTERN—							
Toro ...	27.28	29.37	26.23	28.43	27.82	21.333	32.268
Ankole ...	26.51	28.69	25.57	34.88	32.69	34.500	25.512
Kigezi ...	40.69	45.29	34.04	48.29	53.84	46.742	43.266
Bunyoro ...	15.57	14.50	13.18	14.81	14.00	13.338	11
TOTAL ...	29.76	32.37	26.89	35.31	35.78	33.175	30.934
NORTHERN—							
Lango ...	35.42	34.02	34.14	37.07	36.81	38.103	34.520
Gulu ...	39.58	38.25	31.24	31.34	34.76	39.171	24.777
West Nile ...	44.34	35.09	33.31	41.39	41.91	40.616	35.851
TOTAL ...	39.99	35.65	32.99	37.49	37.06	39.356	31.543
UGANDA PROTECTORATE	28.78	28.61	25.78	30.26	29.55	30.170	25.617

PROVINCES AND DISTRICTS	DEATH RATE PER 1,000 POPULATION						
	1942	1943	1944	1945	1946	1947	1948
BUGANDA—							
Mengo ...	33.44	26.27	27.64	28.81	23.07	24.447	13.933
Masaka ...	25.37	18.42	22.55	21.26	16.71	17.973	11.672
Mubende ...	10.06	7.35	10.15	8.66	7.87	8.029	14.487
TOTAL ...	27.56	21.22	23.47	23.63	19.06	20.118	13.423
EASTERN—							
Busoga ...	27.08	23.33	20.56	21.33	25.80	27.487	20.360
Mbale ...	18.86	17.92	16.91	19.06	19.26	14.804	17.498
Teso ...	18.8	16.86	16.88	18.88	22.99	14.812	10.168
TOTAL ...	21.43	19.35	18.03	20.13	21.31	18.702	13.574
WESTERN—							
Toro ...	18.17	16.25	14.13	14.36	15.21	10.981	16.480
Ankole ...	29.36	19.71	18.80	21.24	15.95	17.047	9.780
Kigezi ...	15.63	20.12	20.12	14.70	17.49	10.877	8.867
Bunyoro ...	11.77	11.56	9.58	10.78	10.92	9.337	7.853
TOTAL ...	20.22	16.98	16.98	16.36	16.71	12.691	10.660
NORTHERN—							
Lango ...	17.13	20.97	19.80	22.07	24.43	14.227	13.687
Gulu ...	21.50	23.79	19.44	19.25	20.30	18.752	12.243
West Nile ...	24.38	20.23	18.11	18.66	30.80	24.351	19.687
TOTAL ...	21.12	23.76	19.06	20.05	24.39	19.341	15.292
UGANDA PROTECTORATE	22.54	20.10	19.28	19.99	20.26	17.664	14.026

PROVINCES AND DISTRICTS	STILL-BIRTH RATE PER 100 BIRTHS AND STILL-BIRTHS						
	1942	1943	1944	1945	1946	1947	1948
BUGANDA—							
Mengo ...	1.39	1.03	0.76	0.75	0.86	0.683	0.393
Masaka ...	1.47	1.10	0.59	0.52	0.46	0.955	0.678
Mubende ...	2.98	2.86	3.81	3.39	2.8	2.692	1.779
TOTAL ...	1.53	1.18	0.96	0.86	0.89	0.9297	0.599
EASTERN—							
Busoga ...	5.82	4.65	3.99	4.90	5.05	4.664	4.586
Mbale ...	3.00	2.83	2.26	2.23	2.04	2.073	2.480
Teso ...	0.77	0.63	0.20	0.34	0.50	0.164	0.109
TOTAL ...	3.27	2.80	2.25	2.73	2.63	2.608	2.830
WESTERN—							
Toro ...	4.18	4.50	4.59	3.85	3.41	3.267	3.342
Ankole ...	4.33	3.53	3.32	3.02	3.35	2.801	2.415
Kigezi ...	4.89	4.76	4.69	4.26	3.98	3.786	2.929
Bunyoro ...	6.58	7.01	8.01	6.73	7.12	6.771	5.660
TOTAL ...	4.92	4.70	4.68	4.09	3.86	3.536	3.009
NORTHERN—							
Lango ...	5.08	4.91	5.49	5.21	5.48	4.094	3.752
Gulu ...	4.92	4.76	4.84	3.98	3.75	3.971	3.879
West Nile ...	2.39	1.95	2.45	1.81	1.68	1.2472	0.1329
TOTAL ...	4.08	3.94	4.01	3.62	3.48	2.972	2.828
UGANDA PROTECTORATE	3.43	3.13	2.90	2.82	2.88	2.638	2.439

PROVINCES AND DISTRICTS	INFANTILE MORTALITY RATE PER 1,000 BIRTHS						
	1942	1943	1944	1945	1946	1947	1948
BUGANDA—							
Mengo ...	99.10	65.65	85.92	71.23	73.48	79.041	61.396
Masaka ...	124.32	59.42	95.18	57.28	57.28	64.938	50.788
Mubende ...	59.42	59.33	59.40	68.51	37.00	54.816	31.831
TOTAL ...	101.73	63.12	70.24	67.21	64.86	72.793	55.575
EASTERN—							
Busoga ...	279.07	200.05	182.94	136.51	141.49	145.354	146.551
Mbale ...	130.96	123.96	122.68	130.37	125.93	99.710	127.401
Teso ...	76.26	61.54	66.51	77.12	72.81	48.317	50.133
TOTAL ...	157.99	129.24	125.46	121.20	119.43	104.863	119.731
WESTERN—							
Toro ...	95.79	97.51	77.05	64.21	72.68	60.333	79.831
Ankole ...	135.03	87.20	91.25	94.24	102.27	68.188	57.884
Kigezi ...	38.97	43.35	52.30	37.82	49.00	25.050	27.722
Bunyoro ...	84.65	54.35	54.45	59.05	56.88	70.131	58.181
TOTAL ...	81.94	67.77	69.95	61.75	68.95	46.622	48.902
NORTHERN—							
Lango ...	143.00	158.13	150.76	20.28	170.00	122.896	118.457
Gulu ...	215.98	255.89	245.38	20.93	204.11	152.553	172.521
West Nile ...	186.61	264.14	171.40	183.31	271.82	213.981	181.174
TOTAL ...	195.54	227.79	184.52	199.56	221.05	166.781	158.614
UGANDA PROTECTORATE	136.91	120.79	116.36	109.59	119.60	99.033	95.040

PROVINCES AND DISTRICTS	MATERNAL MORTALITY RATE PER 1,000 BIRTHS AND STILL-BIRTHS						
	1942	1943	1944	1945	1946	1947	1948
BUGANDA—							
Mengo ...	7.77	7.88	7.78	7.69	8.34	7.385	3.939
Masaka ...	6.06	5.52	4.99	5.17	2.66	3.550	3.083
Mubende ...	3.99	3.78	5.71	1.64	4.00	1.553	4.329
TOTAL ...	7.09	7.03	6.96	6.61	6.04	5.737	3.690
EASTERN—							
Busoga ...	16.43	13.47	8.64	6.98	11.07	10.395	7.579
Mbale ...	6.43	4.26	5.07	4.19	6.01	5.165	5.278
Teso ...	7.99	7.88	7.31	5.93	3.96	3.882	5.320
TOTAL ...	9.56	7.62	6.61	5.47	7.29	6.775	6.149
WESTERN—							
Toro ...	9.65	8.35	9.23	5.80	8.39	8.014	7.428
Ankole ...	6.61	4.88	4.71	5.12	4.10	4.595	4.929
Kigezi ...	4.60	2.96	5.65	3.87	3.79	2.782	2.557
Bunyoro ...	8.67	3.26	5.30	4.24	6.67	4.086	4.002
TOTAL ...	6.52	4.64	6.13	2.95	4.79	4.175	4.351
NORTHERN—							
Lango ...	8.00	6.37	7.61	7.71	6.07	6.271	5.186
Gulu ...	8.50	8.01	7.77	8.26	8.67	5.344	4.549
West Nile ...	6.43	3.31	2.73	3.42	4.83	2.462	3.729
TOTAL ...	7.50	5.77	5.58	6.06	6.11	4.549	4.396
UGANDA PROTECTORATE	7.69	6.19	6.31	5.65	6.00	5.260	4.741

TABLE 13.—VITAL STATISTICS RETURN OF THE UGANDA PROTECTORATE FOR THE YEAR 1948 (AFRICAN POPULATION ONLY).

Provinces and Districts	Live Births			Still-births	DEATHS					Estimated Population	RATES FOR THE YEAR								
					Of children under 1 year			Of Women in child	All other deaths		Total deaths	Birth Rate per 1,000 Population	% Still-births to Births plus Still Births	Infantile Mortality Rate per 1,000 Live Births	Maternal Mortality per 1,000 Births and Still Births	Death Rate per 1,000 Population			
	Male	Female	Total		Male	Female	Total												
BUGANDA PROVINCE—																			
Mengo ...	7,631	7,321	14,952	59	463	455	918	59	11,282	12,359	887,000	16.856	0.393	61.306	3.930	13.933			
Masaka ...	4,078	3,975	8,053	55	197	212	409	25	3,161	3,595	308,000	26.146	0.678	50.788	3.083	11.672			
Mubende ...	1,018	1,024	2,042	37	28	37	65	9	1,114	1,188	82,000	24.902	1.779	31.831	4.329	14.487			
TOTAL ...	12,727	12,320	25,047	151	688	704	1,392	93	15,657	17,142	1,277,000	19.613	0.599	55.575	3.690	13.423			
EASTERN PROVINCE—																			
Busoga ...	6,282	6,055	12,337	593	936	872	1,808	98	8,193	10,099	496,000	24.872	4.586	146.551	7.579	20.360			
Mbale ...	7,681	7,099	14,780	376	981	902	1,883	80	8,011	9,974	570,000	25.929	2.480	127.401	5.278	17.498			
Teso ...	3,307	3,076	6,383	7	176	144	320	34	3,669	4,023	398,000	16.037	0.109	50.133	5.320	10.108			
TOTAL ...	17,270	16,230	33,500	976	2,093	1,918	4,011	212	19,873	24,096	1,464,000	22.882	2.830	119.731	6.149	13.574			
WESTERN PROVINCE—																			
Toro ...	4,380	3,687	8,067	279	343	301	644	62	3,414	4,120	250,000	32.268	3.342	79.831	7.428	16.480			
Ankole ...	5,000	4,809	9,809	245	315	258	573	50	3,172	3,795	388,000	25.512	2.415	57.884	4.929	9.780			
Kigezi ...	8,333	8,368	16,701	504	248	215	463	44	2,916	3,423	386,000	43.266	2.929	27.722	2.557	8.867			
Bunyoro ...	852	798	1,650	99	49	47	96	7	1,075	1,178	150,000	11	5.660	58.181	4.002	7.853			
TOTAL ...	18,565	17,752	36,317	1,127	955	821	1,776	163	10,577	12,516	1,174,000	30.934	3.009	48.902	4.353	10.660			
NORTHERN PROVINCE—																			
West Nile ...	5,805	5,775	11,580	155	1,048	1,050	2,098	44	4,217	6,359	323,000	35.851	1.320	181.174	3.749	19.687			
Lango ...	4,805	4,481	9,286	362	577	523	1,100	52	2,530	3,682	269,000	34.520	3.752	118.457	5.389	13.687			
Acholi ...	4,123	3,905	8,028	324	732	653	1,385	38	2,544	3,907	324,000	24.777	3.879	172.521	4.549	12.243			
TOTAL ...	14,733	14,161	28,894	841	2,357	2,226	4,583	134	9,291	14,008	916,000	31.543	2.828	158.614	4.506	15.292			
UGANDA PROTECTORATE ...	63,295	60,463	123,758	3,095	6,093	5,669	11,762	602	55,398	67,762	4,831,000	25.617	2.439	95.040	4.745	14.026			

36. Birth Rate and Death Rate

Live births exceeded deaths by 55,996 and the population increased in 1948 by 11.6 per thousand. All districts contributed to this increase, the rate being greater in the Western and Northern Provinces (20.3 and 16.2 per thousand respectively) than in Buganda and the Eastern Provinces (6.2 and 6.4 per thousand respectively). The birth rate was highest in Kigezi (43.27) and lowest in Bunyoro (11.00), whilst the death rate was highest in Busoga (20.36) and lowest in Bunyoro (7.85) (Tables 12 and 13).

37. Still-Birth Rate

The number of still-births recorded was 3,095 compared with 3,260 in 1947. The percentage of still-births, as a proportion of total births, ranged from 0.11 in Teso to 5.66 in Bunyoro. The rate for the Protectorate was 2.44, which is somewhat less than that for the previous year (2.63).

38. Infant Mortality Rate

The rate for the Protectorate was 95.04 per 1,000 live births compared with 99.03 per 1,000 in 1947. It ranged from 181.17 in the West Nile and 172.52 in Acholi to 27.72 in Kigezi and 31.83 in Mubende.

39. Maternal Mortality Rate

This was 4.74 per 1,000 live and still births, the lowest ever recorded. It will be observed in Table 14 that in the decennial period 1938-1948 the maternal mortality rate has declined steadily and almost without interruption.

TABLE 14.

Year	Maternal Mortality Rate	Year	Maternal Mortality Rate
1938	10.64	1944	6.31
1939	9.08	1945	5.65
1940	7.98	1946	6.00
1941	7.15	1947	5.26
1942	7.69	1948	4.74
1943	6.19		

The probable significance of this decline has been discussed in Section 1 (Maternity and Child Welfare).

EUROPEAN OFFICIALS.

