Annual report of the Medical Department / Uganda Protectorate.

UGANDA PROTECTORATE

ANNUAL REPORT

OF THE

MEDICAL DEPARTMENT

For the year ended 31st December, 1950

PRICE: TWO SHILLINGS

Published by Command of His Excellency the Governor

ENTEBBE
PRINTED BY THE GOVERNMENT PRINTER, UGANDA
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MEDICAL DEPARTMENT

ANNUAL REPORT

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SECTION I.—ADMINISTRATION

A. Staff

The year was marked by an improvement in the staff position following the adoption of more attractive salary scales for medical officers. The provincial headquarters staff was with one exception unchanged throughout the year, a satisfactory turn of affairs after the numerous retirements and replacements recorded in 1949. One Senior Medical Officer was promoted to be Assistant Director when Dr. R. E. Barrett, whose extensive knowledge of Uganda will be greatly missed, was transferred to Tanganyika in November. A Senior Medical Officer was posted to headquarters for statistical and other special duties.

The department lost the services of seven European doctors, one by transfer, two to take up appointments at Makerere College and four others by resignation or retirement. Three Medical Officers (one part-time) were recruited locally, and a Medical Superintendent and five Medical Officers were appointed by the Secretary of State. At the end of 1950 there were 12 vacancies in the establishment of 41 Medical Officers, as against 15 vacancies at the end of 1949.

The vacancies for Health Inspectors remained the same (10), three new recruits being offset by the secondment or resignation of three serving officers. Recruitment of Nursing Sisters improved, and the local engagement of temporary Nursing Sisters enabled the establishment of 50 to be completed for some months. At the end of the year there were 8 vacancies, six being filled by temporary appointments.

B. Outstanding Events of the Year

The most promising event of the year was the first Health Week held at Mukono in March, which was designed to promote a more practical interest in domestic sanitation and the protection of water supplies in rural areas. Health exhibitions held in the past have relied mainly upon models and demonstration specimens; at Mukono the spectator was persuaded to take an active manual part in sanitary works for the benefit of his own neighbourhood, following intensive instruction by means of lectures, informal discussions, specimens, models, cartoons, diagrams and cinema films. Beneficial results have been noted far beyond the immediate site of the Health Week, which was subsequently repeated at other centres.

While the prospects of improving health conditions by the activity of the African himself have become brighter through the experience of the Health Weeks, the progress of African staff towards more responsible roles in the department has not advanced as much as could be desired. Two of the more experienced Assistant Medical Officers resigned during the year to engage in private practice as licensed medical practitioners, while two

others left the service without being able to qualify for licences to practise independently. At Mulago Hospital and Lira Training School, some of the male nursing staff refused to carry out normal nursing duties which they considered to be beneath their dignity and had to leave the department. It has become evident that two major factors which impede the development of the African branches of the service are alcohol and promiscuity. Although many members of the local staff carry out their duties with praiseworthy loyalty and devotion, it is essential that these two defects should be controlled if the African members of the department are to undertake the full responsibilities for which they are being trained.

Medical education has been taken a step forward by the appointment of full-time heads of the clinical and pathological departments of Makerere College Medical School. These workers will be assisted by the present part-time lecturers drawn from Government medical staff, using material available at Mulago Hospital. It is confidently expected that these new arrangements will have a beneficial effect upon the standards of teaching and medical services, as well as increasing the amount of research work which can be carried out.

A new system of stores allocation was worked out, with the object of improving the distribution of resources among the various units. Attention is also being given to problems connected with the introduction of an adequate costing system, bearing in mind the importance of using the available funds to the best advantage. In the United Kingdom, nearly £10 per head of population is being spent annually on medical services; almost the same proportion of Government revenue is provided in Uganda, but here this allows only Shs. 3 per head.

A sound medical policy needs to be founded on an accurate knowledge of disease incidence, and such knowledge can only be obtained on the spot. To busy workers in hospitals or clinics, the furnishing of returns and the notification of illnesses is bound to appear an irksome imposition. But increasing populations require increasing assistance from central administrations, and this assistance must be based on reliable information if it is to be effective. The introduction of some new recording methods during 1950 should provide a more accurate picture of the disease situation, and so help in the task of organising attacks upon it.

Industrial developments such as those at Jinja and Tororo bring in their train sanitary dangers more pronounced than is usual in temperate climates. Newcomers to tropical conditions generally tend to overlook the need for meticulous attention to mosquito breeding, sanitary habits and the medical care of their staff, and have to learn afresh the lessons of past experience. It is a pleasure to record that satisfactory co-operation in their common task was established so soon between those responsible for the new projects and officers of this department.

C. Distinguished Medical Visitors

Nuffield Panel of Consultants

Dr. N. Lloyd Rusby, a consultant in tuberculosis and chest diseases, spent three days at Mulago Hospital in August.

Professor H. J. Seddon, Director of the National Institute of Orthopaedics, spent twelve days in September visiting Kampala, Masaka and the Eastern Province.

Dr. Cicely Williams, a W.H.O. expert in paediatrics, spent three weeks in Kampala, Masaka and the Western Province.

Mr. J. H. Peel, a consultant in obstetrics and gynaecology, toured the Eastern Province and visited Lira during a stay of three weeks in November and December.

COLONIAL INSECTICIDE COMMITTEE

Mr. C. B. Symes, O.B.E., and Dr. P. C. C. Garnham visited Uganda, the latter studying the effects of anopheline control work at Kasanje and Mbale.

WORLD HEALTH ORGANISATION

Visits were paid by Professor F. Cambournac and Dr. Dyson Blair, regional experts in malaria and schistosomiasis respectively. Professor J. F. Brook undertook a short study of kwashiorkor. During the Malaria Conference held at Kampala under the auspices of W.H.O. and the Commission for Technical Co-operation South of the Sahara, many distinguished visitors inspected activities in and around Kampala and Jinja. They included Professor N. H. Swellengrebel, President of the Conference, Dr. P. Dorolle, Deputy Director, W.H.O., Dr. E. J. Pampana, Chief of the Malaria Section, General Marcel Vaucel, Directeur, Service de Santé, Ministère de la France d'Outremer, Professor G. Macdonald of the Ross Institute and Sir Gordon Covell of the Ministry of Health Laboratory, Horton.

EAST AFRICA HIGH COMMISSION

Visits were paid by Dr. K. A. T. Martin (Director of the Bureau for Medical Research), Dr. J. Ross Innes (Leprologist), Lt.-Colonel W. Laurie (Director of the Filariasis Unit) and Dr. D. Bagster Wilson (Malariologist).

OTHER VISITORS

Dr. D. S. Bertram and Dr. T. Galloway from the London School of Hygiene and Tropical Medicine.

Dr. R. R. Struthers and Dr. R. S. Morrison of the Medical Sciences Division of the Rockefeller Foundation and Dr. W. A. McIntosh, Regional Director of the Rockefeller Foundation.

Dr. D. A. Baird, Director of Medical Services, Somaliland.

Dr. M. Wanson, Médécin en Chef-adjoint, Service d'Hygiene, from Leopoldville.

Dr. G. W. Gale, Chief Medical Officer, Union of South Africa.

SECTION II.—VITAL STATISTICS

A. African Population

The population of Uganda is recorded as having increased from 3,065,000 in 1921 to 3,536,00 in 1931. After making allowance for territorial changes, the annual rate of increase averaged 1·8%. By August 1948 the

population had risen to 4,917,000, the increase averaging 1·9% annually. The significance of the rates of increase is affected by differences in coverage as between the earlier and later censuses.

The difference between the births and deaths registered accounted for only one-half of the increase, while immigration (judged by the tribal analysis of 1948) could not account for the remainder. However, it has been noted since 1946 that in several districts the vital events registered have on occasions been fewer than those which occurred in hospitals or maternity centres. Evidence has been accumulating that the registration of births is particularly defective; a recent investigation in Mengo District indicated that over 80% of births in hospital had not been registered with the chief. Mengo District has the largest proportion of institutional births of any district and the largest discrepancy between the census population and the expected population.

In the summary of vital statistics in Table 1 the rates previously published in the department's annual reports have been omitted in view of the increasing evidence of defective registration. Every attempt is being made to improve the standard of registration, but it is unlikely that reasonably comprehensive reporting of vital events will be achieved for some time.

The mid-year population estimate for the Protectorate for 1949 is based on the 1948 census figures plus the recorded natural increase.

TABLE 1

Vital Statistics Return of the Uganda Protectorate for the Year 194
African Population only—Based on registration with Chiefs

Provinces and Districts	Live Births	Still-Births	Infant Deaths	Maternal Deaths	Total Deaths	Estimated mid-year Populatio
Buganda Province						
Mengo ...	13,800	60	820	60	8,800	904,000
Masaka ...	8,207	28	248	30	2,798	322,000
Mubende ...	1,952	43	35	6	889	86,000
TOTAL ...	23,959	131	1,103	96	12,487	1,312,000
Eastern Province—						
Busoga ...	11,249	509	1,338	83	8,201	509,000
Mbale ...	13,400	261	1,232	58	7,127	605,000
Teso ...	5,881	2	286	22	4,233	404,000
TOTAL ...	30,530	772	2,856	163	19,561	1,518,000
Western Province—						
Bunyoro ...	1,713	91	70	7	987	109,000
Toro... ...	6,830	302	473	66	3,202	262,000
Ankole ...	11,618	165	635	30	5,010	406,000
Kigezi ...	17,540	465	484	36	3,607	407,000
TOTAL ...	37,701	1,023	1,662	139	12,806	1,184,000
Northern Province						
Lango ...	9,471	384	990	54	3,754	271,00
Acholi ...	6,194	285	889	40	2,637	219,00
West Nile ...	12,833	108	1,836	62	5,590	342,00
TOTAL ...	28,498	777	3,715	156	11,981	832,00
UGANDA PROTECTORATE ...	120,688	2,703	9,336	554	56,835	4,846,00

B. Europeans

TABLE 2

European Patients

	Year	Officials		Non-Officials		Total
		Males	Females	Males	Females	
Total patients ...	1949	2,510	1,787	1,417	1,699	7,413
	1950	2,053	1,551	1,773	1,354	6,731
Admissions to hospital ...	1949	308	296	352	365	1,312
	1950	294	376	328	227	1,223
Deaths in hospital	1949	3	1	9	4	17
	1950	...	...	4	...	4

During 1950, 6,731 European patients were treated at Government hospitals, of whom 3,708 (4,345 in 1949) attended the European Hospital, Kampala.

The deaths of twenty-three Europeans were registered, as compared with 38 in 1949. Three were due to accidents. One death was recorded from blackwater fever, five from cancer, one from cerebral haemorrhage and three from degenerative heart disease. One hundred and forty-six European births were registered during the year (140 in 1949).

TABLE 3

European Officials

	1948	1949	1950
Mid-year number on staff list	753	810	895
Average number resident...	633	707	709
Number of deaths	2	2	1
Number invalided	...	2	2
Number of illnesses during year	388	391	380
Number of days on sick list	2,688	3,155	2,783
Number granted sick leave	64	79	75
RATES—			
Percentage of daily sick to average number resident ...	1·16	1·22	1·08
Average days sick each illness	6·93	8·07	7·32
Average days sick leave per patient	13·8	16·5	12·6

The causes of death in 1949 and 1950 were—

Deaths in 1949—Male, age 56, cerebral haemorrhage;
Male, age 24, motor accident.

Deaths in 1950—Male, age 68, bronchopneumonia and failing heart.

The causes of invaliding for the two years were—

Invalided in 1949—Male, age 41, amoebiasis.

Invalided in 1950—Male, age 20, dropped metatarsal arch;
Male, age 51, toxic cirrhosis of liver.

The illnesses recorded in Table 3 are only those for which the official was off-duty. Of the 380 illnesses, 68 occurred in females, the average number of illnesses per female (based on the number on the staff list) being 0·58, compared with 0·40 for males. The average length of illness was almost the same in the two sexes (males 7·3, females 7·5).

In addition to the Government officials shown in Table 3, 48 High Commission officials were put off duty through illness for a total of 339 days.

C. Asians

TABLE 4

Asian Patients

	Year	Officials		Non-Officials		Total
		Males	Females	Males	Females	
Total Patients	1949	3,423	601	3,772	4,044	11,840
	1950	2,948	166	5,010	4,500	12,624
Admissions to hospital ...	1949	169	139	852	1,100	2,260
	1950	219	178	937	1,229	2,563
Deaths in hospital	1949	3	2	27	12	44
	1950	2	2	31	14	49

During 1950 the number of Asian patients increased, the number recorded at the Asian Hospital, Kampala, rising to 4,983 (2,997 in 1949).

Registered deaths of Asians amounted to 199, compared with 186 in 1949. Eighteen were the result of accidents, burns accounting for only five (13 in 1949). Thirty-three deaths were ascribed to malaria (including eight due to blackwater fever) and twenty-one to pneumonia. Three deaths were due to tuberculosis and two to typhoid.

Births registered during 1950 amounted to 2,634 compared with 2,405 in 1949. Twelve maternal deaths occurred and 47 deaths in infants under one year of age. The large difference between the births and deaths and the exceptionally low infant mortality rate (18 per 1,000) suggest that all deaths are not being registered.