40. In the computation of Table 15 only those officials whose names appear in the Staff List are taken into consideration. Wives and families of officials are not included. This Table shows the sick, invaliding and death rates of European officials during the last three years.

TABLE 15.

Particulars	1946	1947	1948
Total number of officials resident ...	656	736	787
Average number resident ...	597	672	633
Total number on sick list ...	766	485	388
Total number of days on sick list ...	3,115	2,362	2,688
Average daily number on sick list ...	8.53	6.47	7.34
Percentage of daily sick to average number resident ...	1.43	0.96	1.15
Average number of days on sick list each patient ...	4.06	4.87	6.92
Average sick time each resident ...	5.22	3.51	4.24
Total number invalided ...	6	3	...
Percentage of invaliding to total residents ...	0.92	0.40	...
Total deaths ...	2	3	2
Percentage of deaths to average number resident ...	0.33	0.44	0.32
Percentage of deaths to total residents ...	0.30	0.40	0.25
Number granted local sick leave ...	35	30	64
Average number of days sick leave for each patient ...	16.80	12.40	13.76

41. The principal causes of sickness for which treatment was sought were diseases of the skin, dyspepsia, upper respiratory disorders and local injuries.

42. Two deaths were recorded, the causes being acute appendicitis and pulmonary embolism respectively.

43. The number of Medical Boards held on European officials in each of the last five years was as follows:—

1944	... 20	1947	... 8
1945	... 31	1948	... 1
1946	... 12		

44. The only Medical Board held during the year under review was on a European official suffering from rodent ulcer. The Board recommended that he should proceed to South Africa for further treatment.

EUROPEAN NON-OFFICIALS.

45. In all, 2,040 cases of illness among European non-officials were treated by Government medical officers. Of this number, 708 were admitted to hospital.

46. Thirty-seven deaths were recorded, the cause of which were as follows:—

Heart failure...	... 13	Coronary thrombosis ...	... 1
Cancer ...	... 4	Diabetes ...	... 1
Arteriosclerosis ...	... 3	Mesenteric thrombosis ...	... 1
Ileus ...	... 2	Osteomyelitis of skull ...	... 1
Enteritis ...	... 2	Prematurity ...	... 1
Injuries inflicted by animals ...	... 2	Haemorrhagic disease of new-born	1
Pulmonary tuberculosis ...	... 1	Blackwater fever ...	... 1
Malaria ...	... 1	Unknown ...	... 1
Asphyxia ...	... 1		

ASIAN OFFICIALS.

47. Table 16 showing the sick, invaliding and death rates among Asian officials in the last three years is computed from the numbers of permanent staff shown in the Protectorate Estimates of Revenue and Expenditure, since no Asian staff list has been published since 1939.

Officials of the E.A. Railways and Harbours, the Posts and Telegraphs Department and artisans employed by the Public Works Department on temporary agreement are not included.

TABLE 16.

Particulars	1946	1947	1948
Total number of officials resident ...	459	483	458
Average number resident ...	414	467	414
Total number on sick list ...	1,221	507	479
Total number of days on sick list ...	5,863	2,354	2,250
Average daily number on sick list ...	16.06	6.44	6.14
Percentage of daily sick to average number resident ...	3.87	1.37	1.48
Average number of days on sick list for each patient ...	4.80	4.64	4.69
Average sick time each resident ...	14.16	5.04	5.43
Total number invalided ...	1	3	2
Percentage of invaliding to total residents ...	0.21	0.62	0.43
Total deaths ...	2	2	2
Percentage of deaths to total residents ...	0.43	0.41	0.44
Percentage of deaths to average number resident ...	0.48	0.43	0.48
Number granted local sick leave ...	25	4	9
Average number of days on sick leave per patient ...	16.72	19.25	18.11

48. The principal causes of sickness were malaria, respiratory affections, digestive disorders and local injuries.

49. Two deaths were recorded, the causes being coronary thrombosis and injuries by murderous assault.

50. The number of Medical Boards held on Asian officials in each of the last five years was as follows:—

1944	... 16	1947	... 8
1945	... 6	1948	... 3
1946	... 8		

51. The three Medical Boards held in 1948 were for the following conditions:—

Disease	No. of Cases	Recommendation of Board
Mental disturbance ...	1	Fit to continue service.
Diabetes ...	1	Invalided out of the service.
Duodenal ulcer ...	1	Invalided out of the service.

ASIAN NON-OFFICIALS.

52. A total of 8,129 cases of illness among the non-official community were treated by Government medical staff. The number in 1947 was 11,544.

The principal causes of sickness were malaria, diseases of the upper respiratory tract and digestive disorders.

53. One hundred and ninety deaths were reported to this Department, the chief causes of which were as follows:—heart failure (34), malaria (30), pneumonia (20), accidents (16), blackwater fever (11), tuberculosis (7), difficult labour (7), diabetes (5) gastro-enteritis (5).

AFRICAN OFFICIALS.

54. Accurate statistics in respect of African officials are not available. In the absence of a staff list the number of officers in the Local Civil Service has been obtained from the Protectorate Estimates. Table 17 shows the sick, invaliding and death rates of African civil servants for the past three years.

TABLE 17.

Particulars	1946	1947	1948
Total number of officials resident ...	1,582	1,499	1,672
Average number of officials resident ...	1,582	1,499	1,672
Total number on sick list ...	85	150	216
Total number of days on sick list ...	251	657	993
Average daily number on sick list ...	0·68	1·80	2·71
Percentage of daily sick to average number resident ...	0·04	0·12	0·16
Average number of days on sick list for each patient ...	2·95	4·38	4·59
Average sick time each resident ...	0·16	0·43	0·59
Total number invalided ...	...	...	2
Percentage of invalidings to total residents ...	...	...	0·11
Total deaths ...	2	...	1
Percentage of deaths to total residents ...	0·12	...	0·12
Percentage of deaths to average number resident ...	0·12	...	0·12
Number granted local sick leave ...	4	1	2
Average number of days on sick leave for each patient ...	40·50	14	10·5

SECTION III.—HYGIENE AND SANITATION

A. General Review of Work Done and Progress Made

I. PREVENTIVE MEASURES

(a) INSECT-BORNE DISEASES.

55. Malaria

Antimalarial measures are almost exclusively confined to the larger townships and their immediate environs.

The filling in of depressions and wells which are actual or potential breeding places of mosquitoes and the use of antimalarial oil as a larvicide continued as routine measures in most stations.

Surface and subsoil drainage works were extended as funds permitted, but the extent of construction of permanent antimalarial drains has been limited by the shortage of cement and by the priority calls on its use in connection with the house-building programme.

Afforestation of swampy areas was undertaken by the Forestry Department on a restricted scale during the year. At Namasagali a further 50 acres of swamp were planted, but termite activity in the plantations caused much damage.

The extensive building operations in progress in all parts of the Protectorate, with the numerous brick-fields and sand-pits resulting therefrom, created many breeding places of anopheline mosquitoes, the eradication of which required special attention.

A high incidence of malaria was reported among non-immune emigrants from the Kigezi highlands who had moved into the lowland resettlement areas. To deal with this situation, additional medical and health staff were posted to the affected areas.

As a means of adult mosquito control, residual spraying of houses with D.D.T. was used widely in a number of the more malarious stations.

Despite a steadily increasing population, the incidence of malaria in Kampala, as reflected in the returns submitted from the European and Asian hospitals, has shown a marked and progressive decline within the past few years. In addition to the residents of the municipal area, the African population in the environs of Kampala have also benefited by the reduction in anopheline infestation resulting from the extensive drainage and reclamation works undertaken in recent years. The following table is illustrative of the marked improvement in conditions achieved in the past four years:—

TABLE 18.
ANOPHELES INFESTATION AND MALARIA, KAMPALA, 1945-1948.

	1945	1946	1947	1948
<i>Anopheles</i> larvae: breeding places found	1,537	1,057	619	586
<i>Anopheles</i> adults captured	379	111	25	16
Malaria returns from European and Asian Hospitals, Kampala	501	577	352	146

These results have been achieved, not only by the conventional measures of swamp drainage and reclamation, including the encouragement of crop cultivation in reclaimed swamps, but by the widespread use of larvivorous fish (*Lebistes*) which have been found eminently suitable for the conditions prevailing in Kampala. The use of a 10% aqueous suspension of D.D.T. dispersable powder in lieu of antimalarial oil (malariol) has also been successful in the prevention of breeding, but its lethal action against *Lebistes* renders it necessary to exercise great care in its application.

As a prophylactic, paludrine has been extensively used by Europeans and Asians exposed to the risk of malaria infestation. It has also been used by pupils in a number of boarding schools in different parts of the Protectorate. The general consensus of opinion of medical officers is that a daily dosage of 100 mg (for adults) is required to ensure effective protection and that any scheme of dosage involving a smaller intake cannot be advocated.

A tendency of newcomers to the country to take inadequate precautions against being bitten by mosquitoes has been commented upon by more than one medical officer.

56. Trypanosomiasis

Clearings were maintained at all scheduled landings, river crossing and watering places, while the sleeping sickness regulations were enforced, so far as practicable, in all areas throughout the Protectorate.

In a few areas prophylactic injection of the population with antrypol was carried out; this procedure was also adopted in the case of visitors whose duties required them to enter closed areas.

The reduction in the number of new cases of trypanosomiasis in all infected areas has been referred to in an earlier section and the present situation regarding the disease may be regarded as highly satisfactory. At Masaka, in the course of routine examination of a batch of immigrants from Tanganyika Territory, two persons were found to be infected with *T. rhodesiense*. The danger of infecting fly along the routes traversed by immigrant labour is an ever-present possibility. It was ascertained during the year that Administrative Orders issued in 1941 which prohibited the entry into Uganda of natives of specified districts in Tanganyika Territory known to be infected were *ultra vires* the Sleeping Sickness Ordinance. Consideration has been given to the issue of a Proclamation under section 38 (1) of the Public Health Ordinance, but a decision has not yet been taken by reason of the difficulties envisaged by the Tanganyika authorities in enforcing the provisions of such a Proclamation.

In South Busoga, the scene of an extensive epidemic in 1942-1943, the situation had so far improved by the end of 1947 that the periodic medical inspection of the entire population in this area was discontinued. Nevertheless, vigilance is being maintained, and the work of reclamation and resettlement in selected areas continues. It is difficult to secure the willing co-operation of the population in resettlement plans, and attempts to encourage close settlement in the infected area of Bulongo in Mbale District have not yet had the success hoped for.

A proposal to establish a fishing village on the Ankole shore in the Sleeping Sickness restricted area of Lake Edward was supported by this Department, subject to certain precautions which included close medical supervision of the Settlement and the construction and maintenance of clearings along the access road linking it with the Mbarara-Katwe Road.

A tsetse survey of Buvuma Island was completed by the Medical Entomologist early in 1948. It was revealed that the fly position has not changed materially since 1944, when an outbreak of *T. rhodesiense* infection first occurred on the Island. Since then sporadic cases have continued to be discovered in the northern part of the Island despite regular prophylactic injections with antrypol. The survey revealed that the *G. pallidipes* infestation in the north and north-east was prevented from extending southwards by a belt of thick forest traversing the Island from east to west. North Buvuma was accordingly evacuated and declared a Restricted Area, and restrictions were imposed on the movements of the population in the settled southern part of the Island.

In Busongora County, Toro District, evidence that cases of *T. gambiense* sleeping sickness were occurring in places outside the declared Sleeping Sickness Area resulted in a recommendation that the existing boundary of the area should be extended so that closer control could be exercised over the upper reaches of the Nyamugasani River, where there was evidence of infected *G. palpalis*.

57. Yellow Fever

No cases of this disease were discovered during the year.

The *Aedes* Index in all major townships in the Protectorate has been kept at a consistently low level. In Kampala it declined to a new low record of 0.0005 (0.05%) compared with the previous year's low record of 0.0013. In Entebbe the index was 0.002.

Owing to the discovery by the staff at the Yellow Fever Research Institute of a focus of virus among sylvan mosquitoes (*A. africanus*) in Bwamba County, Toro, entry into and exit from this area was made conditional upon inoculation against yellow fever and a police post was set up on the Bwamba-Fort Portal Road to ensure that all travellers were in possession of valid certificates of inoculation.

The voluntary withdrawal of the International Health Division of the Rockefeller Foundation from control of the Yellow Fever Research Institute was to have taken place at the end of 1948, but has been postponed for a further 12 months owing to difficulties in the recruitment of British staff. The generosity of the Foundation in agreeing to direct the activities of the Institute for a further year is gratefully acknowledged, as was the decision to permit Dr. S. F. Kitchen of the Foundation to serve as Director until the end of 1949. Dr. K. C. Smithburn, late Director of the Institute, left the Protectorate towards the end of the year. The close and friendly co-operation maintained by him and his staff with this Department will be gratefully remembered.

58. Relapsing Fever

The persistence of tick infestation (*O. moubata*) in labour camps occupied by immigrants from Ruanda-Urundi has always been a problem. As a means of controlling this, the clothing and personal belongings of Ruanda immigrants entering Uganda at Merama Hill have for the past few years been subjected to disinfestation by a hot air process at the Kakitumba Border Camp. In 1948 the process was abandoned in favour of gammexane dust. This has been found to give at least equally satisfactory results and can, of course, be far more rapidly applied than the hot air method. In the light of experience gained by the use of gammexane at Kakitumba it is intended to employ this insecticide for routine application at all transit camps on the labour migration routes.

The discovery at Masaka of 12 immigrant labourers harbouring *T. duttoni* in their blood whilst apparently symptom-free is ample evidence of the risk to which the indigenous population is exposed.

In Ankole and Masaka Districts, where the disease is particularly prevalent, gammexane dust has been used with conspicuous success in ridding badly infested huts of *O. moubata*. It is reported that one application has been found to keep a hut free of obvious infestation for three or four months.

(b) INFECTIOUS DISEASES.

59. Cerebro-spinal meningitis

The marked decline in the incidence of this disease throughout the Protectorate has been noted in Section II.

Isolation of patients and segregation of contacts in temporary shelters were practised as far as possible.

60. Smallpox

The isolation of all infected cases and the vaccination of contacts have been carried out in all districts where cases of the disease occurred.

The number of vaccinations performed were as follows:—

TABLE 19.

Province	No. of vaccinations performed
Buganda	63,290
Eastern	197,038
Western	141,588
Northern	138,671
TOTAL	540,587

Routine mass vaccination of the population, except in areas where epidemic conditions exist, is not now practised.

61. Typhoid Fever

The steadily increasing prevalence of this disease in Mengo District has given rise to concern. Its incidence in the environs of Kampala, where the majority of surface water springs have now been protected, was particularly disturbing. It has not yet been established whether or not infection is being derived from springs which have become contaminated by soil percolation; but the growing congestion of this area and the highly insanitary housing conditions under which the mass of the population are living are eminently favourable to the spread of the disease by means other than the contamination of public water supplies.

(c) HELMINTHIC DISEASES.

62. Tapeworm is extremely common in the cattle districts of the Western Province, especially in Ankole. Meat inspection is carried out in all the large townships, either by members of the Veterinary Department or by health inspectors. Infected carcasses are destroyed in whole or in part, depending on the degree of infestation.

63. Infestation with *Ascaris* and *Ankylostoma* are common in every district. The parasites are usually discovered in patients under treatment for other conditions. Until the use of deep pit latrines becomes the rule rather than the exception and standards of personal hygiene are raised, reinfection at an early date after treatment is almost inevitable.

II. GENERAL MEASURES OF SANITATION

64. The only town in the Protectorate where public sewers are installed is Kampala, but septic tank installations are now the rule in townships where adequate piped water supplies are available, notably Jinja and Entebbe. In major townships not at present served by piped water supplies, the single bucket system of conservancy is universally adopted, subsequent disposal by shallow trenching being reasonably satisfactory. In the lesser townships and at schools, labour camps and factories outside the

major townships the deep pit latrine is in general use, while every effort is being made to popularise pit latrines among the indigenous population. Reports from many districts indicate that these efforts are being attended with a considerable measure of success but little progress has yet been achieved in the more backward areas. Superstition and suspicion of alien ideas are still important factors which reduce their popularity among certain tribes.

Steady progress was maintained in the protection of rural water supplies by the staff of the Department and the population is invariably willing to co-operate in this work. Numerous boreholes were constructed during the year by the Geological Department or by private firms under Government contract.

Special attention is now being given to improving sanitary conditions in rural communities by advice and guidance in the hygienic construction and maintenance of dwellings, domestic cleanliness and the protection of food and water supplies in the home. Not only are talks given by members of the health staff, but house to house visits are regularly made and individual householders are advised on their personal problems. Slow but nevertheless solid progress in this field of public health activity is reported from many districts, notably Mengo, Acholi, Busoga and Mbale.

III. SCHOOL HYGIENE

65. A detailed medical inspection of children of all communities attending schools in Kampala was undertaken in 1948 and a series of comprehensive reports was submitted.

The following table summarises the percentage incidence of the principal defects discovered among children in the four communities—European, Indian, Goan and African.

TABLE 20.

Race	No. Examined	Percentage Incidence of Principal Defects						
		Anæmia	Dental defects & gingivitis	Trachoma	Tonsils	Spleen	Skin	Nits
European ...	81	19	12	Nil	15	Nil	Nil	1
Indian ...	2,266	15	35	0.6	19	2	6	17
Goan ...	119	17	25	2	19	4	1	34
African ...	520	15	15	12	18	13	4	Nil

It will be seen that on almost every count European children were superior to the other three groups. The relatively high incidence of anæmia among the Europeans is interesting and has not yet been satisfactorily explained. Defects of the teeth and gums occurred with much greater frequency among Asian children than among the other two communities, whilst the absence of lice and nit infestation in African children contrasted with its high frequency among Goans and, to a lesser extent, among Indians.

A small tuberculin test survey was carried out in some of the Asian and African schools in Kampala. It was found that African children

became positive at a much later age but in far greater numbers than the Asian children. (See Section II (ii)).

IV. LABOUR CONDITIONS

66. With the secondment of a Senior Medical Officer to the staff of the Labour Department, a number of important preliminary investigations were carried out on the medical aspects of labour welfare.

A medical investigation was undertaken to ascertain the state of anæmia and malarial infestation of Ruanda-Urundi labour who had just arrived in Uganda for employment on the larger estates. The results of this investigation are tabulated in Tables 21 and 22.

TABLE 21.
HAEMOGLOBIN ESTIMATIONS.
(Normal range 15–16 gms per cent. Haemoglobin).

Test standard	No. Examined	No. under standard	Percentage
12 gms % Hb	1,000	13	1.3
13 gms % Hb	1,169	111	9.5
14 gms % Hb	599	114	19

TABLE 22.
BLOOD PARASITES.

Number Examined	...	...	2,768
<i>P. falciparum</i>	...	...	280
<i>P. malariae</i>	...	...	14
<i>Trep. duttoni</i>	...	...	12
<i>T. rhodesiense</i>	...	...	1
Percentage malarial infestation	...	...	10.6%

The result of this investigation showed that gross anæmia was not as extensive as had been supposed, and that the malaria parasite rate was higher than anticipated among immigrants, the majority of whom had come from highland areas thought to be relatively free from malarial infestation.

The larger estates maintain hospitals or dispensaries and, generally speaking, these units have shown an improvement in the standard of medical work, although the difficulties in obtaining suitable medical staff have proved a hindrance to efficiency in many cases.

Two of the largest estates each employ a whole-time medical practitioner, while some others make use of part-time practitioners. At many of the smaller estates medical facilities for employees still fall short of legal requirements.

The housing, feeding and welfare of labour and the sanitary arrangements of labour camps received the attention of medical officers and health inspectors in all parts of the Protectorate. A general all-round improvement in labour welfare and camp sanitation is evident, although few of the smaller undertakings have attained the required standards.

V. HOUSING AND TOWN PLANNING

67. Government

The considerable progress made in Government housing construction during the year has gone far to alleviate the shortage of accommodation hitherto prevailing for European officials. No fewer than 102 quarters were completed during the year, while plans were approved for the construction of a further 232. Progress was particularly marked in Kampala; here, the housing programme included 11 blocks of flats of which 4 blocks comprising 27 separate flats were completed by the end of the year.

Non-Government

The demand for housing in most townships of the Protectorate continues to exceed the supply, particularly among the lower income groups of the Asian population. In consequence, much overcrowding and the use of entirely unsuitable accommodation persists. Faced with this problem, township Authorities have been obliged to exercise discretion in the administration of the overcrowding and sanitation provisions of the Public Health Ordinance. It has been estimated that in Kampala alone between 400 and 600 new dwellings are required to house the existing Asian population adequately, where occupation permits were granted in respect of 67 buildings only during 1948; the majority of these were not intended for occupation by the class of Asian most severely affected by the housing shortage.

Unsatisfactory housing conditions among the Asian shopkeeper class are also to be found in the smaller townships and trading centres on African-owned land in Buganda, where the lease conditions militate against the construction of permanent buildings by Asian lessees; in consequence business and residential premises at these small centres of trade tend to be of very low constructional and sanitary standards.

African Housing

Very slow but none the less steady improvement in rural housing standards is reported from most districts in the Protectorate, chiefly among the more enlightened sections of the African population. By propaganda and persuasion rather than by coercion, the elements of domestic hygiene and the replacement of the traditional insanitary hut by a square house of two, three or more apartments with windows and ventilating openings are gaining increasingly widespread acceptance.

Efforts continue to be made to find suitable materials for the construction of cheap but durable houses within the means of Africans who are unable to afford the outlay required for conventional permanent materials. Although successful results have been obtained with pressed earth or murrum blocks containing a small admixture of lime or cement—a cheap and easily made substitute for brick—this form of construction has not yet gained general acceptance among the native population.

In the absence of planned development and effective means of sanitary control, the extensive aggregations of overcrowding and dilapidated African buildings in the environs of Kampala and, to a less extent, in those of other major townships have given rise to urgent problems. In so far as Kampala is concerned, a limited measure of relief from overcrowding in the peri-urban areas may result from development of the African housing scheme at Nagurru, an area lying just beyond the Township boundary. The scheme on which work was commenced in the latter part of the year, covers some 80 acres and will provide 800 residences of various types and sizes. Plans have also been completed for the construction of a settlement at Nakawa (adjacent to Nagurru) intended for the accommodation of casual African labourers attracted to Kampala in increasing numbers by the industrial and commercial development taking place in and around the town. Furthermore, active consideration is now being given by the Buganda Government to a statutory town planning scheme in the Kibuga which will provide for orderly building development, a system of zoning and the prescription of minimum constructional and sanitary standards. Associated with this development would be the establishment of a Sanitary Authority, not only for the purpose of enforcing public health legislation and instituting communal sanitary services, but for the education and stimulation of public opinion on sanitary matters.

The small African housing estate at Katabi in Entebbe has been extended and now provides 42 housing units.

At Gulu a scheme has been prepared for the housing of Africans within the Township; this comprises three zones, one for permanent houses and two for houses in temporary materials.

VI. FOOD IN RELATION TO HEALTH AND DISEASE

Conditions in township markets are slowly improving but buildings are still dilapidated and inadequate in many cases.

All the larger townships are provided with slaughter houses where meat is inspected by officers of the Veterinary or Medical Department before being exposed for sale. Cysticercosis and tuberculosis are the two commonest causes for condemning meat.

In rural areas slaughtering is generally carried out on any waste land in the vicinity of the market and inspection of meat is rarely possible.

Rural markets under the control of the Native Authorities are, as a rule, most unhygienic, but recent efforts to improve sanitary conditions at markets in Mengo District have been markedly successful in a few cases and have led to a growing appreciation by the Native Government of the need for hygienic markets. Premises where foodstuffs are prepared and sold, such as butcheries, bakeries, dairies and eating houses, are subjected to regular inspection, and improvement in their sanitary condition is noticeable, particularly in the large townships.

Despite numerous prosecutions against offenders, complaints are received from almost every station in the Protectorate about the continued

adulteration of milk. An exception is Gulu, where all milk sold in the township passes through a dairy operated by the Native Administration; here, the quality of milk is reported to be consistently good.

In Kampala a large consignment of imported condensed milk was condemned following the discovery of bacterial contamination in samples taken for examination.

At Luzira Prison a few cases of vitamin A deficiency in long-term prisoners were again reported, for which dietary adjustments had to be made.

B.—Measures Taken to Spread the Knowledge of Hygiene and Sanitation

69. Although every opportunity was taken by the staff of the Department to discuss the principles of rural sanitation and disease prevention with chiefs and other community leaders at formal Lukiko gatherings, there is a growing recognition of the need for more personal and informal contacts with the villagers themselves by house to house visiting. The purpose of these contacts is not only to provide technical information and guidance, but to establish that confidence of the public in the Medical Department and its aims without which the most well-intentioned projects will assuredly fail. The method is, of course, time-consuming, and its extension will eventually require a larger staff of health workers; but given patience, understanding and enthusiasm, health principles can be more effectively "put across" in this way and more lasting results obtained than by less personal methods.

Health instruction is included as a regular subject in the curriculum of all primary and secondary schools, and members of the Department, including subordinate health staff, give talks on health matters to pupils and teachers in the course of their routine inspection duties.

A series of lectures on health was delivered by a senior medical officer at the Chiefs' course at Bukalasa and to students of the Education Faculty at Makerere College.

Departmental staff co-operated with touring Demonstration Teams of the Public Relations and Social Welfare Department in the dissemination of health information.

SECTION IV.—PORT HEALTH WORK AND ADMINISTRATION

70. The airports at Port Bell and at Entebbe continue to be used as ports of entry into the Protectorate. Disinsectisation of all aircraft is carried out on arrival and prior to departure; in no instance were *Aedes* mosquitoes reported on aircraft, either on arrival or departure from Protectorate airports.

The number of aircraft movements at Entebbe increased from 1,236 in 1947 to 1,896 in 1948. In August, a record figure of 233 was reached.

At Port Bell, 500 flying boats were met and disinsectised on arrival and departure. Only one passenger failed to produce a valid certificate of inoculation against yellow fever. He was in transit and was isolated in screened quarters for the night before proceeding on his journey next day.

SECTION V.—MATERNITY AND CHILD WELFARE

71. An indication of the striking growth in popularity of maternity services provided by Government and by Missionary Societies is afforded by comparative statistics for the years 1938 and 1948 which are set out in the following Tables.

TABLE 23.
ANTE-NATAL ATTENDANCES (new cases).

	1938	1948
Government	20,861	66,580
Missions	17,099	24,345
TOTAL	37,960	90,925

TABLE 24.
INSTITUTIONAL LIVE BIRTHS.

	1938	1948
Government	2,568	11,711
Missions	3,395	6,324
TOTAL	5,963	18,035

TABLE 25.
PROTECTORATE PREGNANCIES ATTENDING FOR ANTE-NATAL
SUPERVISION AT GOVERNMENT AND MISSION CENTRES.