TABLE 5

Asian Officials

	1948	1949	1950*
Total number of officials in estimates	458	589	...
Average number resident...	414	552	...
Number of deaths	2	1	2
Number invalided	2	3	...
Number of illnesses during year	479	500	562
Number of days on sick list	2,250	2,273	2,573
Number granted sick leave	9	13	18
RATES—			
Percentage of daily sick to number resident ...	1·48	1·13	...
Average days sick each illness	4·69	4·55	4·58
Average days sick leave per patient	18·1	21·5	19·8

In addition to Government officials treated, 549 officials of High Commission departments were treated and put off-duty, the average day sick for each illness being 6·47.

D. African Officials

TABLE 6

Africal Local Civil Service Officers

	1948	1949	1950*
Total number of officials in estimates	1,672	1,626	...
Deaths recorded	1	...	2
Number invalided	2	1	...
Number of illnesses recorded during year	216	125	190
Number of days on sick list	993	690	1,088
Number granted sick leave	2	...	3
RATES—			
Percentage of daily sick to number in estimates ...	0·16	0·12	...
Average days sick each illness	4·59	5·52	5·78
Average days sick leave per patient	10·5	...	...

*The Asian and African establishments of the Local Civil Service were amalgamate in 1950. Analysis of sickness records is incomplete on this account and also through la of information regarding average numbers resident.

In addition to the illnesses recorded in Table 6 two officers of High Commission departments were recorded as being off-duty, and also 35 females in the Medical Department. The average days for each illness were 13·0 for 36 females compared with 5·5 for all males.

The information in Table 6 can only be considered as a guide to the illness experienced, and is a most incomplete record. In Kampala, for example, the only illnesses recorded were those of the staff at Mulago Hospital.

SECTION III.—PUBLIC HEALTH

A. General

Spectacular epidemics are nowadays uncommon in the tropics, ill-health being most frequently attributable to a group of diseases whose lack of dramatic appeal often leads to underestimation of their importance. Prominent among the conditions that undermine the health of large numbers of the population is anaemia. Clinical investigations have been carried out for many years at Mulago Hospital on the anaemia met with in hospital patients. Attention has recently been focussed on the anaemia which occurs in apparently healthy persons, insufficiently disabling to make them seek treatment, but undoubtedly leading to a diminished productive capacity, and accounting in part for a degree of lethargy.

Workers at the Makerere College Medical School have investigated the blood pictures of healthy students. Red-cell counts and haemoglobin levels were significantly higher than those of out-patients attending Mulago Hospital, who did not enjoy the same dietary and hygienic advantages. In Mbale district, a survey covering nearly 3,000 persons showed the existence of widespread severe anaemia, and also demonstrated the effect of hookworm infection, those with the heaviest infestations having an average haemoglobin level 17% below those with no hookworms.

An investigation on infants attending child welfare clinics around Kampala showed the well-known fall after birth—

TABLE 7

	Age					
	Months			Years		
	0–	1–	6–	1–	2–	5–
Haemoglobin level % ...	100	71	69	68	74	82

Malaria was the commonest cause of anaemia in infants, recent infection being associated with a fall of 10% below the average for that age; the anaemia improved rapidly after treatment with quinine and iron. Above the age of one year, nutritional and other factors were more important.

B. Nutrition and Food Supplies

Food supplies were reported to be ample during the year, and in Busoga there was a glut of sweet potatoes. Several districts place too much reliance upon cassava as a staple food. Meat and milk were scarce in some areas, particularly in the tsetse-infested parts of the Northern Province. Dried fish is being more widely marketed through the agency of such bodies

as the Uganda Fish Marketing Corporation, the Busoga A.L.G. Fisheries and others. Night blindness reported from some institutions could be ascribed to faulty diets rather than to lack of vitamin resources.

The paucity of first-class protein and the resultant nutritional disorders of early childhood present a chronic problem. Table 8 gives an estimate of available protein resources for the whole Protectorate, and it will be noted that the supply of animal protein is largely dependent upon stock which are susceptible to tsetse-borne disease.

Calculations of supplies from vegetable sources are based on estimates of acreages and yields. Allowances must be made for simsim and arachis used for industrial purposes, for fish, maize, beans and soya beans exported, and for errors in computing crop yields and quantities actually available for consumption. The resources are not distributed equally throughout the Protectorate; game is largely the perquisite of the northern and western parts of the country, while the consumption of fish is concentrated around the great lakes.

TABLE 8

Estimated resources of Protein in whole Protectorate

Source	Basic data	Edible portion (thousand tons)	Pounds per head per day	Grams protein per head per day
ANIMAL PROTEIN—				
Game—				
Elephants	1,700	1·7	0·002	0·14
Buffalo	1,500	1·2	0·0014	0·10
Others	15,000	0·6	0·0007	0·05
(Approximate estimates)				
Fish (dried weight)	...	3	0·0036	0·27
Cattle (2½ million)				
Meat ... ... *head*	300,000	33	0·04	2·7
Milk ... ... *yield*	1 bottle	...	0·28	0·05
Sheep and goats ... ... *head*	1,200,000	11	0·012	0·84
Miscellaneous				
Fowls				
Eggs	insufficient	data		
Flying ants				
Crocodile meat, etc.				
TOTAL ANIMAL PROTEIN ...				4·14gr
VEGETABLE PROTEIN OF HIGH BIOLOGICAL VALUE—				
	acres			
Beans	450,000	100	0·14	15
Peas	200,000	60	0·07	7
Soya beans	15,000	5	0·006	0·6
VEGETABLE PROTEIN OF LOW BIOLOGICAL VALUE*—				
Groundnuts	350,000	90	0·11	4·5
Simsim	200,000	60	0·07	6
Sorghum	400,000	150	0·2	7
Eleusine	1,000,000	350	0·4	12
Maize	300,000	150	0·2	7
Sweet Potatoes	500,000	1,500	1·8	15
Bananas	700,000	2,000	2·4	10
Cassava	500,000	1,000	1·2	3·5
TOTAL VEGETABLE PROTEIN...				87·6gr

*Representative figures based on acreages recorded in Agricultural Department 1948 and 1949 reports.

Attempts to introduce new sources of essential dietary ingredients have so far proved unsuccessful. Food yeast (see 1949 report, page 11) has not yet been taken up by employers of labour, although raw materials for its production are available from the sugar industry. Some interest was shown in the use of soya beans, the cultivation of which was stimulated during the war. A soya bean flour had been produced commercially and used in some of the larger hospitals, but in recent years the acreage planted has decreased and the greater proportion of the crop is now exported. The Department of Nutrition at the London School of Hygiene was consulted and it seems that the most hopeful line would be to try to popularise the use of the sprouting bean as a sauce constituent. Work at Mulago Hospital has indicated that the use of skim milk powder is, at present, the most successful method of supplying concentrated milk protein in cases of kwashiorkor. In a recent series, using skim milk powder, the mortality in typical cases of this syndrome has been reduced to 15%. The Medical Research Council is planning further investigations into the use of vegetable substitutes for milk protein, a matter of outstanding importance in a country where the production and distribution of milk for child feeding are likely to be inadequate for a long time.

Steady improvements are taking place in the hygienic conditions under which food is prepared and sold. For example, Kabale reports a well-designed new bakery, a new market and a new eating house. Legislation to extend the application of the eating-house, bakehouse, meat and sale of milk rules is referred to in Appendix I.

C. Communicable Diseases

(1) Arthropod-Borne

Malaria.—Rainfall was heavier during 1950 than in 1949, and the incidence of malaria appears to have been slightly greater. Deaths from blackwater fever among non-Africans were seven as against five in 1949, and deaths from malaria (including "fever") were 21 as against 28 in 1949. The averages for the previous three years were 13 deaths annually from blackwater fever, and 38 from malaria.

Numerous entomological surveys were undertaken (see section V(C)), and permanent anti-malarial drainage schemes were initiated in Gulu and Arua and extended in other townships. Malarial control at Masaka will be assisted by improvements to the Kampala-Mbarara road, with the lowering of drainage levels at swamp crossings. Some difficulty was experienced at Jinja in the control of brickfields and the digging of sand for constructional work. In 1951, financial responsibility for malarial control within townships will be transferred from this department to the Township Authorities.

The Kigezi resettlement area experienced less malaria during the rains of 1950. In addition to other control measures, plans are under consideration for residual insecticidal spraying of huts during the next malarial season. The W.H.O.-C.C.T.A. Malaria Conference held in Kampala during November and December aroused general interest, and the main problem under discussion—the control of malaria among rural populations—was one of special importance to the Protectorate.

A review of quantities of materials used for the control and treatment of malaria showed that in a period of twelve months nearly 30,000 gallons of anti-malarial oil were issued, the three most important towns, Kampala, Entebbe and Jinja, each receiving about 20% of the total. The value of anti-malarial drugs issued was in excess of £12,000.

Relapsing fever.—The majority of cases reported from Mengo and Busoga Districts occurred in immigrant labourers from the southwest, and it is probable that infections have often gone undiagnosed. It is said that some tribes carefully preserve the infected *Ornithodorus* present in their rolls of bedding and encourage them to feed, so as to maintain their own immunity.

TABLE 9

Cases of Relapsing Fever reported

District	1948	1949	1950
Western Province—			
Ankole	349	327	393
Kigezi	37	18	40
Toro	22	24	43
Bunyoro	1	2	5
Buganda Province—			
Masaka	161	105	170
Mengo	10	50	70
Mubende	11	2	3
Eastern Province—			
Busoga	2	33	1
Mbale	...	5	...
Other districts	1	...	2
TOTAL CASES REPORTED ...	594	566	727
Admitted to hospital	...	346	301
Deaths in hospital	8	11	12

Trypanosomiasis.—Seventy-eight cases with six deaths were reported during 1950, compared with 54 cases in 1948 and 104 in 1949. In the Northern and Western Provinces, where the disease is almost entirely of the *gambiense* type, the fall in incidence which has been evident during recent years has continued; around the shores of Lake Victoria, where the disease is of the *rhodesiense* type, it has not proved so amenable to control.

There is still uncertainty about the insect vector responsible for some of the outbreaks of *rhodesiense* infection, but *pallidipes*-infested country presents the greatest danger. Buvuma Island has become a serious problem, and *Glossina pallidipes* has been found to be more widely spread than was at first believed. A scheme of voluntary evacuation with government assistance was inaugurated in order to minimise contact between man and fly, but this scheme has shown little sign of achieving its object. The island remains a potential source of *T. rhodesiense* for the adjacent mainland. A game reservoir, widespread tsetse vectors, a relatively poor soil and a small but tenacious human population combine to create a troublesome situation, and a source of danger to other regions.

The boundaries of the restricted area in Busoga were amended to conform with the county boundary. More extensive clearings have been

undertaken at the mouth of the River Nile and downstream from the Owen Falls, to protect the industrial population. Lake shore clearings have been extended, and plans are being made for controlled resettlement. These measures should increase the supplies of fish, root crops and cattle for the growing local population.

The Rwensama Sleeping Sickness Area in Kigezi has been opened up by a motor road to the fishing villages on Lake Edward. Surveys have been made in the restricted areas at the southern end of Lake Albert in connection with the new projected port of Ndaiga and its road of approach. The boundaries of the restricted area on the east bank of the Albert Nile were also amended.

Typhus.—The differences between the two distinct diseases included under this generic name are becoming more clearly defined. Fourteen Europeans with tick typhus were treated at Kampala and Jinja, and other isolated cases are known to have occurred; as far as is known, this form occurs only among Europeans. As Dick has shown (*) in an account of tick typhus among troops in East Africa, there are reasons for separating this disease from typhus proper.

The typhus found around Kampala among Africans attacks persons of all ages, although the greater number of hospital patients are in the age group 21–40. In a series of 128 cases there were no deaths. The sera contained agglutinins against Proteus OX19 and (to a lower titre) against OX2. A few of the inoculated guinea-pigs showed a pyrexia to 103°F. with scrotal swelling and fixation of the testes; rickettsia, identified as *R. mooseri*, appeared in clusters in the endothelial cells. Lice are not common on the patients, and rat fleas are believed to be the vector.

(2) Helminthic Diseases

An impression of the prevalence of some of the minor helminthic infections may be gained from the results of stool examinations at district hospitals in various parts of the Protectorate.

Ascaris predominates in the Western Province and is found in almost half the specimens examined in the south-west of the country. Elsewhere the rate rarely rises above 5% and is below 2% in the northern part of the country with the exception of two stations—Gulu and Moroto.

Taenia occurs in 1–4% of all specimens. It is specially associated with the pastoral country of the south-west, and is reported to be rare in the West Nile District.

Strongyloides is reported in about 5% of all stools examined. It seems relatively more common in the higher stations of Kabale and Fort Portal.

Oxyuris is uncommon, averaging about 0·5%.

Trichuris occurs in less than 1% of stools in most parts of the country, but rises to 5% or more in the Bantu zone along the western border.

Hymenolepis has been recorded occasionally from Gulu.

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* Dick, G. W. A. (1947) *Trans. Roy. Soc. Trop. Med. Hyg.* Vol. 41, page 295.

Ankylostomum occurs in 20% to 40% of all stools examined in most parts of the Protectorate. Lower percentages are found at Kabale at 6,000 feet above sea-level, and at Moroto in the semi-arid north-east (1% and 5% respectively).

Onchocerciasis.—The affected region of Kigezi was visited by Dr. D. S. Bertram of the London School of Hygiene and Tropical Medicine, and Dr. M. Wanson from the Belgian Congo visited the Victoria Nile to examine the applicability of eradication methods used successfully at Leopoldville. The presence of the fly in streams flowing from the Ruwenzori mountains was one objection to a site proposed for a new leprosy settlement in Toro District.