	1938	1948
Total Protectorate Live and Still Births ...	101,269	126,853
Ante-Natal Attendances (new cases) ...	37,960	90,925
Percentage attending	37.5%	71.7%

TABLE 26.
PROTECTORATE LIVE BIRTHS AND INSTITUTIONAL LIVE BIRTHS
(GOVERNMENT AND MISSIONS).

	1938	1948
Protectorate Live Births	97,757	123,758
Institutional Live Births	5,963	18,035
Percentage of Births in Institutions ...	6.1%	14.6%

TABLE 27.
PROTECTORATE LIVE BIRTHS AND INSTITUTIONAL LIVE BIRTHS
BY PROVINCES (1948) (GOVERNMENT AND MISSION).

	Protectorate Live Births	Institutional Live Births	Percentage
Buganda Province	25,047	9,650	38.5
Eastern Province	33,500	5,292	15.8
Western Province	36,317	2,526	7.1
Northern Province	28,894	567	2.0
TOTAL	123,758	18,035	14.6

TABLE 28.
NUMBER OF RURAL CENTRES TO WHICH QUALIFIED
MIDWIVES WERE POSTED (1936-1948).

	1936	1948
Government	7	38
Missions	39	30
TOTAL	46	68

TABLE 29.
MATERNAL MORTALITY RATES 1938 AND 1948.

1938...	...	...	...	10.64
1948...	...	...	...	4.74

The significance of the figures quoted above has been discussed in Section I under Maternity and Child Welfare.

72. The following are the returns for 1948 of admissions and attendances at Government maternity centres classified according to districts.

TABLE 30.

District	Confinements (excluding miscarriages).	Live Births.	Still Births.	Miscarriages.	Maternal Deaths.	Ante-Natal cases (First Attendances).	Ante-Natal cases (Total Attendances).
Buganda Province—							
Mengo	2,682	2,489	193	214	53	8,128	44,321
Masaka	1,613	1,510	103	152	25	7,611	20,139
Mubende	1,067	1,042	25	35	6	2,310	8,300
Eastern Province—							
Busoga	1,647	1,559	88	32	42	7,367	23,513
Mbale	1,759	1,661	98	81	43	15,595	41,517
Teso	548	492	56	73	19	4,523	13,962
Western Province—							
Bunyoro	304	288	16	8	6	1,044	4,078
Ankole	1,022	978	44	32	14	5,689	20,048
Toro	379	361	18	24	6	2,601	9,764
Kigezi	822	764	58	13	3	10,104	21,450
Northern Province—							
Lango	355	335	20	40	3	1,356	2,239
Acholi	205	203	2	60	6	56	1,267
West Nile	19	18	1	...	...	167	167
Karamoja	11	11	...	3	...	29	34
TOTAL	12,433	11,711	722	767	226	66,580	210,799

73. Among 66,580 women who attended for ante-natal supervision, 10,601 terminated their pregnancies in Government hospitals or rural centres. A further 2,939 who had not been under ante-natal supervision were admitted to Government units for their confinements.

74. The following obstetrical operations were performed:—

Cæsarean section	...	...	161
Forceps delivery	...	...	308
Perforation and Cranioclasm	...	...	35
Internal version	...	...	37
Removal of retained placenta	...	...	157
Perineal repair	...	...	579
Other operations—unclassified	...	...	127

75. Table 31 gives the number of children attending child welfare clinics in certain districts.

TABLE 31.

District	No. of infants	Total attendances
Mengo	716	3,346
Busoga	3,761	9,056
Mbale	223	567
Teso	7,970	21,931
Bunyoro	980	3,330
Ankole	5,766	15,411
Toro	1,825	3,893
Lango	5,107	10,488
West Nile	2,405	2,979
Total for Protectorate	28,753	71,001

REPORT OF THE LADY CORYNDON MATERNITY TRAINING SCHOOL

76. The number of pupil midwives during the year was 52, of whom 29 passed the qualifying examination of the Uganda Midwives' Board. Of the successful candidates, 10 had previously qualified as nurses. The number of midwives entering Government service during the year was 21, of whom 7 also held the Nursing Certificate.

The new Nurses Training School was almost completed by the end of the year. On the completion of a new maternity block it is proposed that the old Maternity Hospital will be converted into residential accommodation for nurses and midwives.

Septic tanks have been installed throughout the nurses' and midwives' residential quarters, and various structural improvements were carried out at the Maternity Training School.

The returns from the various maternity centres maintained by the Church Missionary Society during 1948 are summarised in the following Table:—

TABLE 32.

Centre	Confinements (excluding miscarriages).	Live Births.	Still Births.	Miscarriages.	Threatened Miscarriages.	Other conditions unclassified.	Maternal Deaths.	Neo-natal deaths.	New ante-natal cases.	Total number of Ante-natal attendances.
M.T.S. Mengo	422	381	41	56	55	132	11	42	862	2,529
Kabuwoko	205	200	5	8	39	...	...	2	1,277	3,030
Kapeka	129	120	9	8	44	...	...	11	981	1,679
Lutete	218	201	17	11	38	...	...	16	1,253	3,094
Mukono	166	159	7	11	24	...	...	5	834	1,725
Nakifuma	199	189	10	8	33	...	...	4	1,302	2,159
Ngogwe	139	133	6	3	24	...	...	1	636	1,353
Fort Portal	144	135	9	13	...	2	2	...	651	1,149
Ngora	244	224	20	20	14	26	4	...	1,586	872
TOTAL	1,866	1,742	124	138	271	160	17	81	9,382	17,590

REPORT ON NSAMBYA MATERNITY TRAINING SCHOOL

77. The average number of students in training as midwives during the year was 70. Of candidates presented at the examination of the Uganda Midwives' Board, 16 were successful, 3 being general trained nurses. Four midwives entered Government service.

Forty-seven pupils received training at the Preliminary Training School, the course for which covers two terms. Nineteen students sat for and passed the examination at the end of the course, and 9 subsequently entered the midwifery course.

The Maternity Training School has been extended by the addition of a block of buildings formerly used as a school. These will be used as classrooms and dormitories. A receiving room and sterilising room have been added to the maternity ward.

The following table summarises the work of Maternity Centres maintained by the Nsambya Mission, together with statistics of attendances at ante-natal and child welfare clinics.

TABLE 33.

District and Centre	Confinements (excluding miscarriages.)	Still Births.	Live births.	Miscarriages.	Threatened miscarriages.	Other conditions unclassified.	Maternal Deaths.	Deaths Neo-natal.	New ante-natal cases.	Infant welfare new cases.	Total O.P. attendances.
Mengo—											
Nsambya ...	929	46	883	52	16	388	15	43	1,613	920	7,723
Rubaga ...	141	7	134	9	6	28	1	4	424	86	2,264
Kisubi ...	219	6	213	10	6	90	2	3	631	...	1,694
Namilyango ...	121	3	118	3	2	...	...	...	232	100	1,339
Nagalama ...	158	14	144	13	24	22	...	1	406	178	1,539
Nkokonjeru ...	226	2	224	23	18	32	...	14	650	424	3,465
Nyenga ...	142	2	140	4	34	15	1	3	358	70	2,007
Gayaza ...	183	4	179	10	24	13	...	4	410	239	1,746
Namagunga ...	82	1	81	2	4	4	...	...	293	78	1,086
Katende ...	182	7	175	9	32	12	...	2	448	200	2,340
Masaka—											
Bikira ...	264	6	258	28	103	68	...	...	885	...	2,181
Villa Maria ...	353	7	346	15	55	39	...	3	783	...	2,715
Mitala Maria ...	372	21	351	35	36	42	...	6	1,420	328	3,352
Busoga—											
Iganga ...	208	6	202	3	5	79	...	2	1,113	436	3,590
Budini ...	279	26	253	14	65	30	...	8	1,799	282	5,562
Kamuli ...	440	34	406	33	190	312	...	15	2,114	502	9,860
Mbale—											
Palissa ...	37	1	36	2	2	18	1	1	108	45	611
Dabani ...	152	...	152	3	13	14	1	...	284	232	701
Nagongera ...	83	1	82	8	32	22	...	...	292	...	1,384
Teso—											
Ngora ...	80	2	78	2	12	4	...	...	97	24	289
Lwala ...	129	8	121	8	26	22	2	3	449	144	5,438
TOTAL ...	4,780	204	4,576	286	705	1,254	23	112	14,819	4,288	60,886

SECTION VI.—HOSPITALS AND DISPENSARIES

78. Hospitals

Nineteen district hospitals (including Mulago) and 8 rural hospitals were maintained during the year. Owing to the shortage of European

medical officers, five District units with their associated dispensaries were under the direct supervision of sub-assistant surgeons or assistant medical officers (African). Hospital accommodation varied from 637 beds (Mulago) to 24 beds (Moroto).

No new hospital units were built during the year, but several minor additions and improvements were effected. At Mulago a new sterilising room and an instrument room to serve the two theatres in the surgical unit were built. An office and changing room for the pathologist was added to the mortuary. Quarters to house 80 nurses were almost completed by the end of the year.

Extensions to the mental hospital were completed towards the end of the year, and accommodation for 320 patients is now available. The extended male and female sick bays were put into use when completed, but occupation of three new wards—two male and one female—and additional cubicles was deferred until the new year.

At the European and Asian Hospital in Kampala, a new block was completed and a new X-ray unit put into operation in the early part of the year. Additional electrical fittings and apparatus were also installed at this hospital.

Ancillary buildings were constructed at Jinja and Fort Portal Hospitals.

Improvements at Mityana Rural Hospital included the extension of two wards and the construction of new offices, a dispensary, store, laboratory and four staff quarters.

The temporary smallpox hospital at Old Entebbe was dismantled during the year, the buildings being used to provide additional office accommodation at Medical Headquarters.

79. Dispensaries and Aid Posts

One hundred and thirty-nine dispensaries, of which 52 were provided with ward accommodation, and 136 aid posts were in use in 1948. Eight new dispensaries were built by the Native Administrations, some in permanent materials, others in wattle and daub. The replacement of temporary by permanent buildings has been carried out in a number of units, while in others accommodation has been extended and facilities improved.

The popularity of dispensaries continues to grow and insistent demands are being made by Native Administrations for the opening up of more units. It has become necessary to stress the importance of correlating the expansion of rural dispensary services with the resources of the Department and to point out that the building of new dispensaries must necessarily keep in step with facilities for the training of staff and for ensuring their efficient operation. It is felt, moreover, that the time has come when active consideration must be given by Native Administrations to the development of public health services and of measures more specifically directed to the prevention of disease, even if this involves some reduction in the rate of expansion of the dispensary and aid post systems. It is only by these

means that an adequate return, in terms of rising standards of health, can be expected from the public funds available for medical services.

Every district is now provided with at least one ambulance by means of which those suffering from serious disease or injury can be evacuated speedily to a central institution where more skilled aid is available.

In Busoga, the Native Administration has introduced a mobile medical treatment unit, the object of which is to enable persons who have no dispensary or aid post within a reasonable distance to obtain treatment for minor complaints.

80. Hospitals and Dispensary Returns

In Table 34 is set out the number (a) of all new cases treated, both in-patients and out-patients, and (b) the total number of attendances, in respect of hospitals and dispensaries, for the years 1947 and 1948.

TABLE 34.

	1947			1948		
	New Cases	Re-attendances	Total Attendances	New Cases	Re-attendances	Total Attendances
Hospitals ...	871,565	980,663	1,852,228	841,005	1,023,704	1,864,709
Dispensaries ...	1,421,560	1,946,219	3,367,779	1,418,106	1,881,804	3,299,910
TOTAL ...	2,293,125	2,926,882	5,220,007	2,259,111	2,905,508	5,164,619

New Cases include examinations.
Hospitals include district and rural hospitals.
Dispensaries include aid posts.

The following Table gives the numbers of European, Asian and African new cases treated at district and rural hospitals.

TABLE 35.

	1947		1948	
	Total New Cases	Hospital admissions	Total New Cases	Hospital admissions
European ...	3,529	1,235	4,831	1,312
Asians ...	12,491	2,575	12,016	2,463
African ...	855,545	79,642	824,158	86,426

Tables 36 gives the total numbers of in-patients, in-patients days and surgical operations performed at all hospitals, together with those of the previous year.

TABLE 36.

	1947	1948
In-patients ...	83,452	90,201
In-patient days ...	942,468	1,038,896
Surgical operations ...	8,891	10,184

Returns from the various divisions and units of Mulago Hospital are as follows:—

TABLE 37.

	IN-PATIENTS				OUT-PATIENTS		
	Number remaining at end of 1947.	Number admitted during 1948.	Number discharged during 1948.	Number died.	Number remaining at end of 1948.	New cases.	Re-attendances.
Medical	185	4,650	4,218	412	205	36,825	
Surgical	158	4,308	4,082	191	193	21,086	
Obstetrical	78	2,606	2,569	42	73	9,534	
Ophthalmic	28	514	526	1	15	4,071	
Ear, Nose, Throat ... ..	...	...	...	...	...	2,469	
V.D.	59	1,689	1,641	21	86	12,189	
Dental	0	83	82	1	0	5,769	
TOTAL	508	13,850	13,118	668	572	91,943	121,926

A total of 4,567 surgical operations were performed.

81. Diseases treated

Communicable Diseases.—The treated cases in this group were 271,158 with 1,029 deaths. Malaria accounted for 101,889 cases and 320 deaths. There were 47,854 cases of syphilis and 35,913 of yaws. This group compares 32·2 per cent. of the total number of cases treated at all hospitals.

General Diseases.—37,872 cases were treated of which rheumatic conditions (a heterogeneous group) accounted for 29,154. There were 179 cases of malignant disease with 17 deaths.