Various control methods have been under consideration, and experiments were carried out by the entomologist to determine the ability of *Simulium* to resist adverse conditions. It was found that the larvae and pupae, which prefer well-aerated flowing water, were able to survive immersion in stagnant water for 24 hours and resisted drying for periods up to 48 hours when the water level was lowered. The addition of D.D.T. in a concentration of one part in two millions abolished the breeding stages.

The possibility of eradication by aerial treatment of the infested part of the Victoria Nile with insecticide was further explored. The magnitude of the task, involving the deposit of about 20 mgm. of D.D.T per square metre on the river banks and islands over a distance of some 30–35 miles, is beyond the capacity of the aircraft which are at present available. Plans were made for an experimental spraying of a 5-mile stretch of the river, to enable an effective technique to be worked out. In the meantime, further studies of the life history of the insect are being made.

Fourteen species of *Simulium* have been described from Uganda, five of which bite man.

Schistosomiasis.—Surveys have continued in many districts to assess the severity and distribution of infection by schistosomes. In the West Nile District, the highest incidence was found at Pakwach, where 54% of the school children showed *S. mansoni* ova in single stool specimens. High rates are also found on the Uganda and Congo shores of Lake Albert. The incidence of this species decreases as one proceeds down the Nile away from Lake Albert; at Rhino Camp only 19% of school children showed ova, and at Obongi 20 miles further downstream only 1%. Lake Albert and the Nile are about 2,000 feet above sea-level. Inland, at Nyapea (over 5,000 feet) and Goli, infections in school children were 3 and 4% respectively, and 5% of all stool examinations at Arua were positive. Search was also made for evidence of *S. haematobium* infection, but 612 school children were examined at centres in the West Nile and Madi Districts without finding ova.

A large survey has been started in Lango District to delimit the region infested with *S. haematobium*. Both school children and the general population are being studied, and it has been possible to examine about 50% of the total population of areas covered by the survey. Several hundred waterholes were investigated. Advice and instruction are being given on the

use of latrines and the protection of water supplies, while plans have been made to increase the number of bore-holes. Nilodin has been used to treat a few cases in hospital, but it is unlikely that the incidence of the disease can be reduced significantly by curative measures.

An outbreak of haematuria was reported in March from the north of Busoga District, and surveys showed that vesical schistosomiasis occurred at scattered points over a stretch of land 65 miles long bordering the southern shores of Lake Kioga and the Mpologoma Swamp. The patients, nearly all of whom were school children, were treated by the travelling dispensary, using anthiomaline; since the original outbreak, few fresh cases have been notified.

Work has been continued by Professor J. Schwetz on the material collected in Lango, and he has demonstrated that *S. bovis*, the commonest infestation of snails, can be transmitted experimentally not only by *Physopsis nasuta* but also by *Ph. africana*. A short-lived human infection with *S. bovis* was reported from Entebbe.

Suggestions were put forward for treating dams in Mbale District with copper sulphate. No recent surveys have been carried out in this district, but the first recorded case of schistosomiasis in Uganda seems to have been the patient at Mbale in 1909 who was mistakenly diagnosed as recurrent blackwater fever until the urine was examined microscopically.

(3) Direct Infections

Anthrax.—The mild form of the disease continues to crop up in the south-west of the Protectorate (Ankole and Masaka) but more virulent outbreaks have occurred elsewhere. There were two slight recrudescences of infection in Teso, in areas affected during 1949, and larger outbreaks occurred in the West Nile District. At Panyamur, at the northern end of Lake Albert, 200 goats died and many people were ill after eating the infected meat. Four deaths occurred and malignant pustules were seen in five other patients. More than 100 miles lower down the Nile a dead hippopotamus washed ashore provided a feast for 300 people, of whom 12 died from intestinal anthrax; it is possible the hippopotamus was infected at Panyamur. This second outbreak extended to cattle and chickens in the vicinity, and the cotton store in which the carcass was cut up had to be burnt with the cotton in it.

The view has been expressed that these outbreaks are not an indication of any real spread of the disease, but that the disease had previously been endemic among cattle in the districts concerned. Prompt and strict quarantine by the African Local Government in Madi limited the extension of the second outbreak, and it seems likely that the close proximity in which man and cattle live together in insanitary huts was responsible for the first outbreak in the West Nile District.

Cerebrospinal Meningitis.—The number of cases and deaths reported have again decreased (185 cases with 50 deaths, compared with 550 cases and 94 deaths in 1949). It is probable that many of the cases reported are not due to the meningococcus, but that patients suffering from pneumococcal or other forms of meningitis, or even from cerebral malaria, may be included. Teso and Mbale districts account for more than half the reports.

Leprosy.—The Inter-territorial Leprologist carried out a survey in Kigezi, a district on the borders of the Belgian Congo, and found that only six per thousand of the persons examined were infected with leprosy. This was an unexpected result, and may be partly attributable to the existence in Kigezi of one of the largest and longest established settlements in the Protectorate. In the past, this district has headed the list of those in which the disease was commonest (Annual Report, 1928, page 12).

A rapid survey for leprosy, undertaken in conjunction with an examination of 55,000 people for trypanosomiasis in Koboko and Maracha Counties of the West Nile District, revealed an incidence of 2·2 per 1,000. While this figure must be accepted with some reserve, surveys of this kind are of value if the degree of diagnostic error can be assessed.

Renewed interest is being taken in treatment now that the new sulphone drugs are available. During the year, diaminodiphenylsulphone has become the drug of choice. Trials of the thiosemicarbazones are also being made. It is interesting to note that the use of hydnocarpus oil has increased coincidentally with the extended use of the new synthetic preparations.

Attempts have been made to treat patients in district hospitals, but it has been found that they are unwilling to remain for the prolonged period necessary and are reluctant to work while they are in hospital. Proposals from local authorities for the establishment of a system of dispensaries around Mount Elgon are being considered in the light of incidence and the practicability of ensuring adequate medical supervision. It is most unlikely that any scheme for out-patient treatment will prove successful in the absence of regular examination of patients by experienced doctors.

The existing leprosy settlements continue to expand, and the numbers coming for treatment often exceed the accommodation available. Sites for additional settlements were sought in Buganda and in the Western Province; by the end of the year a site had been chosen 20 miles south of Fort Portal (Toro District) for a settlement which it is proposed should be established by the White Fathers' Mission with Government help. In the West Nile District, the African Inland Mission has commenced leprosy work with a small hospital accommodating 36 patients at Kuluva, 7 miles from Arua.

Details of the patients and finances of the leprosy settlements are set out in Tables 10 and 11.

TABLE 10

Summary of Patients in Leprosy Settlements

	Bunyonyi		Nyenga		Buluba		Kumi and Ongino		TOTAL	
	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950
Patients resident at start of year	747	816	201	233	300	351	528	548	1,776	1,948
Admitted ...	137	120	130	122	146	254	408	591	821	1,087
Births ...	20	35	1	2	5	7	7	8	33	52
Discharged / Absconded	52	20	93	72	89	88	370	114 / 159	604	453
Deaths ...	16	26	6	4	11	7	25	29	58	66
Patients resident at end of year...	816	916	233	267	351	447	548	821	1,948	2,451

TABLE 11

Grants to Leprosy Settlements

	Bunyonyi	Nyenga	Buluba	Kumi & Ongino	TOTAL
From Government—	£	£	£	£	£
Maintenance	1,163	867	779	1,661	4,470
Buildings	247	204	200	349	1,000
Water supply	...	...	...	250	250
Doctor's salary	300	...	300	300	900
Value of free drugs ...	613	641	892	880	3,025
From African Local Governments	163	500	1,800	3,217	5,680

Higher wages and a rise in the price of native-grown food and in building costs have affected the settlements. Expenditure on maintenance at the two larger settlements has doubled since 1948.

It is noteworthy that the Acholi now provide almost as many patients at Kumi as the inhabitants of the district (Teso) in which Kumi is situated. Reports suggest that the rapid appearance of lesions in the Lango and Acholi may be due to a lower racial immunity.

Measles.—The year has shown a sharp increase in this disease; this is not fully reflected in the hospital statistics, as uncomplicated cases are not usually admitted to hospital.

TABLE 12

Measles

	1946	1947	1948	1949	1950
Admitted to hospital ...	377	440	225	266	848
Deaths in hospital	...	2	2	3	9

Normally a few cases are reported from every district, but in 1948 Moyo, in the far north-west of the Protectorate, experienced an epidemic of measles on account of which 70 patients were admitted to hospital. In 1949, Kitgum—again in the far north—was the principal contributor to the total of in-patients, with 103 patients. About the middle of the year the disease appeared in Luzira Central Prison, and began to be reported with increasing frequency throughout Buganda. In 1950 nearly all stations reported an increased incidence, Masaka admitting 201 patients, Mulago Hospital 123 and Jinja 119. It is of interest that Kigezi, where the climate is more temperate than tropical, has remained practically immune from the disease during the past three years.

Poliomyelitis.—The number of patients notified rose from 12 in 1949 to 18 in 1950; 16 were treated in hospital, with one death. Two of the patients were Europeans and four were Asians; all except two were reported from the three districts bordering the shore of Lake Victoria—Masaka, Mengo, Busoga.

Smallpox.—Five cases with no deaths have been reported, no district in the Protectorate reporting more than one case. The type of disease was uniformly mild. Chickenpox has been prevalent in many districts, leading to some difficulty in differential diagnosis.

Tuberculosis.—The number of patients treated shows a considerable decrease during 1950, but this may be the result of the change described in section IV (C). The deaths in hospital numbered 109, compared with 110 in 1949.

During the year the report submitted by Dr. Santon Gilmour was studied in detail, and his original records of tuberculin reactions were made available for analysis. In the table below the unweighted means for some age groups are given as a guide to the values to be expected.

TABLE 13

Tuberculin Reactors (1/10,000 *dilution*)

	Age					
	Children				Adults	
	0–5	6–10	11–15		16–35	36–
Percentage reacting ...	6	20	25	Males	49	48
				Females	36	44

Taking the 16–35 age group and combining the results for both sexes, the percentage of reactors varied from 25% in Acholi District to 49% in Ankole District. The highest rate recorded was in 71 adult males examined at the tin mines in Ankole, of whom 69% were positive reactors. It is this group which accounts for the higher overall percentage for immigrant tribes; elsewhere in the Protectorate, immigrants and indigenous population in the same region have equal rates of reaction.

Clinical trials with the newer drugs such as streptomycin, the sulphones and *para*-aminosalicylic acid have been undertaken on a small scale at Mulago Hospital. There are indications that these drugs may prove of value in the treatment of Africans.

Fifty beds out of the total of 653 at Mulago Hospital are set aside for the care of tuberculous patients, and several district hospitals have now been supplied with apparatus for collapse therapy. African nurses at Mulago Hospital have been tuberculin-tested, and negative reactors are to be immunised with B.C.G. vaccine.

Typhoid.—Fewer patients were treated in hospital than in the previous year. The decrease was most marked in Mengo District and particularly in the area around Kampala.

TABLE 14

	1948	1949	1950
Admissions to hospital	342	469	336
Deaths in hospital	56	77	60

In some areas the improvement may be attributable to construction of additional latrines and the closure of insanitary wells. A milk supply was the source of infection in one instance; the custom of boiling milk prevented an explosive epidemic, but cases continued to appear over a long period.

At Masaka Hospital, 80 patients were treated in 1950 as compared with 48 in 1949. A small epidemic near Kabale was thought to be due to pollution of a stream by insanitary latrines.

Venereal Diseases.—There are several sources of information throwing light upon the incidence of venereal disease, but none can be accepted without reservation. Deaths from the sequelae of syphilis among prisoners and mental patients (pages 31 and 40) relate to infection acquired many years ago, and also to a selected population. Hospital out-patient returns include patients in all stages of syphilis and in many of whom the diagnosis may have been made on history alone. In 1950, 2,322 patients (2·5% of all in-patients) were admitted to hospital; the rates for both out-patients and in-patients were highest in the Eastern Province, higher in district hospitals than in rural hospitals, and lowest in the Northern Province.

The maternity centres provide information of variable reliability. Whilst 186 babies were reported as congenital syphilitics out of 5,585 live births in institutions submitting detailed reports, the largest single records (28 and 20 respectively) are suspect; omitting these, the rate is less than 3% of all babies. The rate for the largest hospitals in Buganda and the Eastern Province was 0·4% but this low rate may be influenced by the results of treatment of the mothers, since 75% of these women attended as ante-natal patients. Deaths ascribed to congenital syphilis in the neo-natal period amounted to 42 (9% of all neo-natal deaths in 1950, compared with 12% in 1949), giving an infant death-rate in hospital of 2·2 per thousand live births (3·2 per thousand in 1949).

While the rural maternity centres probably diagnose syphilis too readily, they tend to overlook gonorrhoea which, with rare exceptions, is diagnosed and treated at the major hospitals only. The survey of blindness in 1944 showed that about 0·3 per thousand of all children under the age of five were totally blind; although measles and meningitis are partly responsible for this blindness, the bulk of the cases are probably attributable to gonorrhoea. The returns of ophthalmia neonatorum are disappointing; the high rates from individual units in the Eastern and Western Province probably include many non-gonorrhoeal conditions, but it is curious that the condition should be apparently rare in Buganda.

Neohalarsol (oxyarsphenamine tartrate) has been widely used in the past few years in place of neoarsenobenzol, and investigations have been made to determine the relative efficiency and advantages of the two drugs in the treatment of early syphilis of the male. So far, the investigations have been in favour of neoarsenobenzol, taking the attendance factor into consideration. Penicillin is used on a small scale, and it is hoped to employ this drug more widely. Both penicillin and the arsenical preparations are subject to theft and misappropriation on account of the great popular demand for these remedies for venereal infection (and, indeed, for any form of ailment); efforts to exercise greater supervision over their administration in Government units often leads to a larger proportion of patients being "treated" by illicit injectors. The need for such supervision, not only to ensure adequate treatment of the individual and to obviate toxic episodes, but also to avoid the establishment of drug-resistant strains of organisms, is not fully appreciated by the lay public.

Yaws.—The campaign which was started in 1949 continued under the guidance of Dr. R. Alexander until his departure in May 1950. During the campaign 25,585 patients were treated at a cost of nearly £8,000, half of which was defrayed by the Lango African Local Government. To estimate the effect of the campaign a further follow-up survey was carried out at Bala, ten months after the survey mentioned in the 1949 Annual Report. One hundred and thirty-two cases of yaws were found, of whom one-half were infective; this suggests that the number of infective cases has begun to rise again (from about 5% to 8%) and further stimulation towards early treatment is clearly necessary if the effect of the campaign is to be sustained.

The need for an adequate initial survey before starting a campaign such as this, in order that some estimate may be made of the effect it produces, is clearly illustrated. The impression has been prevalent that 100% of the population over the age of 10 years were infected, and that about 90% of infants in arms were infected. Analysis of the survey reports shows this to be wide of the mark. Primary infections in adults are by no means uncommon, and their relative frequency is about one-tenth of that for children under the age of five. The proportion of any age group showing signs of previous infection increases steadily throughout life; for the 15–20 age group it is three times greater than for the 5-15 age group and increases a further 50% for adults. It seems that the early surveys were carried out on groups which were by no means representative.

News of this campaign has encouraged more active measures in other districts, and in Madi sub-district of the West Nile District the African Assistant Medical Officer has inaugurated a similar campaign on his own initiative. In spite of a network of sub-dispensaries, it is still found that about 10% of all out-patients in Madi attend on account of this disease. In Busoga, one travelling ambulance is engaged on anti-yaws treatment, and the Health Van has performed a similar duty around Bombo.

D. Health Education

A number of different educational media were used intensively and systematically during 1950 to arouse public interest in dangers to health from the contamination of water supplies and the insanitary disposal of faeces. The prevalence of typhoid fever in parts of Buganda has been notably high in recent years, and it was decided to initiate a campaign to encourage the digging of pit latrines and the protection of water supplies. Health Weeks were held, pictorial and other forms of demonstrations being combined with lectures and films at central meeting places. At the first Health Week, talks were given by the Director of Medical Services, specialists and other experienced officers. These were followed by the initiation and completion of various sanitary works by voluntary manual effort in which doctors and chiefs led the way. The success of these gatherings was attributed to the stimulus applied to the popular imagination and the provision of simple objectives to which communal activity could be directed. Activity of this kind is less common nowadays, although it is probable that many people would derive satisfaction from it.

Apart from the large demonstrations held in Buganda at Mukono, Wakiso and Kasangati, many individual Assistant Health Inspectors initiated latrine campaigns in their local areas. These subsidiary ventures have in many cases been highly successful; part of their success is attributable to the facilities given for chiefs from outlying areas to see for themselves what was being achieved in the earlier campaigns. Transport for this purpose was one of the recognised tasks of the Buganda Government Health Van.

In the northern parts of Uganda, one or more annual demonstrations are organised jointly by the Medical and other departments, featuring model houses and water supplies, together with instruction on methods of improving diets and of keeping livestock under more sanitary conditions. As a sign of the growing awareness of existing defects, several African Local Governments have passed bye-laws dealing with standards of housing, sanitation, leprosy control and other health matters. In Busoga, competitions for healthy babies and good houses have been popular and effective.

Publicity in the vernacular press has been a useful means of disseminating information and will become of greater importance as the circulation of these news-sheets increases. Articles by medical staff on subjects such as tuberculosis, typhoid or leprosy, reports on topical matters, such as the progress of well and spring protection or action taken to improve milk supplies, and replies to complaints or questions raised by correspondents, are becoming a regular feature. The Department of Public Relations and Social Welfare co-ordinates these efforts, and also assists through the Mobile Cinema and in the making of films locally. It has been found advantageous to show films twice, to draw attention to details which may have been overlooked at the first viewing; the psychology of unsophisticated audiences was given special attention, as it is not uncommon for minor features to interfere markedly with the appreciation of an apparently straightforward lesson.

Peripatetic demonstration teams have done good work, and it is intended to use such teams extensively in connection with problems of special local importance (e.g., schistosomiasis, guinea-worm, etc.).

One result of these educational efforts has been an increased demand for concrete stances for pit latrines. These are now manufactured at various centres and sold at cost price. Over 1,200 were sold in Mengo and Masaka Districts during the year.

A new venture which has made a promising start has been the opening of several Health Centres around Kampala under the guidance of a woman Medical Officer. These centres are based on Child Welfare Clinics, and special attention is given to cookery demonstrations and infant feeding; recipes for infant diets are distributed, and dried milk is sold at cost price to increase the protein and mineral components of these diets. Simple explanations of the need by young children of first-class protein foods have produced good clinical results. Opportunities are also being taken to carry out routine surveys of stools and haemoglobin levels, to perform Schick and tuberculin tests, and generally to obtain factual data regarding the health of infants and young children.

There is no doubt that a campaign focussed on one predominant disease creates greater interest and achieves far more than general efforts at health education made in the course of dispensary work. This method was adopted in 1949 for yaws in Lango, and similar yaws campaigns have been initiated in Madi, Bombo and Busoga. Other examples are bilharzia compaigns in Lango and Busoga, and anti-malarial work in the Kigezi resettlement area.

There are many fields in which steady and continuous educative efforts are required to overcome natural inertia and to break down superstitious beliefs and taboos. Among beliefs which are still in need of eradication are the notions that magical poisoning can be effected on a person who uses a pit latrine, that eggs and other valuable articles of diet have undesirable effects, and that the "injection" is the only effective form of medical treatment.

E. Maternity and Child Welfare

The popularity of the maternity services continues, and the number of live births in institutions has increased 13% above the 1949 level. Although there was a similar increase in the number of still-births (11% above the 1949 level), there was no corresponding increase in deaths of infants or mothers.

There has been no increase in ante-natal patients, and the recorded number of attendances per patient has fallen slightly from 4·2 in 1949 to 3·9 in 1950.

TABLE 15

Ante-natal Supervision—New patients and re-attendances

	1948	1949	1950
New patients—			
At Government hospitals	34,080	34,906	34,388
At Government rural centres	32,500	34,758	32,865
At all Government units	66,580	69,664	67,253
At all Mission units	24,201	28,835	31,219
TOTAL PATIENTS	90,781	98,499	98,472
Re-attendances—			
At Government units	210,799	218,444	208,585
At Mission units	78,476	91,367	82,392
PROTECTORATE TOTAL ...	289,275	309,811	290,977

TABLE 16

Institutional Deliveries

	1949	1950		
		Government units	Mission units	All units
Abortions—				
Threatened	...	474	526	1,000
Complete	1,523	806	352	1,158
Full term deliveries—				
Live birth	18,101	11,852	8,570	20,422
Still-birth	1,098	833	376	1,209
Deaths—				
Infant	486	313	183	496
Mother	214	169	46	215

More than half the deliveries occurred in Buganda Province, while the Northern Province had the fewest (5%). One would expect centres handling only a small proportion of the total deliveries to deal with more abnormal cases than centres which deliver a larger proportion of the population, yet comparison of the provincial totals does not support this.

TABLE 17

Results of Delivery by Provinces

	Buganda	Eastern	Western	Northern
Estimated total births	30,000	35,000	40,000	30,000
Deliveries in hospital	11,129	6,750	2,581	1,171
Still-birth rate (per 1,000)	53	56	68	44
Infant death rate (per 1,000 in institutions)	28	20	22	14
Maternal death rate	9·3	10·2	11	12

The value of ante-natal supervision cannot be demonstrated by comparing results in patients who attended for ante-natal supervision with those in in-patients who did not attend, as the latter group includes many difficult labours admitted after failure to complete delivery at home. A similar effect produced by the transference of patients from rural clinics to hospitals is shown below.

TABLE 18

Mengo District—Institutional deliveries (All rates per thousand)

	Still-birth rate	Infant death rate (in institutions)	Maternal death rate
With ante-natal supervision—			
Delivered in hospitals	52	19	8
Delivered in rural centres	22	13	0·9
Without ante-natal supervision—			
Delivered in hospitals	168	83	42
Delivered in rural centres	88	50	12

In view of the doubtful reliability of the registration data, an estimate has been made of the limits between which the above rates will probably lie. Two postulates may be set up: (1) that all women who had attended at ante-natal clinics and suffered any mishap (still-birth, death of child or mother) were in an institution at the time of the mishap; and (2) that mishaps were equally distributed among the women who were delivered in institutions and those who were delivered at home. Between these two limits the true rates will probably lie.

TABLE 19

Mengo District—Results in women who attended for ante-natal supervision

	Still-birth rate	Infant death rate (in institutions)	Maternal death rate
Rate based on—			
All women attending clinics	8·4	3·8	1·0
All women admitted for delivery ...	36	16	4·2

Using European experience, it would be expected that about one-quarter of all deaths of infants during the first year of life would occur during the period the mother is in hospital. It seems that the second assumption gives a more realistic estimate, and that while still-births are low, the maternal mortality rate gives no cause for complacency.

TABLE 20

Causes of maternal death

	1949	1950
Sepsis	27	25
Toxaemia	3	5
Haemorrhage	33	37
Abortion	12	11
Ruptured uterus	39	40
Other complications	100	97
TOTAL MATERNAL DEATHS ...	214	215

Ruptured uterus occurs in all parts of the Protectorate, and there is nothing to suggest that it is due to previous Caesarean section. The three African hospitals in Kampala reported 16 deaths between them, and it seems that ante-natal supervision does not reduce the proportion of deaths due to this cause and that the total rate still remains high.

TABLE 21

African Hospitals, Kampala

	With ante-natal supervision	Without ante-natal supervision
Total attending	7,331	...
Total deliveries	2,358	662
Total deaths	14	33
Deaths from ruptured uterus... ...	5	11

Native ecbolic drugs are occasionally mentioned in reports of maternal deaths, but in no case in 1950 were they suggested as the likely cause of rupture of the uterus. The only remedy which appears likely to reduce mortality from this cause, and in other cases of prolonged and obstructed labour, is to bring into hospital as speedily as possible any parturient woman who is experiencing abnormal delay.

F. School Health

No medical officer was available for school duties in Kampala, and the shortage of European staff in other stations has prevented any special work in this branch. Routine examinations have been carried out by Assistant Health Inspectors in their areas. Children are encouraged to bring food with them for a mid-day meal.

Overcrowding still exists in Kampala, but two of the Indian schools were collecting funds for rebuilding programmes. The health of the children

at these schools remained good during the year, and no outbreaks of infectious disease occurred. Schick-testing showed that, while African school-children were generally Schick-positive, 96% of the Indian school-children gave evidence of immunity. On an average, one Asian child dies from diphtheria annually, and less than 15 cases in all races are reported each year for the whole Protectorate. The Kampala Municipality spent close on £500 on a vaccination campaign against diphtheria, whooping cough and enteric fever.

G. Environmental Hygiene

(1) Housing and Town Planning

The absence of gazetted trading centres and properly surveyed plots for non-African traders has been one of the main factors impeding attempts to improve standards of building and sanitation in Buganda Province. Although accurate surveying of African-owned land has been undertaken for many years, land leased to non-Africans is commonly "surveyed" merely by pacing out the frontage; leases are generally on a year-to-year basis, which is not conducive to the erection and proper maintenance of good permanent buildings. Reforms have been suggested which will facilitate the application of the Public Health Building Rules, so that control may be more readily exercised.

Conditions in the Kibuga and other African-owned land around Kampala, where uncontrolled non-African building and occupation are at their worst, remain most unsatisfactory. Progress has been achieved in some directions. A campaign for improving eating-houses has made good headway, two slaughter houses are being built, public latrines have been installed, negotiations for the lease of land for markets have been initiated, methods of refuse disposal by composting have been proposed, and piped water supplies are being extended. It is estimated that 2,000 Asians live on African-owned plots in this area.

At Namirembe and Bombo, new plots are being offered on 49-year leases, and a Town Plan has been drawn up for Namirembe. Jinja and the industrial area around it have been declared a Town Planning Area, and special administrative measures have been taken to deal with the developments now in progress there.

Additional housing for Africans has been erected at Kampala, Jinja and other towns. At Jinja, in addition to accommodation provided by employers, close on a thousand workers are housed on the Walukuba estate. A method of water-borne sanitation suitable for African housing estates has yet to be evolved; the aqua-privy type was found unsatisfactory, and trough-closets are at present being employed.

The provision of additional housing for Europeans and Asians has been speeded up by putting work out to contract and using pre-fabrication methods.

(2) Water Supplies

Water examination.—Bacteriological examinations were made of 213 samples during the year (153 in 1949), the larger towns having routine

monthly examinations. Seven examinations of water supplies were made in connection with the new brewery at Port Bell.

Fifty-four samples were examined by the Government Chemist (48 in 1949), and advice was given on their suitability for industrial or domestic purposes and on methods of treatment.