Affections of the Nervous System and Organs of Sense.—There were 48,096 cases and 44 deaths in this group. Diseases of the eye totalled 29,859 of which 5,561 were trachoma.

Affections of the Circulatory System.—Of 1,508 cases, 813 appear under the heading of heart disease. There were 94 deaths.

Affections of the respiratory system.—83,373 cases were treated, 7,947 of which were admitted to hospital; there were 436 deaths. Pneumonia accounted for 383 deaths among 5,256 cases of the disease admitted to hospital—a death rate of 7·3 per cent.

Diseases of the Digestive System.—Attendances in respect of this group were 84,045, of which 15,413 were recorded as diarrhoea and enteritis.

Diseases of the Genito-urinary System.—A total of 6,544 non-venereal cases were recorded, 4,221 of these being females. Nephritis accounted for 502 cases.

Diseases of Pregnancy, Childbirth and the Puerperal state.—66,580 cases attended Government centres for ante-natal supervision. A total of 13,200 women terminated their pregnancies in hospitals and maternity centres. Live births amounted to 11,711, whilst there were 767 cases of abortion. Maternal deaths totalled 226.

Diseases of the Skin, Cellular tissues, Bones and Organs of locomotion.—115,656 cases were recorded, among which ulcers and scabies were the commonest conditions.

Affections produced by external causes.—There were 71,208 cases, ranging from minor injuries to fatal accidents, 196 deaths occurred in hospital.

82. The following were the principal causes of deaths in all hospitals.

TABLE 38.

	1947	1948
Total admissions	83,452	90,201
Total deaths	2,893	3,023
Pneumonia	431	383
Malaria	261	320
Accidents	160	195
Disease of skin and cellular tissues	215	135
Diseases of blood and blood forming organs	78	134
Pulmonary tuberculosis	119	116
Nutritional diseases	75	106
Diseases of pregnancy and the puerperal state	99	105
Diseases of circulatory system	75	94
Gonorrhoea	59	88
Dysentery	57	74
Typhoid fever	44	58
Syphilis	33	47
Hernia, intestinal obstruction	127	133
Deaths in hospitals as a percentage of total admissions	3·46	3·35

83. Information regarding the number of hospitals and beds in each Province, the number of in-patients and out-patients according to race, treated in each Province and the totals for the Protectorate is summarised in Table 39.

TABLE 39.

	Buganda Province	Eastern Province	Western Province	Northern Province	Protectorate Totals
Medical Units					
European Hospitals ...	2	2	...	...	4
Asian Hospitals ...	3	4	2	1	10
African Hospitals—					
Station ...	4	4	5	6	19
Rural ...	2	6	...	...	8
African Dispensaries ...	32	26	41	40	139
African Aid Posts ...	45	14	41	36	136
In-Patients					
Beds available—					
Europeans ...	67	5	1	...	73
Asians ...	49	31	7	3	90
African Hospitals—					
Station ...	1,085	543	309	349	2,286
Rural ...	88	241	...	...	329
African Dispensaries ...	192	375	268	81	916
TOTAL ...	1,481	1,195	585	433	3,694
Cases Admitted					
Europeans ...	1,235	76	1	...	1,312
Asians ...	1,717	591	132	23	2,463
Africans ...	29,963	33,938	11,975	10,550	86,426
TOTAL ...	32,915	34,605	12,108	10,573	90,201
TOTAL NUMBER OF DAYS TREATMENT ...	454,365	303,072	167,699	113,736	1,038,872
Out-Patients					
A. TOTAL NEW CASES—					
(a) Hospitals—					
Europeans ...	3,337	917	462	115	4,831
Asians ...	4,721	6,034	902	359	12,016
Africans ...	215,319	353,669	121,791	133,379	824,158
TOTAL ...	223,377	360,620	123,155	133,853	841,005
(b) Dispensaries and Aid Posts TOTAL ...	356,341	351,175	348,774	361,816	1,418,106
TOTAL NEW CASES ALL UNITS ...	579,718	711,795	471,929	495,669	2,259,111
B. TOTAL REATTENDANCES ALL UNITS ...					
	902,558	676,696	727,776	598,478	2,905,508
GRAND TOTAL ATTENDANCES	1,482,276	1,388,491	1,199,705	1,094,147	5,164,619

84. A statistical return of the diseases treated in district and rural hospitals, i.e. in all units in charge of an officer not below the rank of assistant medical officer, is set out in Appendix V.

Dental Division

85. Two regular dental clinics are conducted, one for Europeans and Asians at the European Hospital, Kampala, and the other for Africans at Mulago.

European and Asian Dental Clinic.—The staff employed in 1948 consisted of a dental surgeon, a dental mechanic and two African dental orderlies. In addition to the central clinic at the European and Asian Hospital, a clinic is held at Entebbe twice weekly, while all district headquarters are as far as possible visited at least once during the year.

The number of patients seen by the Dental Surgeon in 1948 was 2,199 compared with 2,145 in 1947.

The work performed during the year is summarised in Table 40.

TABLE 40.

Permanent fillings	...	...	...	...	803
Extractions under general or local anaesthesia	...	...	...	...	530
Scaling and polishing	...	...	...	...	383
New dentures...	...	...	...	...	31
Inlays	...	...	...	...	6
Crowns	...	...	...	...	1
Bridges	...	...	...	...	2
Orthodontic appliances	...	...	...	...	1
X-Ray examinations	...	...	...	...	194

Mulago Hospital Dental Clinic.—The Dental Surgeon in charge of this clinic was on vacation leave from the end of April until the end of the year. Routine work, consisting for the most part of extractions and simple dressings, was performed in his absence by an African assistant.

A total of 5,769 cases were attended to, 83 of whom were admitted to the wards.

Among cases treated at the clinic were 12 cases of severe osteomyelitis of the jaw and two cases of fractured maxillas.

In the early part of the year, the Dental Surgeon paid a visit of one month's duration to Toro District where schools were visited, treatments given where necessary, and lectures on oral hygiene delivered to school children and teachers.

SECTION VIa.—TRAINING OF SUBORDINATE PERSONNEL

86. In 1948 the decision was taken to reorganise the training of male medical and nursing aids whereby the Masaka Training Centre will undertake the training of medical assistants only and the Lira Centre the training of nursing orderlies only. Mulago will eventually cease to function as a training centre for medical assistants. The new system will come into operation at the beginning of 1949, although medical assistant trainees already undergoing courses at Mulago will continue there until the completion of their course at the end of 1949.

87. Medical Assistants

The course for civilian candidates, who are required to have reached Secondary III standard of general education, lasts three years. No new candidates were accepted for training at Mulago in 1948 but 22 second-year and 17 third-year pupils continued their studies there during the year.

Selected ex-army personnel who had successfully completed their training as nursing orderlies at Masaka and Lira received a special one year course to enable them to qualify as medical assistants.

Of 17 Mulago entrants for the final examination, 16 passed and thereby qualified as medical assistants; all were absorbed into Government service.

88. Nursing Orderlies

The one year course of instruction for ex-army nursing orderlies was continued both at the Masaka and Lira Training Centres. Each Centre is in charge of a medical officer who is assisted by a sister tutor and two African instructors.

Of 111 trainees from both Centres 85 completed the prescribed course and 70 passed the examination to qualify as nursing orderlies.

89. Nurses

A three year course of training is given at Mulago Hospital and at the Mengo and Nsambya Training Schools. The curriculum and examination, arranged by a committee representative of the Department and the two Mission bodies, are common to all three schools.

During 1948 the arrival of a qualified Sister Tutor at Mulago helped to improve the work of the School. Of 10 candidates presented for the General Nursing examination in November, seven passed.

Seventeen out of 20 entrants from the Mengo Training School were successful in their qualifying examination, while all five candidates from the Nsambya School satisfied the examiners and obtained their certificates.

90. Midwives

A two year course of training is provided at the Lady Coryndon Maternity Training School, Mengo and at the Nsambya Training School, the examinations being conducted under the auspices of the Uganda Midwives' Board, the Obstetrical Specialist being Chairman of the examiners. Of 24 entrants, 22 passed the qualifying examination.

91. Assistant Health Inspectors

Fourteen trainees who had completed their three year course took the examination for the Certificate of the Royal Sanitary Institute conducted by the Joint East African Examining Board. Of these, seven passed and thus qualified as Assistant Health Inspectors. In December the Hygiene School was transferred from Mulago to Mbale.

92. Hygiene Orderlies

One year courses for hygiene orderlies are given at Mbale. The courses are designed to provide an essentially practical training in rural health work, comprising rural sanitation, building construction and the

hygiene of food and water supplies. The school is in charge of a European Health Inspector assisted by four African Instructors.

Most tribes of the Protectorate were represented in the 1948 course, all trainees being ex-service men. Of 49 accepted for training, 41 passed the examination to qualify as hygiene orderlies.

93. Dispensers

The three year course for dispensers is conducted by a pharmacist at Mulago Hospital. With the posting of a second pharmacist to the Dispensary during the year it was possible to devote more time and attention to training.

Eight new trainees were admitted at the beginning of the year, the total number in training being 22. Four took the final examination and all qualified to become dispensers.

94. Laboratory Assistants

The training of laboratory assistants is undertaken at the Central Laboratory, Kampala, under the direction of the Senior Pathologist. The posting of a second European technician to the laboratory has enabled the teaching to be brought to a higher standard.

SECTION VII.—PRISONS

95. Protectorate Government Prisons

The new prison at Mbarara was completed and put into service during the year; construction of a new prison was in progress at Masaka.

Statistics of morbidity and mortality for 1948 in respect of each Protectorate Prison are as follows:—

TABLE 41.

Prison	Daily average	Daily average on sick list	Admissions to hospital	Deaths
Central Prison, Luzira...	1,057	10·80	207	13
Prison Farm ...	338	0·48	161	1
Arua ...	72	1·59	66	3
Fort Portal ...	29	0·30	24	...
Gulu ...	68	3·86	107	3
Jinja ...	95	3·09	138	1
Lira ...	63	0·20	42	3
Masaka ...	86	1·48	119	1
Mbale ...	82	1·01	66	1
Masindi ...	91	0·90	68	1
Mbarara ...	95	2·15	49	...
Moroto ...	56	0·61	74	4
Soroti ...	79	0·86	48	1
Tororo Camp ...	23	1·24	89	...
TOTAL ...	2,234	28·57	1,258	32

Malaria, tropical ulcer, minor injuries and upper respiratory infections were, as in previous years, the most prevalent causes of illness.

There were 32 deaths among prisoners in 1948; a similar number of deaths occurred in the previous year. The causes of death were:—

Pulmonary tuberculosis	...	5	Enteritis	...	...	...	1
Pneumonia	...	4	Malaria	...	...	...	2
Cerebro-spinal meningitis	...	3	Dysentery	...	...	...	2
Pneumococcal meningitis	...	1	General debility	...	...	...	1
Cerebral haemorrhage	...	1	Accident	...	...	...	1
Syphilitic aortitis	...	1	Bullet wounds	...	...	...	2
Nephritis	...	2	Suicide	...	...	...	1
Heart failure	...	1	Dementia	...	...	...	4

For all Protectorate jails the daily average sickness (off-duty) rate was 12.5 per 1,000 and the mortality rate 13.9 per 1,000 per annum. In no cases were sickness and death rates at individual jails significantly in excess of the overall Protectorate rates.

96. Central Prison, Luzira

Overcrowding continues to prevail at this Prison, but improvement should result when a new double-storied communal block, construction of which was started during the year, has been completed and occupied. The new Remand Prison in Kampala is at present nearing completion and will further help to relieve congestion.

The recidivist section of the Jail still lacks water-borne sanitation, and the bucket system of conservancy is far from satisfactory.

The quarters provided for warders and their families are in a ruinous state. Plans for their replacement by new and up-to-date quarters were under way by the end of the year.

The health of prisoners was generally good, and apart from two minor outbreaks of influenza, no epidemics of infectious disease were reported.

Despite the primitive sanitation the incidence of dysentery was surprisingly low and only one case of typhoid was notified during the year.

Thirteen deaths occurred in 1948, four of these being caused by tuberculosis.

Twenty-two prisoners suffering from leprosy were kept segregated in special quarters.

A few cases of vitamin A deficiency were diagnosed in the early months of the year when green vegetables were scarce; this necessitated a temporary dietary adjustment.

97. Native Administration Prisons

Overcrowding was reported at Native Administration jails in many districts. Many of them are dark, unventilated buildings and frequently in a dilapidated condition; progress in remedying defects is being made in some districts. Louse infestation of the clothing of prisoners is dealt with at many institutions by regular use of the Carnie disinfector.

Several jails in Buganda and the Western Province were found infested with spirillum tick (*O. moubata*) and good results were reported from the use of gammexane dust.

Despite the insanitary conditions prevailing at many of these jails there were no adverse reports on the health of the prisoners.

SECTION VIII.—PROTECTORATE MENTAL HOSPITAL

98. Accommodation for patients was increased during the year by the construction of three new wards, two male and one female, and some additional single rooms. It was not found possible to occupy this new accommodation before the end of the year because of the lack of suitable door locks. A new laundry has also been constructed and will be ready for use in 1949.

Overcrowding of the Hospital still persisted to a considerable degree, although as a relief measure selected district (Protectorate Government) prisons continued to be used temporarily as mental hospitals.

The accommodation available, excluding the new wards, was sufficient for 200 patients (130 males and 70 females), whereas the total number actually in residence at the end of 1948 was 295 (205 males and 90 females), of whom three were Asians (two males and one female).

99. Extensions and improvements to the male and female sick bays were completed before the end of the year and have led to greater efficiency in nursing and treatment, particularly in regard to the reception of new cases.