Rural water supplies.—In addition to the installation of bore-hole pumps and the construction of dams by the Protectorate Government and African Local Governments, local communities have been active in improving their water supplies. These efforts were particularly notable in parts of Buganda, where 129 protected springs and fifty tanks have been completed. Experiments have been made with wells formed by sinking circular concrete pipes (as used for road culverts) to a depth of 15 feet, and installing a rotary hand-pump.

It is a common occurrence for springs and seepages to dry up, either from a drop in the level of the water-table (for which man may at times be responsible, by his work on swamp drainage or afforestation), or from blocking of percolation channels or opening up of new seepages. Some of the methods advised for protecting springs in the past may have aided these natural processes, either by disturbing the impermeable clay below the spring during the building of a retaining-wall or by raising the water-pressure in the percolation channels. A basin-type method of spring protection is now in use, the essential features being the deepening of the drain below the outlet and the deflection of surface drainage away from the protected area, interfering as little as possible with the spring itself.

(3) Food Supplies

Fifty samples of milk were received for analysis by the Government Chemist and eleven were found to be either watered or deficient in milk fat. Active steps to improve standards of milk supply have continued in many stations. In Entebbe, 10 out of 23 samples were found deficient, but a warning was sufficient for the milk vendors, who are all registered by the Health Office. In Masaka, 387 tests led to 75 convictions, taken in the native courts. In Kampala, 23 samples were taken; the three resulting prosecutions resulted in three convictions, and fines totalling over one thousand shillings were imposed. Milk can washing stations have been established in Kampala, and are popular with vendors; the opportunities for personal contact between health authorities and vendors are considered to have contributed to the improved quality of Kampala's supply.

In Kampala alone, 662 tins or bottles of foodstuffs were condemned; tinned fish was the biggest single item (198 tins). Other foodstuffs examined by the Government Chemist included vegetable oil (12), ghee, maize meal, sugar and jaggery.

Steps that will eventually improve the stability and standards of the territory's food supply have been the erection of a modern storage plant for grain at Jinja and the extension of the Uganda Fish Marketing Board's activities in processing, preserving and distributing fish.

(4) Urban Sanitation

New Drainage and Sanitation Rules came into force during the year and a committee was at work on a revision of the Building Rules.

The Medical Officer of Health reported considerable progress in Kampala Municipality; 6,475 rats were exterminated in 1949 and 16,189 were trapped and poisoned in 1950; over 100 premises were dealt with for insect infestations; close on 150,000 inspections of premises for mosquito breeding resulted in 32 breeding places of *Aedes* being discovered. Jinja reports a persistence of the medieval custom of throwing slops from upper story windows (a practice which is being discouraged), and has acquired two lorries equipped with tanks for collecting night-soil from those premises still without water-borne sanitation. Masaka has been able to prohibit the occupation of cellars.

In the Eastern Province, action was taken to increase the disposal of sullage water in soakage pits inside plot boundaries.

(5) Rural Sanitation

Good progress has been made in many districts in the campaign for installing and using pit-latrines. In Buganda the campaign has been aided by the Health Weeks, and individual Assistant Health Inspectors have been able to report steady advances. In one area about 40 miles north of Kampala, 13,000 pit-latrines had been dug and others were under construction among a population of 63,000 persons; that is to say, practically every household had the use of a latrine. The same is reported, on different scales, from districts as widely separated as Busoga and Madi.

The value of Hygiene Orderlies is discussed on page 39 (Section VI) and their future is being reviewed. Generally speaking, their work has been less successful than had been hoped. On the other hand, many commendatory reports have been received on the activities of Assistant Health Inspectors; these men have the advantages of a higher educational standard and a longer training, as well as closer European supervision. They have been concerned chiefly with rural hygiene. Urban sanitation has mainly been undertaken by European Health Inspectors, who have also been responsible for the promotion and control of health work in the rural areas. A valuable spirit of co-operation generally exists between Health Inspectors and the chiefs and people of the areas to which they have been posted.

H. Health of Labour

Responsibility for the medical care of employees rests upon the employer. The smaller employers provide boxes of simple remedies, while the larger estates and industrial enterprises maintain dispensaries or hospitals under the supervision of their own doctors. The majority of patients suffering from serious illnesses are treated in Government hospitals. Inspection of labour camps is now undertaken by officers of the Labour Department, Medical Officers and Health Inspectors furnishing advice and any special supervision that may be required.

The legislation governing the employment of labour was amended in the light of difficulties connected with the housing of employees in congested urban areas. Among other changes has been the addition of licensed medical practitioners to those qualified to carry out statutory examinations for the purpose of the Workmen's Compensation Ordinance.

Returns of sickness from employers throw useful light on health conditions among their employees. Two estates employing over 8,000 labourers each had approximately 2% of their labour forces reporting sick each day. On an average, each labourer had 3·3 illnesses in the course of a year, and attended 7·3 times for treatment. These rates compare not unfavourably with sickness rates in the United Kingdom, but the death-rates (9 and 5 per thousand) are unduly high for a group in which young adults predominate. The death-rate from malaria was about four times the rate among the general African population.

Altogether, returns of illness and death are received on almost 40,000 employees. The average death-rate for 1950 was 3·4, the highest being recorded at a tin mine (22 per thousand). Four deaths were reported from injuries, two being at saw-mills and one at a mine. The average number of illnesses per head during the year was 2·17.

The majority of the labourers on the larger estates are immigrants either from outside the Protectorate or from other districts, and their state of immunity against malaria probably differs considerably from that of the indigenous population. Less relapsing fever than in 1949 has been reported by some estates, but this may be the result of the number of immigrants being less in 1950. Among immigrants repatriated on medical grounds, tuberculosis was the largest single cause of disability.

Accommodation for immigratory labour on the two main labour routes was substantially improved. There was increased recruitment of labour from Kigezi District for mining and agricultural work in the three southern provinces.

Progress has been made in connection with the health of labour at Jinja. The incidence of illness has been low, the two most prevalent causes being malaria and venereal disease. A doctor has been employed for the medical care of men working on the Nile dam project, and a dispensary has been built by the contractors. Married quarters, a canteen and a shop have been provided for the African labourers. The general standard of sanitation has been steadily improved.

No further cases of silicosis have been reported from the tin mines in Ankole or among men who have worked there in the past. One mine had the high death-rate of 22 per thousand (7 deaths) but the causes of death are unfortunately not reported. Workers in the tin mines gave the highest rate of tuberculin reactors. The possibility of silicosis occurring at Kilembe and other mines has been realised, and precautions have been taken to reduce this hazard.

I. Port Health

Airports

The flying-boat service via Port Bell was discontinued in November 1950, and Entebbe is now the only airport used regularly by planes from

outside the Protectorate. Entebbe is the last stop in the yellow fever endemic zone before Khartoum is reached by north-bound aircraft, and terminal disinsectisation is carried out before departure. Approximately 1,250 aircraft were sprayed during the year, using either the Aerosol bomb or the Aerograph spray.

The *Aedes* Index for Entebbe was 0.032%. During the course of the year 70,433 inspections of premises were made, 5,493 tree holes were filled, 8,832 tins and bottles removed and 3,870 plants which might serve as breeding places for *Aedes simpsoni* were eradicated.

Marine Services

Reports of enteritis affecting passengers on the Nile route led to an investigation of the possible causes of the illnesses. Bacteriological investigations led to the discovery of a carrier of bacillary dysentery (Newcastle bacillus) among the staff of one of the steamers. After the removal of this carrier, and the improvement of food-handling methods, no further reports were received.

SECTION IV—CURATIVE SERVICES

A. Hospitals

Staff

In spite of the improved staff position, Hoima, Tororo, Mubende and Moroto still lacked European Medical Officers at the end of the year, and two Provincial Medical Officers were carrying out district duties in addition to their provincial work. Resignations of Assistant Medical Officers made it necessary to leave the rural hospitals at Serere and Kamuge (Eastern Province) in charge of Medical Assistants.

Accommodation and Equipment

It was found possible in several hospitals to reduce overcrowding and abolish floor-cases by limiting admissions to those in immediate need of hospitalisation. Losses of sheets, blankets and other equipment have been troublesome; special checks and improved systems of accounting have been instituted for the larger hospitals, while the provision of shelters for relatives outside the hospital grounds—as at Jinja—should help to keep unwanted visitors out of the wards.

The problem of ambulant sick who need daily attention has been receiving consideration. The destitute and infirm, who tend to stagnate in hospitals, will have to be accommodated elsewhere if hospital beds are to be used to the best effect.

Buildings

The hospital at Moroto and the new operating theatre at Arua were completed during the year. The new maternity ward at Lira was still under construction.

In Buganda Province, work was in progress on extensions to the Asian Hospital, while at Mulago Hospital repairs were effected to wards and the telephone system was reorganised. Bombo Hospital was reconstructed and enlarged, making use of concrete-murram blocks.

At Jinja a six-bed unit was completed for the European Hospital, with extensions to the operating theatre, dental clinic and nursing sisters' quarters.

A new isolation ward was erected at the African Hospital, Jinja, but two wards had to be demolished. Numerous minor improvements have been carried out at other hospitals. Quarters occupied by staff at Namasagali had to be returned to the railway authorities, and this necessitated the temporary use of aluminium huts for housing.

B. Dispensaries

The usual requests for new dispensaries were received from districts which profited by the sharp increase in prices of export crops and where the founding of dispensaries is a simple and popular method of reducing surplus balances. It is difficult to get people to understand the full implications of maintenance and supervision, the problems of supplying and keeping the necessary staff, and the more urgent need for improving the unsatisfactory conditions which produce so much ill-health. One new dispensary was sanctioned for the Sebei to the north of Mount Elgon, where a large population has had to traverse difficult terrain in order to obtain medical aid.

In Buganda Province, a dispensary for the Empire Cotton Growing Organisation's research station at Namulonge is also serving the general population and a similar arrangement is proposed at Kitalya. The new buildings at Kiboga dispensary were completed by the Buganda Government, as the contractor failed. The Mengo District health van, used primarily for the health education campaign, has been used to carry materials needed for the protection of springs and wells, and has also acted temporarily as a travelling dispensary while engaged on health work. An emergency ward has been added to Nakasongola dispensary, and rebuilding of Kakuto dispensary (Masaka District) was in progress.

Dispensaries under construction at Kiyunga and Kamuli (Busoga District), Magoro (Teso District) and Buwalasi and Butiru (Mbale District) were completed during the year. The standards of dispensaries in many districts were improved by replacing existing buildings in more permanent materials. The dispensary at Koboko (West Nile District) was replaced, and permanent staff quarters built at Rhino Camp and Pakwach; in Ankole District, Bushenyi maternity centre was rebuilt in permanent materials and water-tanks were added to Rubale and Kabwohe dispensaries; in Kigezi District a permanent ward was added at Bugangali dispensary.

The feeding of in-patients at dispensaries has been the responsibility of African Local Governments, who have supplied either money, food or the labour to cultivate food. In order to make the best use of these contributions it was arranged for the feeding of patients to be more directly under the control of District Medical Officers.

In the Northern and Western Provinces, many patients at dispensaries are housed in sick-lines of temporary construction and in native-type beds; this accommodation is not included in the accompanying summary of beds in medical units.

TABLE 22

Summary of Units and Beds in Government and African Local Government Institutions

	Kampala	Buganda Province	Eastern Province	Northern Province	Western Province	TOTAL
MEDICAL UNITS—						
Hospitals—						
European	1	1	2	...	...	4
Asian	1	2	4	1	2	10
African—						
District hospitals ...	1	3	4	5	5	18
Rural hospitals ...	...	2	6	1	...	9
Mental hospitals ...	1	...	...	...	...	1
Dispensaries—						
With beds	...	21	19	10	24	74
Sub-dispensaries ...	...	14	12	33	14	73
Aid-posts	...	42	11	7	36	96
Maternity Centres—						
At dispensaries ...	...	10	9	1	10	30
Solitary	...	...	1	...	1	2
BEDS—						
For Europeans ...	38	3	5	...	1	47
For Asians	41	12	38	3	7	101
For Africans—						
In district hospitals ...	653	453	627	315	337	2,385
In rural hospitals ...	...	91	249	28	...	368
In dispensaries and maternity centres ...	...	309	491	103	395	1,298
For mental patients ...	322	...	...	...	...	322
Total Beds	1,054	868	1,410	449	740	4,521
General beds ...	660	653	1,185	416	606	3,520
Maternity beds ...	72	215	225	33	134	679

TABLE 23

Comparative Summary of Hospital and Dispensary patients

	HOSPITALS			DISPENSARIES AND AID POSTS	ALL UNITS
	Admitted	Deaths	Total Patients	Total Patients	Total Patients
New patients—					
1948 ...	90,201	3,023	841,005	1,418,106	2,259,111
1949 ...	89,558	2,747	829,821	1,452,046	2,281,867
1950 ...	89,912	2,842	887,115	1,504,495	2,391,610
1950 ...	*Re-attendances*—		947,714	1,656,032	2,603,746
1948 ...	*Total Attendances*		1,864,709	3,299,910	5,164,619
1949 ...			1,725,661	3,198,376	4,924,037
1950 ...			1,834,829	3,160,527	4,995,356

TABLE 24

Summary of Patients

	Buganda Province	Eastern Province	Western Province	Northern Province	TOTAL
IN-PATIENTS—					
Hospital admissions—					
European	1,157	69	7	...	1,233
Asian	1,762	501	193	107	2,563
African	35,217	30,288	11,420	9,191	86,116
All hospital admissions ...	38,136	30,858	11,620	9,298	89,912
Dispensary admissions ...	Returns in	complete			
OUT-PATIENTS (*a*)—					
NEW PATIENTS					
At hospitals—					
European	4,477	1,644	380	230	6,731
Asian	6,421	4,919	1,042	242	12,624
African	282,891	325,377	130,863	128,629	867,760
Total new patients at hospitals	293,789	331,940	132,285	129,101	887,115
At dispensaries and aid-posts...	373,709	431,285	350,252	349,249	1,504,495
Total new patients ...	667,498	763,225	482,537	478,350	2,391,610
RE-ATTENDANCES ...	865,049	619,232	566,526	552,939	2,603,746
TOTAL ATTENDANCES ...	1,532,547	1,382,457	1,049,063	1,031,289	4,995,356

NOTE.—(*a*) Out-patient totals include all patients admitted to hospital.