100. The new Macphail-Strauss Electrical Convulsant Therapy unit arrived in June and has produced most encouraging results.

101. Occupational therapy now forms an important part of the treatment given to selected cases, and a daily average of 238 patients were engaged in some form of work, 86 being employed in the hospital garden; others carried out menial duties in the wards, kitchens and laundry, while a varying number of female patients were occupied in needlework, knitting and rug-making.

102. A new diet was introduced in the latter part of the year, being more varied, abundant and palatable than that formerly in use. In the last quarter of the year there was an average increase in weight of $2\frac{1}{2}$ lbs. per patient.

103. Admission (including re-admissions) to the Institution numbered 123 males and 36 females, whilst discharges amounted to 72 males and 19 females.

The numbers of admissions, discharges and deaths and of those receiving convulsant therapy are given in Table 42.

TABLE 42.

Particulars	Class	Male	Female	Total
First admissions ...	Civil ...	104	30	134
	Criminal ...	6	3	9
	TOTAL ...	110	33	143
Re-admissions ...	Civil ...	12	2	14
	Criminal ...	1	1	2
	TOTAL ...	13	3	16

TABLE 42—*continued.*

Particulars	Class	Male	Female	Total
Total admissions ...	Civil ...	116	32	148
	Criminal ...	7	4	11
	TOTAL ...	123	36	159
Total number under convulsant therapy...	Civil ...	52	26	78
	Criminal ...	...	...	...
	TOTAL ...	52	26	78
Discharges ...	Civil ...	67	19	86
	Criminal ...	5	...	5
	TOTAL ...	72	19	91
Deaths ...	Civil ...	72	22	94
	Criminal ...	7	2	9
	TOTAL ...	79	24	103
Remaining at end of year ...	Civil ...	167	79	246
	Criminal ...	38	11	49
	TOTAL ...	205	90	295
Daily average on register ...	TOTAL ...	220·75	89·25	310
Percentage of discharges on Total admissions ...	...	...	...	57·23
Percentage of deaths on daily average number ...	...	...	...	33·23

No European cases were admitted during the year.

104. There were 103 deaths during the year (79 males and 24 females) compared with 58 in 1947. The main causes of death were as follows:—

Neurosyphilis ...	26	Amæbic dysentery ...	5
Pulmonary tuberculosis ...	7	Malnutrition ...	8
Pneumonia ...	12	Acute bacillary dysentery ...	3

SECTION IX.—SCIENTIFIC

Laboratories Division

REPORT OF THE SENIOR PATHOLOGIST

105. Forty-two African Laboratory Assistants were employed in the Medical Department Laboratories during the year.

106. A closer integration of laboratory facilities with the clinical work at Mulago Hospital was effected by the transfer of all simple routine tests required by the Hospital to the laboratory at Mulago, reserving the more complicated investigations for the Central Laboratory. Weekly conferences were instituted in co-operation with the Medical and Surgical Divisions, a step which led to administrative improvements.

107. Of an approximate total of 76,700 laboratory examinations undertaken in respect of African patients, 66,800 specimens were received from Mulago and 9,000 from other sources. Of the former, 31,700

specimens were examined at the Hospital laboratory and 35,100 at the Central Laboratory.

108. On the initiative of the Uganda Branch of the British Red Cross Society a Blood Bank has been established in Kampala. The Laboratory Services have assisted by grouping donors, collecting, storing, testing and issuing blood.

109. The manufacture of antigen for the Kahn test is now undertaken by the laboratory. Not only is the fresh product better than that imported, but the cost to the Department has been reduced from Shs. 102 to Shs. 5 per month.

110. On the recommendation of the Inter-territorial Leprologist, the regular preparation of Lepromin by Dharmendra's method has been commenced. Lepromatous material is supplied from leper settlements and the finished product returned to the same institutions for use.

111. The stock of laboratory animals has been increased by the adoption of improved methods of feeding.

112. A total of 6,722 persons, comprising 372 Europeans, 1,775 Asians and 4,575 Africans were inoculated against yellow fever at the Medical Laboratory.

113. 1,027,585 doses of vaccine lymph obtained from Nairobi were distributed during the year.

114. The storage, distribution and care of all microscopes in the Department has now become the responsibility of the Laboratory.

115. Revenue from work undertaken for private practitioners and others reached the record amount of Shs. 4,635 in 1948.

116. Autopsies at Mulago Hospital

A total of 546 autopsies were performed on 756 corpses received from the wards. An indication of the increase in the numbers of such examinations performed in recent years is as follows:—

1944	...	...	...	288	1947	...	...	...	475
1945	...	...	...	262	1948	...	...	...	546
1946	...	...	...	454					

The main causes of death found were as follows:—

Pneumonia and its complications	59	Malnutrition	...	...	30
Pulmonary tuberculosis	...	52	Typhoid fever	...	28
Trauma	...	38	Abdominal emergencies	...	24
Neurosyphilis	...	37	Tumours	...	17

117. Medico-Legal Examinations

Autopsies performed at request of Police or Coroner	...	177
Exhibits examined for blood stains	...	126
Other exhibits examined	...	8

118. Specimens obtained from 306 autopsies were examined histologically in addition to 507 specimens derived from biopsy.

Of 150 specimens of biopsy tumour material submitted, 53 were carcinomata of determinable origin, 32 of which were epidermal; no fewer than 12 were from the penis.

One case of rodent ulcer and two of carcinoma of the cervix uteri were diagnosed in African patients. Out of 10 mammary cancers seven occurred in African women. Only one case of carcinoma of the bladder was met with; this was a sequel of schistosomiasis. Four cases of Kaposi's sarcoma and seven of melanotic sarcoma were seen.

Of the lymph nodes submitted, one-third were tuberculous, while there were five examples of lymphosarcoma and two of Hodgkin's disease. One case of endometriosis of the umbilicus in a European and one of temporal arteritis in an African were among the rarities recorded.

Bacteriology

119. Bacteriological examinations as detailed below were carried out during the year:—

TABLE 43.

	European	Asian	African	TOTAL
Culture of faeces	39	14	300	353
Culture of urine	85	40	113	238
Culture of blood	14	2	372	388
Culture of cerebro-spinal fluid ... ..	...	...	128	128
Culture of body fluids	3	2	106	111
Culture of pus	2	9	85	96
Culture of swabs	53	44	492	589
Culture of sputum	6	6	30	42
Agglutination tests, Widal	12	29	915	956
Agglutination tests, Weil-Felix	8	14	485	507
Agglutination tests, <i>Brucella</i>	11	5	69	85
Blood and C.S. for <i>T. recurrentis</i> ... ..	...	...	19	19
Examinations for fungi	1	1	5	7
Vaccines prepared ... ..	...	...	...	5
Sterility tests on drugs ... ..	...	...	...	229
Water samples (from 50 sources) ... ..	...	...	...	182

120. Typhoid

In view of the apparent increased prevalence of this disease in the vicinity of Kampala, an effort is being made in collaboration with the health staff of Kampala and Mengo District to prevent possible carriers of infection from handling food.

The Vi agglutination test is being used followed by stool examination if such is indicated. In August, an outbreak of typhoid occurred at a school in Ankole District; this was investigated on the spot by a pathologist from Kampala.

121. Typhus

Of 507 sera submitted for the Weil-Felix test, 111 reacted positively with *Proteus* OX19 (presumed murine typhus), 5 with OX19 and OX2 (presumed tick-borne typhus) and 1 with OXK. Efforts made to isolate the virus and so determine the strain proved unsuccessful.

122. Relapsing Fever

In collaboration with a specialist physician an investigation of the efficacy of penicillin therapy in this disease was initiated. An attempt is

being made to correlate the levels of penicillin in the blood and cerebro-spinal fluid with the disappearance of *T. recurrentis* from these fluids.

TABLE 44.

123. Pathological Examinations

	European	Asian	African	TOTAL
Blood sugar	8	16	15	39
Glucose Tolerance Test	2	14	3	19
Blood urea	5	11	248	264
Blood N.P.N.	1	...	103	104
Urea Concentration tests	1	3	9	13
Van den Bergh tests	1	11	146	158
Blood proteins ... ..	...	...	403	403
Lange tests ... ..	...	...	162	162
Thymol turbidity tests ... ..	...	1	47	48
Miscellaneous	12	18	602	632

TABLE 45.

Tests for Venereal Disease

- (a) *Kahn Tests*.—Number of tests on blood 27,501
 Number of tests on cerebro-spinal fluids 495
 64% of the specimens examined gave negative reactions.
- (b) Dark-ground examinations for spirochaetes. Number of tests 1,241, of which 61.8% were positive.
- (c) Smears for gonococcus. Number of tests, 9,371, of which 51.7% were positive.

TABLE 46.

	European	Asian	African	TOTAL
Haemoglobin estimations	13	3	1,761	1,777
Red cell counts	12	5	1,396	1,413
White cell counts	20	11	1,812	1,843
Differential counts	32	61	1,800	1,893
Platelet counts	3	...	6	9
Reticulocyte counts ... ..	...	...	51	51
Packed cell volume ... ..	...	...	229	229
Bleeding and clotting times ... ..	...	1	10	11
Fragility tests ... ..	...	...	9	9
Blood grouping	4	6	330	340
Sedimentation rate	13	1	185	199
Tests for sickling ... ..	...	...	1,062	1,062

TABLE 47.

BLOOD SMEARS FOR PARASITES.

	European	Asian	African	TOTAL
Total smears examined	249	258	19,228	19,735
Positive for malarial parasites	22	32	3,256	3,310
Positive for treponemata ... ..	...	...	53	53
Positive for trypanosomes ... ..	...	...	2	2

TABLE 48.

OTHER ROUTINE TESTS.

	European	Asian	African	TOTAL
Faeces	228	127	3,248	3,603
Urines	638	356	1,130	2,124
Sputum	13	26	1,211	1,250
Cerebro-spinal fluid	1	8	552	561
Miscellaneous smears, etc. ... ..	...	...	436	436

Certain of the positive findings in routine tests were as follows:—

TABLE 49.

	European	Asian	African	TOTAL
(a) <i>M. tuberculosis</i> in sputum	1	2	259	262
(b) <i>E. histolytica</i> in stools	8	2	64	74
(c) <i>S. mansoni</i> in stools ... ..	...	...	11	11
(d) <i>S. haematobium</i> in urines ... ..	...	...	2	2

REPORT OF THE GOVERNMENT CHEMIST

124. The total number of samples and exhibits examined during the year was 178.

125. Water.

Forty-four samples of water intended for domestic use or industrial purposes were received for chemical analysis. A monthly check of the water-purifying plant at Tororo was made.

126. Food and Drugs.

Among the 16 samples examined, were three of cow's milk, nine of maize meal and one of wheat flour. The maize meals were investigated to ascertain their keeping qualities. The results of the tests undertaken showed that the meals remained wholesome after several weeks' storage provided that the moisture content did not exceed ten to eleven per cent.

127. Forensic Chemical Examinations

Sixty-nine exhibits were examined in 28 cases, the majority being submitted for the identification of poisons. Toxic substances found included arsenic, phenol, cresol, caustic soda, oil of turpentine and a species of euphorbia.

Six samples of liquid suspected to contain alcohol were examined.

128. Miscellaneous

Other samples submitted for chemical analysis included sesame oil, soap, ghee, perfume and native beer.

REPORT OF THE ENTOMOLOGICAL DIVISION

129. Two tsetse surveys were undertaken by the Entomological Division during the year. The first, in January, was made with the object of determining the distribution of *G. pallidipes* on the Island of Buvuma, the results of which are described in Section III A (1) (a) of this Report. In August, a survey of Busongora County, Toro, in the Lake Edward-Lake George Sleeping Sickness Area was undertaken, as a result of which the boundary of the Sleeping Sickness Area was extended.

130. In the course of the year mosquito surveys were made at Mityana, Soroti, Mbale, Butiaba, Hoima and Arua. It was found that, with the exception of Soroti, the standard of maintenance of antimalarial work in these townships had shown a tendency to deteriorate in recent years. With a view to correcting this decline the Entomologist prepared an illustrated description of the commonest forms of mosquito breeding-places to be found in townships with suggestions for their control. Copies of this pamphlet were distributed to all district medical officers.

131. Field trials were carried out with the object of ascertaining the relative efficacy of various types of larvicide compared with the antimalarial oil ('malariol') at present in general use. Of the substances tested, a D.D.T. aqueous emulsion and a brand of "High Spread" anti-malarial oil manufactured by the Shell Company were found to be far superior to 'malariol' and, subject to certain reservations, there appears to be a good case for the general adoption of these preparations for larvicidal use.

132. The problem of onchocerciasis and its principal vectors was given considerable attention by the Division during the year.

Dr. B. de Meillon, an eminent Medical Entomologist of the S.A. Institute for Medical Research, visited Uganda during September and October and in company with the Entomologist of this Department carried out a brief survey of the distribution of *Simulium* in the Protectorate.

The genus was found breeding in several areas not hitherto thought to be infested. Contrary to a common belief that *S. damnosum* breeding was confined to the turbulent waters of the Ripon and Owen Falls near Jinja, breeding was found along the entire length of the Nile between the Ripon Falls and Mbulamuti. Breeding was also detected at the Sezibwa Falls near Lugazi and even in the small falls along irrigation channels on the Lugazi Sugar Estate.

S. naevei was taken from streams in Ankole District and *S. damnosum* from streams crossing the Katwe-Fort Portal Road. In Kigezi (Kayonza Gombolola) a number of cases of onchocerciasis among the indigenous population had been confirmed microscopically by the Entomologist. All gave a history of having been bitten by insects while working in the fields, but in the limited time available a search for *Simulium* proved fruitless. Nevertheless the streams in this locality appear to provide highly suitable breeding conditions for *S. naevei*.