C. Diseases Treated

The customary summary of diseases for hospital patients is set out in Appendix VI. One important change should be borne in mind when using these figures. The practice of entering all in-patient diagnoses in the out-patient returns was modified in May 1950, and the last column (formerly labelled "All cases" or "Total patients") will, in 1951, allocate the causes of morbidity among out-patients only, although the total of this column will include admissions to hospital. For 1950, the figures are intermediate between the old and the new, and cannot be used for comparisons of incidence.

Increasing need has been felt for some measure of the incidence of various diseases, both to assess relative needs or aetiological factors in different parts of the Protectorate and to analyse trends and the effects of methods of control. Besides the hospital returns and routine laboratory findings, the results of special surveys may be employed; all such data require cautious interpretation.

Consideration has been given to adopting the 1948 International Classification of causes of morbidity in an endeavour to simplify the existing returns and to provide additional information on matters of topical importance.

D. Mental Hospital Services and Mental Health

The number of patients treated in the Mental Hospital at Mulago has continued to increase, and in order to avoid serious overcrowding makeshift arrangements were necessary.

TABLE 25

Number of patients in Mental Hospital

End of	Total Patients	Of whom–		Planned Accom-modation
		Females	Criminals	
1946	324	94	52	206
1947*	330	97	51	206
1948*	295	90	49	206
1949*	390	121	58	322
1950	477	139	64	322

NOTE.—* In these years some district prisons were gazetted as mental hospitals, pending the building of new wards at Mulago Mental Hospital.

Plans are in hand for more spacious accommodation on a site outside Kampala.

The increase is due mainly to the increasing number of admissions; deaths and discharges are higher than in 1949 but do not exceed levels reached in the past.

TABLE 26

Mental Hospital Admissions, Deaths and Discharges

	Admissions		Deaths	Discharges
	New	Re-admis-sions		
1946	144	8	52	84
1947	177	18	58	131
1948	143	16	103	91
1949	199	19	49	74
1950	268	27	77	131
Criminal—				
Males	16	...	7	1
Females... ...	1	...	2	...
Civil—				
Males	187	21	52	95
Females... ...	64	6	16	35

Of the 77 deaths, 46 were due to the disease causing the mental illness, and of these 25 were the sequelae of syphilis (general paralysis of the insane 24, neurosyphilis 1). The relative incidence of these sequelae was more than four times as heavy among males than among females, while the death rate from all causes was 230 per thousand for males and 130 for females. Diseases of the respiratory system accounted for 23 deaths; pulmonary tuberculosis (5), pneumonia (11), pulmonary abscess (5) and bronchitis (2) were among other causes.

The use of convulsant treatment has increased, the numbers treated by this method having risen from 78 in 1948 to 230 in 1949 and 527 in 1950. The frequency of chronic pulmonary conditions (such as abscess or gangrene of the lungs) which has been noted in recent years was thought to be connected with the increased use of convulsive therapy; but a similar occurrence has been noted among deaths of prisoners (including lunatics in district

prisons) who have not undergone this treatment. The numbers concerned are small, and further information will be obtained on this point.

MENTAL HEALTH

Little work has been undertaken so far on this subject, but it is apparent that it will become increasingly important. The opinion of observers has been that while the usual psychoses, particularly the schizophrenic states, are well represented, the African is not so subject to psyschoneurotic illness as the European.

The absence of repression in the African may be gauged by the high rate of conviction for murder, which averages 10 per million from 1944–49. Suicide appears to be equally common in Africans and non-natives, causing a death-rate of about 0·1 per 1,000 annually. The number of cases dealt with by the District Courts under the Lunacy Ordinance has more than doubled during the last ten years. Elsewhere in Africa, trypanosomiasis has been suggested as a major cause of insanity; but although a few isolated deaths among prisoners were due to this disease in the '30s, it does not appear to have been associated with lunacy in recent years.

E. Dental Services

Owing to the loss by transfer of one Dental Surgeon, the dental clinic at Jinja was in abeyance for several months and district touring suffered. Towards the end of the year, the coincidental arrival of another Dental Surgeon, a dental mechanic and additional equipment enabled work to be resumed.

It was noted by one of the Dental Surgeons that adult patients have in general shown a high incidence of gingivitis, pyorrhoea and traumatic recession. The need for education in dental prophylaxis was apparent, and patients have been given advice on suitable brushing agents, non-traumatic methods of using the tooth-brush and soft wood sticks, and on the prevention of malocclusion in children.

F. Ancillary Services

(1) RADIOLOGICAL

The first Government X-ray plant, a coil machine ordered nearly 40 years ago for Entebbe Hospital, was in use at Mulago Hospital in the early '30s. All radiological examinations were later centralised in the Medical Laboratory building, but the growing amount of work has made it necessary to install supplementary apparatus for the European and Asian Hospitals, and to plan for a separate unit at Mulago Hospital in 1951.

(2) PHARMACEUTICAL

Increasing use was made of the newer drugs such as the antibiotics streptomycin and chloramphenicol, and the synthetic drugs which have have recently been introduced for the treatment of tuberculosis and leprosy. These drugs are usually very expensive in the period between the discovery of their value and their manufacture on a large scale. Their use in Uganda has therefore had to be restricted to conditions where they have an undoubted

superiority over other treatment, where they can achieve a marked reduction of mortality or duration of ill-health, and where they can be used under expert medical supervision. One thousand grammes of streptomycin (at Shs. 3 per gramme) were imported, and 150 grammes of chloramphenicol (at Shs. 15 per gramme). One of the earliest reports on the outstanding value of aureomycin in the treatment of trachoma came from the ophthalmological clinic at Mulago Hospital.

The growing number of new and powerful therapeutic remedies introduced over the past fifteen years has rendered superfluous many traditional remedies. A revision of the Uganda Pharmacopœia was completed during the year, as part of a drive to provide more suitable standards of drugs and equipment for Government hospitals. In accordance with a recommendation of U.N.O., the importation of heroin has ceased.

As a result of the decision to eliminate all but the most essential preparations, it has been possible to reduce the number of orderlies employed on manufacturing processes in the central Medical Store. Among the preparations no longer being manufactured is local starch. Some trends are shown by comparison of production in 1950 with earlier years.

TABLE 27

Summary of preparations manufactured

		Average 1945–8	1949	1950
Decreases—				
Starch, Local	*lb.*	1,138	580	...
Injection Bismuth Oxide	*litres*	1,412	1,661	979
Increases—				
Spray, D.D.T.	,,	938	4,975	5,236
Spray, Gammexane	,,	...	...	282
Emetine Hydrochloride injection ...	,,	22	23	36
Hydnocarpus oil injection		465	1,470	2,708
Ointments	*lb.*	25,580	12,484	24,827

Many articles and ingredients have risen in price during the year, the most prominent being—

TABLE 28

	Percentage increase	Present price
	%	
Blue blankets	131	Each Shs. 60.
Lint, plain	48	Lb. Shs. 7/67.
Elastoplast bandages	53	Doz. Shs. 39.
Mepacrine tablets	140	1,000 Shs. 13/33.
Glucose	65	Lb. Shs. 2/33.

Increasing difficulty has been experienced in obtaining early delivery of materials from the United Kingdom.

Comparison of the cost of medical treatment with past years is complicated by changes in the price-level and in the pattern of expenditure, as revealed by the following tables, but there can be no doubt that substantial economies have been effected.

TABLE 29

Expenditure on stores, drugs and equipment (special expenditure excluded)

Year	Vote	Percentage of total medical expenditure	Patients treated	Average cost per patient
	£000's	%	*thousands*	*cents*
1912 ...	1·7	6·7	100	34
1922 ...	5·0	6·4	104	96
1928 ...	22·5	16·4	548	82
1931 ...	27·6	15·4	1,042	53
1938 ...	26·4	15·8	1,190	44
1950 ...	123	20·9	2,463	92

The amounts of a few selected items are compared, the issues in 1950 being put alongside the issues ten years ago. They reflect not only the increased amount of work being done in hospitals and operating theatres, but also the wider issue of tablets for home use.

TABLE 30

Issues from Medical Stores

		1940	1950
For operations—			
Ether	*lb.*	576	1,746
Chloroform	*lb.*	954	2,848
Operating gloves	*pairs*	1,104	3,218
For fractures—			
Plaster of Paris	*lb.*	430	3,902
Plaster of Paris bandages ...	*No.*	1,572	4,488
Bedding— ...			
Pillow cases	,,	1,550	4,099
Sheets	,,	1,909	5,145
Drugs—			
Quinine tablets	,,	248,300	206,000
Mepacrine tablets ...	,,	50,400	2,783,500
Proguanil (Paludrine) tablets	,,	...	582,300
Aspirin tablets	,,	254,200	1,785,900
Aspirin, phenacetin and codeine tablets	,,	4,300	85,000

(3) REHABILITATION AND WELFARE

The staff of physiotherapists was increased to two during the year. They were fully employed in Mulago Hospital and in the European and Asian Hospital, Kampala.

Technical improvements have been made in the methods of occupational therapy, spinning and knitting in particular having improved in quality and speed. It was hoped that trained patients might be able to demonstrate

methods to other patients, but this has proved disappointing in practice. The systematic use of rehabilitative techniques is mainly confined to Kampala; efforts in district hospitals to provide useful occupations for long-term patients have not always been appreciated.

In the Mental Hospital, many patients have been taught knitting, needlework and rug-making, providing them with a source of income when discharged. One small improvement in the Mental Hospital—changing the colour of the uniforms of female orderlies from khaki to green—produced a notable increase in morale.

The welfare worker at Mulago Hospital is now attached to the Department of Social Welfare and Public Relations, and pays particular attention to the welfare of female staff.

(4) Ambulances and Transport

At the end of the year, the department possessed 21 ambulances and 19 other vehicles stationed at 20 units. Three unusable vehicles were awaiting disposal, and several others were kept running with difficulty. One station had three unserviceable vehicles, while others had to hire lorry transport to maintain services. To improve matters, a repair unit was started at Headquarters, undertaking maintenance and repairs which could not be carried out by existing agencies within a ressonable time.

Ambulances equipped according to European standards have proved unsuitable for out-station and district work, and general purposes vehicles of the light delivery type are now preferred. The transport of stretcher cases is only a small part of the duties of a district vehicle; the majority of patients transported are sitting or convalescent cases, while movements of staff and stores have also to be undertaken.

The drivers of departmental vehicles are all Africans. One driver involved in an accident causing the death of two passengers was sentenced to three years imprisonment.

SECTION V.—LABORATORY SERVICES

A. General

Most district hospitals were visited by the Senior Pathologist during the year. Intestinal infections contracted on the Nile steamer were investigated, and assistance was given in training staff for the Lango schistosomiasis survey. The co-operation of the Virus Research Institute at Entebbe in connection with typhus studies was greatly appreciated.

A tabular summary of the work done is given below. Interesting items include—

Murine typhus has been shown to be an endemic disease in Mengo District. *Rickettsia mooseri* was isolated from several cases, and a number of others were shown by complement fixation tests to be infections by this organism.

Atypical pneumonia; it has been noted that some drug-resistant pneumonias are due to infection by Friedlander's bacillus; in other cases, giant-cell pneumonia has been found at autopsy; cold agglutinin tests are being carried out in suspected cases of virus pnuemonia.

Gastro-enteritis in children; 24 strains of *B. coli* have been studied, some from kwashiorkor patients with enteritis; the alpha and beta types incriminated elsewhere have not been identified.

An unusual organism, apparently *Paracolobactrum*, was isolated from an African with septicaemia.

Rh factor: as a result of work on the ethnological aspects of sicklaemia in Uganda, blood sera were collected from Bwamba semi-pygmies for the Blood Group Reference Laboratory, London; these sera showed fewer Rh negatives than any negro population yet tested, a higher frequency of RH_o(cDe) and, apart from certain Berbers, the highest N frequency yet found in the Old World.

Blood sulphetrone estimations were performed on tuberculous patients under treatment as Mulago Hospital.

TABLE 31

Summary of work done in Laboratories at Kampala

Nature of examinations	1949	Total	1950		
			Africans	Europeans	Asians
Bacteriological	3,404	4,848	4,024	425	399
Serological	2,758	2,087	2,087	139	152
Venereal diseases—					
Kahn tests	26,566	28,817	28,465	52	300
Other tests	8,263	12,230	12,191	10	29
Haematological	15,383	17,827	14,829	1,758	1,240
Biochemical	3,247	4,002	3,796	114	92
Blood films for parasites ...	22,677	28,829	26,270	1,401	1,158
Urine examinations... ...	4,500	3,263	3,263	93	274
Faeces, microscopical ...	5,324	8,140	7,029	758	353
Sputum	1,288	2,532	2,441	12	49
TOTALS	92,101	114,103	104,393	5,662	4,046
OTHERS	700	8,935			

Summary of positive findings

		Positive	Total specimens
Blood culture	*S. typhi*	45	455
Faeces culture	Dysentery organisms—		
	sonnei	9	...
	schmitzi	1	...
	flexneri	11	386
Cerebrospinal fluid	*H. influenzae*	6	127
Weil-Felix for *Proteus* OX_{19} ...	Number agglutinating at a dilution of 1/125 or more—		
	Africans	212	843
	Europeans	4	68
	Asians	12	64
Agglutination against *Brucella* group	Number agglutinating at a dilution of 1/125 or more—		
	Africans	7	69
	Europeans	...	20
	Asians	3	15

The revenue collected has fallen considerably since 1949.

TABLE 32
Revenue

Revenue	1949	1950
	£	£
From Polish refugees ...	473	30
Other sources	171	203
TOTAL ...	644	233

HISTOLOGICAL EXAMINATIONS AND AUTOPSIES

Specimens were received from 305 autopsies and 691 biopsies (279 and 775 in 1949), and from these 1,806 blocks were prepared for sectioning.

The Police Mortuary at Kampala now receives all sudden deaths and deaths from accident, while 503 autopsies (425 in 1949) were performed on patients dying in Mulago Hospital. These amount to 56% of all bodies received (900) compared with 50% in 1949 and 67% in 1948. Some unusual findings were chromophobe adenoma of the pituitary, splenosis of the peritoneum and Concato's disease (polyserositis). Malignant change in a tropical ulcer, rhabdomyosarcoma of the heart in a child, leiomyosarcomatosis of the intestine and seven Kaposi's tumours (all in Africans) were also encountered.

B. Government Chemist

Water and foodstuffs have been mentioned on pages 23 and 24. Examination for medical purposes (41) comprised identification of drugs, tests on drugs for conformity with British Pharmacopeial standards and for deterioration, analysis of medicinal preparations and analysis of body tissues and fluids for suspected poisons. The poisons identified included strychnine, sulphonamides and alcohol.

One hundred and five specimens were received in respect of 39 criminal investigations. The poisons identified were potassium cyanide, arsenic, bismuth, sulphuric acid and also powdered glass, while Nubian gin ("waragi") was identified by its alcohol content. Samples of grease were analysed in a case of rifle theft. Examinations were made of counterfeit coins, forged currency notes and clothing of a burnt person to establish the presence of kerosene. Traces of copper were found on a knife in the possession of a person accused of stealing a car battery after cutting the wire connections.

Fifty-five miscellaneous samples were received for examination, including textile fabrics (12), soap and oils for soap making, road bitumen emulsions, salt, beer (both native and bottled), and chemicals for water treatment and for brewing.

C. Entomology

For the greater part of the year, a Sanitary Overseer posted to this section was able to assist in the co-ordination of anti-malarial activities

based upon surveys carried out by the Entomologist. Malarial survey work increased, visits being paid to most of the townships.

A tsetse survey was carried out on Buvuma Island, and several thousand flies collected subsequently were identified. A survey of a suggested site for a leprosy settlement in Toro showed the presence of *Glossina palpalis*, and enabled further observations to be made on *Simulium damnosum* and onchocerciasis.

A rat and flea survey carried out in connection with work on typhus around Kampala has demonstrated some interesting changes since the surveys undertaken by Hopkins in 1933-35. The ousting of the field rats by *Rattus rattus* has continued, and the latter now comprise 85% of the rats caught in huts within 10 miles of Kampala. *Xenopsylla cheopis* has almost completely replaced *X. brasiliensis* as the commonest rat flea found. The average number of *X. cheopis* found on each rat was 1·5 as against 0·1 at the previous survey.

SECTION VI.—TRAINING OF PERSONNEL

Assistant Medical Officers

Two important changes were made during 1950 to improve the training offered to medical students at the Makerere College Medical School. The organisation of clinical teaching, previously undertaken by Government clinical and pathological specialists, has now become the responsibility of full-time college staff. All the beds in Mulago Hospital will be available for teaching purposes, and Government officers will continue to assist in the work. Some Government buildings at Mulago Hospital have been transferred to Makerere College, including the pathology and anatomy buildings and laboratories. It is pleasant to record that the Professor of Medicine (Dr. A. W. Williams), the Lecturer in Pathology (Dr. J. N. P. Davies) and a Senior Laboratory Technician (Mr. T. N. Salthouse) are former members of this department who will continue to be associated with it in the course of their college work.

The second change has been the lengthening of the curriculum from six years to seven. On this account, no students completed their studies during 1950. Two students referred in 1949 passed the examination for the Diploma in Medicine (East Africa) during 1950, and one other whose entry into Government service had been deferred on account of illness was accepted at the end of the year.

During the year, four Assistant Medical Officers were undertaking post-graduate studies in the United Kingdom; one gained the Diploma in Child Health and another the Diploma in Public Health.

Medical Assistants

The course for Medical Assistants at the Masaka training school has been lengthened from two years to three now that candidates from secondary schools have replaced ex-army nursing orderlies. To bridge the consequent gap in the production of trained staff, a special course of twelve months' duration was given to selected candidates from the Government service

who had previously completed the Nursing Orderlies' course at Lira or Mulago. Sixteen started at the beginning of the year, 15 completed the course and 13 were selected for appointment as Medical Assistants. The last four male students at Mulago also passed the final examination.

Out of the first and second year students, 14 completed the first year successfully, and 13 the second. Masaka Hospital now has 341 beds and for the greater part of the year the staff included two Medical Officers, four Assistant Medical Officers, a Matron, a Sister Tutor and two Nursing Sisters.

Nurses

The Preliminary Training School accepts entrants twice a year; out of 55 entrants, 40 passed into the Nursing Training School. The wastage during the three-year course is considerable, and 32 girls failed to continue their studies. Sixteen candidates entered for the final examination, of whom 11 became certificated nurses.

Since the training of female nurses started in 1930, 606 nurses have been trained successfully, including three Asians. At the end of 1950 there were 104 nurses in Government service, 26 being also trained midwives.

Nursing Orderlies

The course for Nursing Orderlies at the Lira Training School has been extended from one year to two years. Owing to the unsuitability of the first candidates selected in March, a further batch was recruited in September; of the 43 entrants, 22 remained at the end of the year, but no accessions to Government can be expected until 1952.

Owing to staff shortage, no medical officer has been available to assist continuously in the work of the school.

Assistant Health Inspectors

Five final year students of the Mbale School of Hygiene entered for the examination for East African Sanitary Inspectors held under the auspices of the Royal Sanitary Institute, and four were successful. One external candidate also sat for the examination but was unsuccessful. The examinations for this qualification are held simultaneously in East African territories, and examiners are exchanged between them.

Three students started the second year's course, and eleven the first, but of these latter only nine remained at the end of 1950. The School was visited by representatives from Ethiopia and arrangements were made for students from that territory to take the training in Uganda.

Hygiene Orderlies

Twenty-two students completed the course extending over one year at the School of Hygiene, Mbale, and 19 satisfied the instructors in the terminal examinations. Greater experience of their performance in rural areas after qualification has modified the views held of the part they are able to take in health developments. It is apparent that training lasting only one year is insufficient to provide the practical experience needed for them to tackle the problems of rural hygiene single-handed, and better

results are obtained if they work in pairs or teams; in some cases they have worked with the Social Welfare teams. They need adequate supervision and backing to overcome the inertia and resistance commonly met with; only if there is an active public demand for his services can an isolated worker of this type make much progress.

Dispensers

Five students qualified after completing the three years' course of training at Mulago Hospital, while three failed in the final examination. Five students completed the first year's studies, and four the second.

Laboratory Assistants

Five students out of six completed the final year successfully.

SECTION VII.—HEALTH OF PRISONERS

The average number in prison fell during 1950 to 2,685, being 129 less than the peak reached in the previous year. The health of prisoners continued good, although there was a slight increase in the death-rate and the daily sick rate.

Table 33

	1947	1948	1949	1950
Daily average in prison	2,174	2,234	2,814	2,685
Number of deaths	32	32	20	27
Admissions to hospital	1,266	1,258	1,411	1,362
Daily average on sick list	31·9	28·6	34·9	40·2

The death rate is still highest in the Northern Province (4 deaths in a prison population of 276). Over a period of four years the prisons with the highest mortality have been the following:—

Table 34

	Average population	Deaths	Death-rate
Arua	71	14	48
Moroto	63	8	32
Fort Portal	25	3	30

It is gratifying to be able to report that no deaths occurred at Arua during the past year.

The causes of death are shown in the accompanying Table 35. Four of the deaths were among lunatics who were inmates of district prisons, one dying from lung abscess. All the deaths from tuberculosis during the past two years have occurred in Buganda Province, and all except one occurred among prisoners at the Central Prison.

TABLE 35

Causes of deaths in prisoners

	1947	1948	1949	1950
Tuberculosis	4	5	3	4
Syphilis and its sequelae	...	1	3	2
Typhoid fever	2	...	...	1
Dysentery	2	2	1	...
Meningococcal infection	4	3	...	...
Malaria and blackwater fever	1	2	2	1
Gonorrhea (extravasation)	...	...	...	1
Anaemia	1	...	1	1
Pneumonia	2	4	1	3
Congestive heart failure	...	...	...	1
Intestinal obstruction	2	...	...	...
Enteritis	1	1	...	1
Cirrhosis of liver	...	...	2	2
Nephritis	...	2	...	...
Central nervous vascular lesions	...	1	...	1
Non-meningococcal meningitis	...	1	1	...
Ill-defined causes	4	2	...	1
Psychoses	3	4	4	3
Other pulmonary diseases—				
Asthma	1	...	...	...
Abscess and gangrene	2	...	...	2
Perinephric abscess	...	...	...	1
Injuries—				
Suicide	1	1	1	...
Bullet wounds	...	2	1	...
Murder	...	...	...	1
Rupture of spleen	1	...	...	1
Other accidents	1	1	...	...
TOTAL	32	32	20	27

The health of the prisoners in the prison farms at Tororo and Kitalya appears to be above the average for all prisoners, to judge by the sickness and death rates.

At Luzira Central Prison an epidemic of typhoid occurred among the warders. It was noted that among 590 admissions to this prison there were 17 prisoners needing treatment for leprosy.

A reformatory school was started on an estate near Mubende, and although conditions were primitive at first the health of the inmates remained good. A prison to accommodate 150 recidivists is being built near Tororo.

AFRICAN LOCAL GOVERNMENT PRISONS

The standards in these rural prisons vary. On the whole, those built in permanent materials and maintained by the wealthier districts are satisfactory; prisons built in temporary materials tend to be in a poor state of repair, having inadequate lighting and ventilation.

A few prisons in Buganda have earned commendation, but many have been found infested with lice, bugs or ticks. The Central Jail at Mengo has again been overcrowded, largely with poll tax defaulters and prostitutes on remand.

The inadequacy of the diet has been commented upon in several districts, there being a tendency to rely too much on cassava as the staple. Since cultivation is the sole occupation in the majority of these jails, there appears to be an excellent opportunity to develop this form of work more systematically, both for the immediate good of the prisoners and for the benefit of the community when they return to their homes.

Appendix I

LEGISLATION AFFECTING THE MEDICAL AND HEALTH SERVICES

Dangerous Drugs Ordinance

Legal Notice 247 applies Part V of the Ordinance to some newly-introduced drugs.

District Council Bye-Laws

Legal Notices 183, 184, 189 and 259 govern the prevention of prostitution, the protection of springs and wells, the construction of latrines and the regulation of bride-price in Bukedi sub-district.

Factory Ordinance

Legal Notice 95 revokes the First Aid Rules.

Markets (Amendment) Ordinance (No. 9 of 1950)

The Ordinance authorises African Local Governments, Township Authorities and Municipalities to establish markets.

Public Health (Amendment) Ordinance (No. 17 of 1950)

The Ordinance provides powers to charge fees.

Legal Notice 30 applies the Public Health (Eating House) Rules, 1939, to an area around Kampala.

Legal Notices 109 and 242 allow certain relaxations to the Public Health (Building) Rules, 1939, while *Legal Notice* 238 lays down a scale of inspection fees)

Legal Notice 131 applies the Public Health (Sale of Milk and Milk Products. Rules, 1939, to Mityana Township.

Legal Notice 254 applies the Public Health (Bakehouse) Rules, 1939, to Mengo District.

Legal Notice 267 revokes the Public Health (Yellow Fever) Rules, 1942, governing entry from the Belgian Congo and the Sudan.

Legal Notice 279 applies the Public Health (Meat) Rules, 1949, to Mubende District with the exception of Rule 5.

Legal Notice 282 replaces the Public Health (Drainage and Sanitation) Rules of 1937.

Rabies Ordinance

Legal Notice 15 revokes the proclamation of Mbale District and a portion of Teso District in Legal Notice 147 of 1946.

Midwives Ordinance (No. 24 of 1950)

This replaces the existing Ordinance and makes provision for supervisory authorities and the removal from the Register of the names of midwives who have left the public service.

Sleeping Sickness Ordinance

Legal Notices 34 and 232 amend the boundaries of the Restricted Areas in East Madi and Western Gulu.

Legal Notice 88 includes Busoga waters in the Sleeping Sickness (Fishing) Rules.