Among Dr. de Meillon's recommendations, were the following:—

(a) The possibility of eradicating *S. damnosum* completely from the Nile with the aid of D.D.T. emulsion should be considered.

(b) Pending permanent eradication or control of *Simulium*, work men employed on the hydro-electric scheme and dam should be protected by repellants and should wear long trousers and boots.

(c) A full investigation into the bionomics of *Simulium* and its breeding places should be initiated.

(d) The incidence of onchocerciasis and its importance in the production of disability among the people living in the infested areas should be determined.

(e) An attempt should be made to find the vector of onchocerciasis in Kigezi.

133. A course of instruction in Medical Entomology was given to final-year medical students, and a month's practical course was held for those in training as assistant health inspectors.

REPORT OF THE RADIOLOGICAL DIVISION

134. The staff employed in this Division consisted of a Specialist Radiologist, a Radiographer, five darkroom attendants and an African clerk.

135. Early in 1948 a new Watson Röntgen IV X-Ray apparatus was installed at the European Hospital, Kampala. A new Watson portable machine was obtained for use in Kampala and an old Victor portable machine transferred for use in Jinja.

136. The total number of cases examined in Kampala was 3,608, compared with 2,759 in 1947.

REPORT OF THE PHARMACEUTICAL DIVISION AND MEDICAL STORE

137. The staff of this division comprises the Chief Pharmacist, five Pharmacists, two of whom are stationed at Mulago Hospital, four Asian clerk-storekeepers and 81 Africans employed as clerks, dispensers, pharmacy orderlies, artisans, packers and porters.

138. With the growing activities of this Division, the handicap of insufficient and unsuitable storage space and accommodation for the manufacture of pharmaceutical preparations is becoming increasingly evident. The only addition to existing accommodation at the Central Store, Entebbe, during the year was the provision of a cold room intended primarily for the storage of antibiotics. An additional room was acquired at Mulago for the preparation and issue of drugs to the wards and dispensaries.

139. With the posting of a second Pharmacist to Mulago during the year it was possible to improve the standard of teaching in the dispensers' training course and at the same time to exercise a stricter control over dispensing activities in the Hospital.

140. Departmental expenditure on medical stores in 1948 amounted to £145,998 compared with £117,000 in the previous year. The value of locally-produced pharmaceutical preparations in 1948 is estimated at £27,594, inclusive of £5,000 for freight charges. This represents a gross saving to the Department of £16,000, taking into consideration the cost of these products if purchased in their manufactured state from overseas sources. The relative saving on imported articles is proportionately higher in the case of such preparations as ampoules, injection solutions and sterile products. It is evident, therefore, that local production of these classes of preparations is effecting valuable economies.

141. The following table shows the output of various preparations manufactured in the pharmaceutical section during the past three years.

TABLE 50.

Product	1946	1947	1948
Sterile preparations:—			
(a) ampoules	80	267	442
(b) bottles	2,700	1,653	3,319
(c) litres	1,919	3,328	3,752
(d) Kg. ... ..	...	...	6
Liniments—pints	6,512	4,465	4,763
Liquors—pints	226	820	909
Mixtures (conc.)—pints	352	1,496	913
Spirits—pints	1,712	1,464	1,426
Sprays—pints	6,803	6,491	7,162
Syrups—pints	797	1,117	1,513
Tinctures—pints	2,530	3,590	5,313
Ointments—lbs.	27,037	27,445	30,454
Infusions—pints	246	896	942
Miscellaneous—pints, litres or lbs.	14,584	17,390	10,639

SCIENTIFIC PAPERS

148. The following scientific papers were published during the year:—

LEHMANN, H. AND BAIRD, R. B. "Haemoglobin Estimation by the Cyanhaematin method. A modification for use in warm climates". *Trans. R. Soc. trop. Med. Hyg.*

DAVIES, J. N. P. "Pathology of Central African Natives". *E.A. Med. J.*, Vol. 25, pp. 117, 229, 322, 454.

DAVIES, J. N. P. "Endocardial Fibrosis in Africans". *E.A. Med. J.*, Vol. 25, p. 10.

DAVIES, J. N. P. "Essential Pathology of Kwashiorkor". *Lancet*, 1948, I, 317.

RAPER, A. B. "Pigmentation of the Tongue". *E.A. Med. J.*, Vol. 25, p. 245.

RAPER, A. B. "The Tongue as an Index of Dietary Deficiency". *Leeds Univ. Med. Mag.*, Feb. 1948.

RAPER, A. B. "Sudden Death in Sickle Cell Disease". *E.A. Med. J.*

TONKIN, I. M. AND HAWKING, F. "The Technique of testing Chemotherapeutic action on *Plasmodium gallinaceum*". *B.J. Pharmacology and Chemotherapy*, Vol. 2, p. 221.

TONKIN, I. M. AND HAWKING, F. "The growth of Protozoa in Tissue Culture". *Trans. R. Soc. trop. Med. Hyg.*, Vol. 41, p. 407.

DAVIES, J. N. P. "Case of Primary Hepatic Carcinoma". *Lancet*, 1948, 2, p. 474.

RAPER, A. B. "Cerebral Schistosomiasis". *E.A. Med. J.*, Vol. 25, p. 252.

BURKITT, D. P. "Spontaneous Rupture of the Spleen". *E.A. Med. J.*, Vol. 25.

TROWELL, H. C. "Medical Examination of 500 African Railway Workers". *E.A. Med. J.*, Vol. 25.

HUTTON, P. W. "A case of Erythema Nodosum". *E.A. Med. J.*, Vol. 25.

STATISTICS OF POPULATION

The only statistics available are shown in Tables 12 and 13.

METEOROLOGICAL RETURN

The necessary information is available in the Annual Report of the East African Meteorological Services.

Appendix I

MEDICAL SCHOOL, MULAGO, EXAMINATION RESULTS

In June, one Tanganyika student who in December, 1947, had been referred for six months in Obstetrics and Preventive Medicine, succeeded in satisfying the examiners in these subjects and qualified for the Diploma in Medicine (East Africa).

The results of the November–December examinations were as follows:—

Third Examination for the Diploma: Part II (Medicine, Surgery, Obstetrics and Preventive Medicine.

Of six candidates presented, four, including three from Uganda, passed. One was referred for six months, and another for a year.

Third Examination for the Diploma: Part I (Pathology and Forensic Medicine).

Of nine candidates presented, seven passed, including five from Uganda; two were referred for six months in pathology.

Second Examination for the Diploma (Anatomy, Physiology, Pharmacology, and Principles of Pathology).

Ten candidates were presented, of whom six obtained passes (one with distinction), one was recommended to take a supplementary examination in the principles of pathology, and three to repeat the second pre-clinical year. Only two of the successful candidates were from Uganda.

First Examination for the Diploma (Anatomy and Physiology).

Of the four candidates presented, two, both Uganda students, passed. One was recommended to repeat the first pre-clinical year and one to discontinue the course.

The external examiners in 1948 were:—

- Sir W. Heneage Ogilvie, K.B.E. (Surgery).
 Dr. R. T. S. Goodchild, F.R.C.S., D.T.M. & H. (Obstetrics and Gynaecology).
 Dr. G. L. Timms, M.B.B.S. (Pathology and Forensic Medicine).
 Dr. A. W. Williams, M.A., M.D., M.R.C.P. (Medicine).
 Mr. I. W. J. MacAdam, M.B., F.R.C.S. (Anatomy).
 Dr. I. W. Mackichan, M.B., D.P.H. (Preventive Medicine).
 Dr. H. Lehmann, M.D. (Physiology and Pharmacology).

*Appendix II***STAFF****PRINCIPAL APPOINTMENTS, PROMOTIONS, CHANGES, etc.,
DURING 1948**

APPOINTMENTS—					<i>Date</i>
Miss E. J. H. Male to be Sister Tutor	...	...	...	...	6- 1-48
Mr. A. D. Holden to be Optometrist	...	...	...	...	23- 1-48
Mr. E. G. Knott to be Laboratory Assistant	...	...	...	...	23- 1-48
Mr. S. R. Sneddon to be Health Inspector	...	...	...	...	3- 1-48
Mr. C. W. Grant to be Pharmacist	...	...	...	...	14- 2-48
Miss B. Harrison to be Nursing Sister	...	...	...	...	12- 2-48
Miss H. M. Stoyle to be Nursing Sister	...	...	...	...	14- 2-48
Miss M. T. Howie to be Nursing Sister	...	...	...	...	14- 2-48
Miss L. Barlass to be Nursing Sister	...	...	...	...	14- 2-48
Miss J. E. M. Warn to be Nursing Sister	...	...	...	...	4- 3-48
Miss D. Stretton to be Nursing Sister	...	...	...	...	4- 3-48
Dr. W. M. Lewis to be Medical Officer	...	...	...	...	8- 4-48
Miss P. J. Brewer to be Nursing Sister	...	...	...	...	30- 4-48
Miss J. I. Lloyd to be Nursing Sister	...	...	...	...	30- 4-48
Miss G. E. Meadows to be Nursing Sister	...	...	...	...	30- 4-48
Miss E. E. Miles to be Nursing Sister	...	...	...	...	30- 4-48
Miss A. P. J. Olivey to be Nursing Sister	...	...	...	...	30- 4-48
Miss C. G. J. Read to be Nursing Sister	...	...	...	...	30- 4-48
Mr. F. J. Webb to be Wardmaster	...	...	...	...	30- 4-48
Mr. J. A. Scherer to be Male Mental Nurse	...	...	...	...	30- 4-48
Miss G. C. Wiggins to be Physiotherapist	...	...	...	...	15- 6-48
Miss M. O. C. Bonthron to be Chief Matron	...	...	...	...	16- 8-48
Dr. T. Crisp to be Medical Officer	...	...	...	...	22- 8-48
Miss J. W. St. Claire to be Stenographer	...	...	...	...	27- 8-48
Miss P. M. Snow to be Nursing Sister	...	...	...	...	3- 9-48
Dr. B. E. C. Hopwood to be Medical Officer	...	...	...	...	8- 9-49
Dr. R. Y. Dunlop to be Senior Medical Officer (Health)	...	...	...	...	14- 4-48
Miss J. Hills to be Nursing Sister	...	...	...	...	16-10-48
Miss B. G. Martin to be Nursing Sister	...	...	...	...	16-10-48
Mr. A. Macinnis to be Health Inspector	...	...	...	...	16-10-48
Miss J. M. Aitken to be Nursing Sister	...	...	...	...	22-10-48
Miss W. D. Glover to be Nursing Sister	...	...	...	...	25-10-48
Dr. H. R. Hudd to be Medical Officer	...	...	...	...	1-12-48
Mr. C. R. W. Birkitt to be Dental Surgeon	...	...	...	...	10-12-48
Mr. E. J. Kennard to be Secretary	...	...	...	...	13-12-48
ACTING APPOINTMENTS—					
Dr. B. A. Coghlan, Senior Medical Officer to act as Assistant Director of Medical Services	...	...	...	...	<i>From</i> 1- 1-48 <i>To</i> 28- 1-48
Mr. J. Hoyle, Assistant Hospital Superintendent, to act as Hospital Superintendent	...	...	...	...	5- 4-48 10- 9-48
Dr. J. K. Hunter, Medical Officer, to act as Senior Medical Officer (Labour)	...	...	...	...	24- 7-48 31-12-48
Dr. D. D. McCarthy, Assistant Director of Medical Services to act as Deputy Director of Medical Services	...	...	...	...	11-11-48 31-12-48

ACTING APPOINTMENTS— <i>contd.</i>		<i>From</i>	<i>To</i>
Dr. A. R. Darlow, Medical Officer, to act as Specialist Physician		30-11-48	31-12-48
Dr. H. R. Hudd, Medical Officer, to act as Specialist Anaesthetist	... ..	1-12-48	31-12-48
Dr. R. E. Barrett, Senior Medical Officer, to act as Assistant Director of Medical Services	... ..	6-12-48	31-12-48
PROMOTIONS—			<i>Date</i>
Mr. I. W. J. McAdam, Medical Officer, to be Surgeon Specialist	...		1- 1-48
Mr. H. Lennox, Male Nurse, to be Superintendent, Mental Hospital	...		6- 1-48
Mr. E. J. Hines, Health Inspector, to be Senior Health Inspector	...		1- 1-48
Mr. G. H. Postlethwaite, Health Inspector, to be Senior Health Inspector	...		1- 8-48
Miss M. L. Lock, Matron, Grade II, to be Matron, Grade I	...		2- 1-48
Miss T. Thomson, Matron, Grade II, to be Matron, Grade I	...		1- 7-48
Mr. E. J. Hines, Senior Health Inspector, to be Chief Health Inspector	...		30- 1-48
Mr. D. W. Munday, Health Inspector, to be Instructor of Hygiene	...		1-12-48
TRANSFERS—			<i>Date</i>
Mr. C. Baty, Superintendent, Mental Hospital, to be Superintendent, Mental Hospital, Zanzibar	... ..		6- 1-48
Mr. J. P. Bernacca, Entomologist (Medical) to be Entomologist, Tsetse Control Department	... ..		1- 1-48
Mr. V. A. Bunge, Health Inspector, to be Senior European Agricultural Assistant	... ..		25-10-48
Dr. P. J. Cowin, Medical Officer, to be Senior Medical Officer, Nyasaland	...		9- 7-48
RESIGNATIONS—			<i>Date</i>
Miss M. G. Morris, Matron, Grade I	... ..		12- 1-48
Miss M. J. Jones, Nursing Sister	... ..		25- 8-48
Miss M. Hendry, Nursing Sister	... ..		29-10-48
Miss D. H. Lucas, Nursing Sister	... ..		29-11-48
HONOURS—			
Mr. Benjamini Senjobe, a Medical Assistant, awarded Certificate of Honour.			
Mr. Erukana Zavuga, Laboratory Assistant, awarded Certificate of Honour.			

Appendix III

B.—ORDINANCES, etc. AFFECTING PUBLIC HEALTH

No Ordinances were enacted.

REGISTRATION OF MEDICAL PRACTITIONERS AND DENTISTS. (Medical Registration Ordinance, 1913).

The numbers actually on the Registers on the 31st December, 1948 were:—

Registered Medical Practitioners	...	...	...	129
Dentists	...	...	...	8
Licensed Medical Practitioners	...	...	...	78
Licensed Dentists	...	...	...	4

REGISTRATION OF MIDWIVES (Midwives Ordinance, 1927).

The numbers actually on the Register on the 31st December, 1948 were:—

Europeans	...	...	...	...	167
Asians	...	...	...	...	14
Africans	...	...	...	...	502
Seychellois	...	...	...	...	1

SANCTIONED ESTABLISHMENT 1948

ADMINISTRATIVE DIVISION—					
Director of Medical Services	...	...	...	...	1
Deputy Director of Medical Services	...	...	...	...	1
Assistant Director of Medical Services	...	...	...	...	1
Medical Superintendent, Mulago	...	...	...	...	1
Chief Matron	...	...	...	...	1
Chief Health Inspector	...	...	...	...	1
Accountant	...	...	...	...	1
Administrative Assistant	...	...	...	...	1
Office Superintendent	...	...	...	...	1
Stenographer-Secretaries	...	...	...	...	2
Chief Pharmacist	...	...	...	...	1
Asian Clerks	...	...	...	...	18
EXECUTIVE DIVISION—					
Specialists	...	...	...	...	9
Senior Medical Officers	...	...	...	...	7
Medical Officers	...	...	...	...	37
Dental Surgeons	...	...	...	...	3
Hospital Superintendent	...	...	...	...	1
Assistant Hospital Superintendent	...	...	...	...	1
Receptionist Clerk (European and Asians Hospitals)	...	...	...	...	1
Wardmasters	...	...	...	...	5
Superintendent, Mental Hospital	...	...	...	...	1
Male Nurse	...	...	...	...	1
Female Nurse	...	...	...	...	1
Pharmacists	...	...	...	...	6
Instructor of Hygiene	...	...	...	...	1
Assistant Instructor of Hygiene	...	...	...	...	1
Senior Health Inspectors	...	...	...	...	4
Health Inspectors	...	...	...	...	16
Sanitary Overseers	...	...	...	...	4
Radiographers	...	...	...	...	2
Dental Mechanics	...	...	...	...	2
Matrons	...	...	...	...	7
Nursing Sisters	...	...	...	...	46
Masseuses	...	...	...	...	2
Domestic Assistant	...	...	...	...	1
Welfare Worker	...	...	...	...	1
Asian Nurses and Probationers	...	...	...	...	11
Asian Medical Officers	...	...	...	...	2
Senior Sub-Assistant Surgeons	...	...	...	...	1
Sub-Assistant Surgeons	...	...	...	...	8
Asian Assistant Storekeeper	...	...	...	...	1
Asian Cooks	...	...	...	...	2
Optometrist	...	...	...	...	1
LABORATORY DIVISION—					
Senior Pathologist	...	...	...	...	1
Pathologists	...	...	...	...	3
Government Chemist	...	...	...	...	1
Senior Entomologist	...	...	...	...	1
Entomologists	...	...	...	...	2
Biochemist	...	...	...	...	1
Laboratory Assistants	...	...	...	...	4
Assistant Bacteriologist	...	...	...	...	1
Physiological Laboratory Superintendent	...	...	...	...	1
YELLOW FEVER AND OTHER VIRUS RESEARCH—					
Pathologist	...	...	...	...	1
Laboratory Assistant	...	...	...	...	1
Stenographer-Secretary	...	...	...	...	1
Entomologist	...	...	...	...	1
AFRICAN ESTABLISHMENT—					
Assistant Medical Officers	...	...	...	...	60
Laboratory Technician	...	...	...	...	1
Clerks	...	...	...	...	46
Medical Assistants	...	...	...	...	269
Assistant Health Inspectors	...	...	...	...	97
Laboratory Assistants	...	...	...	...	45

AFRICAN ESTABLISHMENT—*contd.*

Dispensers	36
Entomological Orderlies	3
Artisans	5
African Nurses and Midwives	335
Wardmaids	319
	1451.

In addition to the above, there are varying numbers of African technical, clerical and menial subordinate staff employed in all units of the Department.

Appendix V

FINANCIAL

ACTUAL EXPENDITURE.

	£	s.	cts.
PERSONAL EMOLUMENTS	312,853	11	34
OTHER CHARGES—			
Stores, drugs and equipment	145,645	6	96
Hospitals and laboratory maintenance	43,128	15	93
Control of epidemic and endemic diseases	16,557	6	85
Public Health Propaganda	111	11	73
Miscellaneous Services (including travelling and transport of staff, transport of stores, telephones, water charges, electricity, publications, etc.	45,276	1	93
CONTRIBUTIONS—			
Grants to missions for maintenance of midwifery centres	7,175	0	00
Grants to missions for relief of leprosy	4,499	4	86
Contributions—Internal	645	0	00
Grant to Church Missionary Society for Kabarole Hospital	500	0	00
Mulago Hospital African Staff Recreation Fund	10	0	00
Grant to Red Cross Blood Transfusion Service	45	0	00
Contributions—External	1,502	5	18
MEDICAL TRAINING CENTRES—			
Personal Emoluments	2,757	2	72
Other Charges	7,216	7	77
SPECIAL EXPENDITURE—			
Medical Training Centres	77	14	54
Building Grants to leper settlements	1,000	0	00
Portable X-Ray sets	97	13	27
Purchase and installation of cold storage chamber	230	9	37
Grant to Teso Leper Mission for installation of Water Supply	489	11	81
	£589,818	4	26

REVENUE.

The total amount of revenue collected was as follows:—

	£	s.	cts.
Hospital and dental fees, registration fees	11,565	17	47
Reimbursements from Kenya and Uganda Railways and Harbours on account of medical services	1,412	12	08
Contributions from Native Administrations towards cost of medical attendants and stores for sub-dispensaries	8,910	0	00
	£21,888	9	55

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1948

DISEASES	Remaining in Hospital at end of 1947		Yearly Admissions		Total Cases Treated		Total Deaths		Remaining in Hospital at end of 1948		All Cases including both In- and Out-Patients	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1. (a) Typhoid fever	6	7	221	121	227	128	36	20	21	11	221	121
(b) Paratyphoid fever	...	...	13	4	13	4	1	1	...	...	13	4
2. Typhus fever ...	1	...	43	26	44	26	2	...	2	1	43	26
3. Relapsing fever	3	1	292	126	295	127	7	1	7	4	363	171
4. Undulant fever	...	...	1	3	1	3	...	...	...	...	11	8
5. Smallpox	5	5	63	39	68	44	...	...	...	...	63	39
6. Measles	3	3	156	69	159	72	1	1	1	...	311	209
7. Scarlet fever	...	...	...	...	...	...	...	...	...	...	5	1
8. Whooping cough	3	4	286	325	289	329	13	17	5	7	1,050	1,252
9. Diphtheria	...	...	6	4	6	4	1	2	...	...	8	7
10. Influenza—	...	...	...	...	...	...	...	...	...	...	...	...
(a) with respiratory complications	...	...	310	126	310	126	1	3	5	...	950	514
(b) without respiratory complications	2	3	286	113	288	116	...	...	7	2	6,053	3,481
11. Cholera	...	...	...	...	...	...	...	...	...	...	...	1
12. Dysentery—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Amœbic	17	8	439	323	456	331	16	5	11	6	1,316	769
(b) Bacillary	5	2	278	165	283	167	14	14	7	3	575	339
(c) Unclassified	4	1	133	72	137	73	18	7	3	2	1,647	662
13. Plague—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Bubonic	...	...	...	...	...	...	...	...	...	...	...	...
(b) Pneumonic	...	...	...	...	...	...	...	...	...	...	...	...
(c) Septicæmic	...	...	...	...	...	...	...	...	...	...	...	...
14. Acute poliomyelitis	...	...	26	7	26	7	1	...	...	...	26	17
15. Encephalitis lethargica	...	...	6	5	6	5	1	3	...	...	6	5
16. Cerebro-spinal fever	11	9	231	152	242	161	90	67	7	4	275	173
17. Rabies	...	...	1	...	1	...	1	...	...	...	10	3
18. Tetanus	...	...	28	20	28	20	13	9	1	...	34	20
19. Tuberculosis of the respiratory system	31	7	307	108	338	115	99	17	38	9	623	171
Other tuberculous diseases	12	4	75	20	87	33	12	2	5	2	98	29
21. Leprosy	1	...	48	8	49	8	3	...	3	...	455	121

DISEASES	Remaining in Hospital at end of 1947		Yearly Admissions		Total Cases Treated		Total Deaths		Remaining in Hospital at end of 1948		All Cases including both In- and Out-Patients	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
47. Diseases of the ear and mastoid sinus ...	2	1	226	206	228	207	2	1	3	...	6,918	4,810
48. Diseases of the circulatory system—												
(a) Heart diseases ...	6	3	194	114	200	117	62	23	2	1	481	332
(b) Other circulatory diseases ...	2	3	77	38	79	41	7	2	...	1	393	302
49. Bronchitis ...	7	3	689	470	696	473	19	8	15	6	3,533	2,279
50. Pneumonia—												
(a) Broncho-pneumonia ...	8	13	675	707	683	720	107	90	19	17	1,267	793
(b) Lobar-pneumonia ...	43	16	2,259	674	2,302	690	108	45	29	18	2,259	674
(c) Otherwise defined ...	10	2	722	219	732	221	23	10	9	3	729	577
51. Other diseases of the respiratory system ...	17	13	951	581	968	594	21	5	29	11	43,577	27,685
52. Diarrhoea and enteritis—												
(a) Under 2 years of age ...	2	8	375	338	377	346	30	30	7	5	4,139	3,145
(b) Over 2 years of age ...	5	3	409	356	414	359	35	20	6	7	4,968	3,161
53. Appendicitis ...	3	...	78	63	81	63	4	...	...	3	81	69
54. Hernia, intestinal obstruction ...	35	4	1,419	293	1,454	297	98	35	65	16	2,099	459
55. Cirrhosis of the liver ...	7	2	43	21	50	23	17	5	2	1	49	24
56. Other diseases of the liver and biliary passages ...	7	...	133	80	140	80	14	6	3	1	299	162
57. Other diseases of the digestive system ...	17	8	1,326	913	1,343	921	38	22	39	28	38,539	26,851
58. Nephritis (all forms)—												
(a) Acute ...	2	1	52	22	54	23	6	3	1	...	216	79
(b) Chronic ...	4	1	105	39	109	40	37	7	1	4	157	50
59. Other non-venereal diseases of the genito-urinary system ...	22	6	601	1,527	623	1,533	6	18	12	27	1,950	4,092
60. Diseases of pregnancy, childbirth, and the puerperal state—												
(a) Abortion ...	...	19	...	1,023	...	1,042	...	13	...	26	...	1,104
(b) Ectopic gestation ...	...	1	...	27	...	28	...	5	...	...	...	27
(c) Toxæmias of pregnancy ...	...	...	...	22	...	22	...	...	...	...	...	31
(d) Other conditions of the puerperal state ...	...	26	...	529	...	555	...	87	...	10	...	550

61. Diseases of the skin, cellular tissue, bones and organs of locomotion	400	154	7,275	3,240	7,675	3,394	86	49	339	131	78,705	36,951
62. Congenital malformations and diseases of early infancy—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Congenital debility (children under 1 year) ... ..	...	...	87	76	87	76	39	33	...	...	157	114
(b) Premature birth (children under 1 year) ... ..	...	...	55	63	55	63	20	24	...	...	58	68
(c) Injury at birth (children under 1 year) ... ..	...	...	16	23	16	23	8	5	...	...	16	24
63. Senility ... ..	...	...	4	6	4	6	...	1	...	1	225	238
64. External causes—	...	...	...	...	...	...	...	...	...	...	...	...
(a) Suicide ... ..	...	...	...	2	...	2	...	1	...	...	...	2
(b) Other forms of violence	173	63	4,944	1,655	5,117	1,718	152	43	163	87	52,892	18,314
65. Ill-defined causes	81	15	1,175	721	1,256	736	42	24	24	20	8,433	6,474
66. Malingering ... ..	...	...	23	8	23	8	...	...	...	...	54	14
67. Ante-natal supervision ... ..	...	61	...	1,670	...	1,731	...	3	...	73	...	34,080
68. Normal living babies	21	24	2,393	2,144	2,414	2,168	34	24	36	27	2,403	2,160
69. Post-natal supervision ... ..	...	2	5	59	5	61	...	3	...	3	3,792	4,023
70. Normal labour ... ..	...	113	...	5,309	...	5,421	...	5	...	80	...	5,345
TOTAL	1,491	849	51,558	38,170	53,949	39,019	1,909	1,110	1,395	906	468,854	319,996
71. Examinations	3	6	210	233	213	239	3	1	3	2	43,683	8,472
Dispensaries ... ..	...	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL	1,494	855	51,768	38,403	53,262	39,258	1,912	1,111	1,398	908	2,259,111	1,418,106