Legal Notice 142 amends the boundary of the Restricted Area in South Busoga.

Town and Country Planning Ordinance, 1948

Legal Notices 127 and 157 delineate a Planning Area for Jinja and delegate the powers of the Board to the Planning Committee.

General Notice 763 sets out the provisions of the Kampala Town Planning Scheme.

Townships Ordinance, 1938

Legal Notice 26 imposes conditions on Rule 28 of the Township Rules, 1939.

Legal Notice 51 declares Lwambu as a Township.

Legal Notice 64 changes the name of Katwe Township to Kabatoro Township.

Legal Notice 155 amends the boundaries of Jinja Township.

Legal Notice 199 applies Rule 7 of the Township Rules, 1939, to Namasagali Township.

General Notices 127 and 902 appoint members to Soroti and Namirembe Townships.

Trades Disputes (Arbitration and Settlements) (Amendment) Ordinance (No. 23 of 1950)

The Ordinance amends the provision of the 1949 Ordinance relating to essential services.

Uganda Employment (Amendment) Ordinance (No. 11 of 1950)

By this Ordinance the townships of Jinja and Entebbe and the Planning Area for Kampala are exempted from the requirements to provide housing for employees.

Legal Notice 65 makes numerous minor amendments to the Employment Rules, 1946.

Legal Notice 167 restricts the application of section 30 (Housing) to employees earning not more than Shs. 60 monthly.

Legal Notice 255 modifies the specified recruiting areas.

Waterworks Ordinance

Legal Notices 260, 263 and 293 set up Water Authorities for Moroto and Kabale.

Workmen's Compensation (Amendment) Ordinance (No. 22 of 1950)

The Ordinance includes licensed practitioners within the definition of medical practitioners in section 3 of the 1949 Ordinance.

Legal Notice 94 promulgates Rules of Court.

Legal Notice 226 applies the Ordinance to employment of every kind.

Appendix II

SCIENTIFIC PUBLICATIONS

BARKER, D. (1950)—"Some unusual dental cases." *British Dental Journal*, Vol. 87, page 155.

BOASE, A. J. (1950)—"Trachoma." *British Journal of Ophthalmology*, Vol. 34, page 30.

BOASE, A. J. (1950)—"Trachoma." *East African Medical Journal*, Vol. 27, page 187.

HENNESSEY, R. S. F. (1950)—"Thoughts on the study of medicine." *East African Medical Journal*, Vol. 27, page 223.

HUTTON, P. W. (1950)—"A case of pellagrous neuropathy". *East African Medical Journal*, Vol. 27, page 325.

LADKIN, R. G. (1950)—"Health education in Buganda." *East African Medical Journal*, Vol. 27, page 467.

LADKIN, R. G., RAPER, A. B. (1950)—"Endemic dwarfism in Uganda." *East African Medical Journal*, Vol. 27, page 339.

RAPER, A. B. (1950)—"Sickle cell disease in Africa and America: a comparison". *Journal of Tropical Medicine and Hygiene*, Vol. 53, page 49.

RAPER, A. B. (1950)—"Splenosis: a sequel to rupture of the spleen."

RAPER, A. B., LADKIN, R. G. (1950)—"Endemic dwarfism in Uganda." *East African Medical Journal*, Vol. 27, page 339.

TROWELL, H. C. (1950)—"Problems raised by Kwashiorkor." *Nutrition Review*, Vol. 8, page 161.

TROWELL, H. C. (1950)—"Kwashiorkor". *Medical Annual*, 1951.

TROWELL, H. C. (1950)—"Kwashiorkor" (Article in Batten and Garrod's "Diseases of Children").

TROWELL, H. C. (1950)—"Rarity of diseases of general adaptation syndrome." *Lancet*, Vol. 2, page 454.

TROWELL, H. C. (1950)—"Splenomegaly." *East African Medical Journal*, Vol. 27, page 258.

TUCKER, W. A. L. (1950)—"A case of massive subcapsular haematoma of the spleen". *East African Medical Journal*, Vol. 27, page 164.

WELBOURNE, H. F. (1949)—"A survey of anaemia in Kampala school children." *East African Medical Journal*, Vol. 26, page 391.

Appendix III

REVENUE AND EXPENDITURE

1949 Actual	Revenue	1950 Estimated	1950 Actual
	CHARGES FOR SERVICES RENDERED—		
£		£	£
5,528	Hospital receipts, Europeans	9,000	4,965
2,707	Hospital receipts, Asians		3,272
351	Sale of drugs		351
644	Pathological examinations		233
	Ambulance charges		78
	Workmen's compensation		15
	Radiological charges		7
	Other charges		198
498	Dental fees	700	428
	Sale of surplus stores		855
	CAPITATION FEES—		
3,331	East African Railways and Harbours	3,000	3,182
	Posts and Telegraphs	1,054	1,054
	Other High Commission Departments	...	...
	Makerere College	...	339
	CONTRIBUTIONS FROM AFRICAN LOCAL GOVERNMENTS		
3,470	Buganda Government—stores and drugs	4,100	2,200
	Busoga—drugs	...	1,325
3,299	Lango—Yaws campaign	300	589
	Toro—salary of A.M.O. at Kabarole Hospital ...	375	375
£19,828	TOTAL REVENUE ... £	18,529	19,466

Revenue and Expenditure—*continued.*

1949	Expenditure	1950		
Actual		Estimated	Subvention to A.L.G's.	Actual
£		£	£	£
347,025	Personal Emoluments	375,783	9,409	333,024
129,120	Stores, drugs and equipment	122,926	...	122,000
44,740	Hospitals and laboratories maintenance ...	38,539	950	44,192
12,903	Control of epidemic and endemic disease	7,425	630	7,745
30,036	Transport of staff and patients	32,700	5,500	31,340
152	Public health propaganda	250	...	242
...	Post Office services	2,700	...	2,684
...	Rations for probationer nurses	1,764	...	1,764
...	Courses of instruction for medical staff ...	1,600	...	797
...	Other new expenditure	550	...	488
16,437	Other services—transport of stores, water, electricity, publications and incidentals...	13,524	233	15,951
	CONTRIBUTIONS—			
	To Missions—			
7,175	For maintenance of midwifery centres	7,875	...	6,675
5,483	For relief of leprosy	5,650	...	5,650
500	For Kabarole hospital	500	...	500
50	To others	97	...	70
	SPECIAL EXPENDITURE—			
3,299	Lango yaws campaign	600	...	592
6,000	Building grant to leprosy settlements ...	1,000	...	1,000
1,812	Equipment for hospitals and dispensaries	5,000	...	5,000
...	Radiological equipment for Mulago Hospital	12,000	...	250
196	Dental equipment	...	...	...
1,837	Motor vehicles	1,900	...	1,934
2,500	C.M.S. Maternity Training School ...	...	...	...
£609,265	TOTAL EXPENDITURE £	632,383	16,722	581,898

NOTE.—Expenditure for 1950 is provisional. Personal emoluments includes payments formerly included under other charges.

Appendix IV

STAFF

Honours

Miss Eseri Nankya, Nurse, awarded the Certificate of Honour.

Mr. Petero Mbwetukume, Medical Assistant, awarded the Certificate of Honour.

Mr. Kezironi G. Kisitu, Medical Assistant, awarded the Certificate of Honour.

Mr. Yokana K. Tamale, Clerk, awarded the Certificate of Honour.

Dr. A. R. Darlow, Medical Officer, awarded the Territorial Efficiency Decoration.

Post Graduate Degrees and Diplomas awarded

Dr. A. R. Darlow	D.C.H. (London) ...	March, 1950.
Dr. A. R. Duff	D.T.M.&H. (Edinburgh) ...	March, 1950.
Dr. R. S. F. Hennessey ...	F.R.C.P.I.	October, 1950.
Dr. I. S. Kadama	D.P.H. (London)	July, 1950.
Dr. J. L. Lanceley... ...	M.D. (Liverpool)	December, 1949.
Dr. E. M. K. Muwazi ...	D.C.H. (London)	October, 1950.
Dr. A. B. Raper	D.T.M.&H. (Liverpool) ...	May, 1950.

Appointments and Promotions

Alderdyce, Dr. A. A.	Medical Superintendent	8-12-50
Alexander, Miss C.J.	Nursing Sister	6-10-50
Baird, Dr. R. B.	Acting Senior Pathologist	1- 1-50 to 30- 6-50
Barnetson, Dr. W.	Senior Medical Officer	18- 3-50
Barrett, Dr. R. E.	Acting Deputy Director	6- 4-50 to 15-11-50
Berezowski, Mr. J.	Laboratory Technician	1- 3-50
Blaikie, Dr. K. W.	Medical Officer	16-11-50
Caldwell, Dr. J. M.	Senior Medical Officer (Labour)	24-11-50
Carter, Mr. M. R.	Pharmacist	26- 5-50
Cregg, Miss K. M. C.	Nursing Sister	2- 3-50
	Acting Sister Tutor	April, 1950.
Dick, Mr. J.	Health Inspector	23- 1-50
Elmes, Dr. B. G.	Temporary Pathologist	24- 1-50
Farquhar, Mr. D.	Dental Surgeon	November, 1950
Flagg, Miss R.	Nursing Sister	29- 9-50
Hall, Miss B. E.	Nursing Sister	2- 2-50
Harris, Miss J.	Physiotherapist	20- 5-50
Hines, Miss M. A.	Nursing Sister	20- 6-50
Hoyle, Mr. J.	Acting Hospital Superintendent	20- 4-50 to 11- 6-50
Hudd, Dr. M. H. R.	Specialist Anaesthetist	1-12-49
Hunter, Dr. J. K.	Assistant Director	24-11-50
Jamieson, Miss I. H.	Matron, Grade II	29-12-50
Jupp, Miss O.	Sister-in-Charge, Mental Hospital	29- 3-50
Kafuko, Dr. G. W.	Assistant Medical Officer	1- 1-50
Kapoor, Dr. Prem Dutt	Asian Medical Officer	3- 7-50
Kelshiker, Dr. Y. B.	Sub-assistant Surgeon	7- 1-50
Kemp, Dr. P. D.	Medical Officer	1-12-50
Key, Mr. F. T.	Health Inspector	20- 5-50
Lennox, Mr. H.	Superintendent, Mental Hospital	16- 1-50
Lubega, Dr. J. K.	Assistant Medical Officer	1- 1-50
Mansfield, Mr. E. R.	Dental Mechanic	23- 9-50
Monger, Mr. N. D.	Acting Assistant Instructor in Hygiene	30- 3-50
Murray, Dr. J. P.	Medical Officer	23- 5-50
Nelson, Dr. G. S.	Medical Officer	21- 1-50
Novotny, Dr. M.	Temporary Medical Officer (licensed)	16- 2-50
Philip, Miss A. C.	Nursing Sister	20- 6-50
Postlethwaite, Mr. G. H.	Acting Chief Health Inspector	1- 1-50 to 3- 1-50
	Instructor of Hygiene	5 -6-50
Powell-Cotton, Dr. (Miss) D.	Temporary Medical Officer	9- 5-50
Prendergast, Miss J. F.	Nursing Sister	29- 9-50
Reynolds, Miss A. J.	Nursing Sister	4- 4-50
Rwakihembo, Dr. U. K.	Assistant Medical Officer	January, 1950.
Snell, Dr. D. G.	Senior Medical Officer	22- 9-49
Tucker, Dr. W. A. L.	Acting Specialist (Surgeon)	4- 5-50 to 15-10-50
Vaizey, Dr. J. M.	Medical Officer	6-12-50
Walpole, Miss S. R.	Acting Matron, Grade I	7-9-1950
Watt, Miss M. M.	Nursing Sister	July, 1950
Webb, Mr. F. J.	Acting Hospital Superintendent	12- 6-50 to 19- 9-50
Wilmot, Mr. R. G.	Temporary Assistant Hospital Superintendent	3- 6-50
Wilson Dr. W. A.	Acting Assistant Director	6- 4-50 to 15-11-50
		21-11-50 to 30-11-50

Departures

Achhar Singh, Dr.	Sub-assistant Surgeon, *retired*	10- 4-50
Alexander, Dr. R. H.	Medical Officer, *resigned*	5- 5-50
Bateman, Mr. G. W. B.	Dental Surgeon, *transferred*	9- 6-50
Bali, Dr. L. M.	Sub-assistant Surgeon, *retired*	30- 6-50
Barrett, Dr. R. E.	Assistant Director, *transferred*	23-11-50
Baziwane, Dr. Y.	Assistant Medical Officer, *retired*	31-12-50
Bradshaw, Mrs. I. G.	Welfare Worker, *resigned*	1- 9-50
Brown, Dr. A. Forbes	Medical Officer, *retired*	24-10-50
Brown, Miss R.	Nursing Sister, *resigned*	31-10-50
Burns, Miss M. L.	Stenographer-Secretary, *retired*	1-10-50

Departures—*continued.*

Dick, Dr. G. W. A.	...	Pathologist, *seconded*	1- 4-50
Davies, Dr. J. N. P.	...	Pathologist, *resigned*	15-10-50
Gibbon, Dr. G. M.	...	Medical Officer, *retired* ...	2-11-50
Gillett, Mr. J. D. ...	...	Entomologist, *seconded*	1- 4-50
Grant, Mr. C. W.	...	Pharmacist, *resigned*	24-10-50
Holden, Mr. A. D.	...	Optometrist, *seconded*	13- 3-50
Hopwood, Miss A. M.		Nursing Sister, *resigned* ...	1- 6-50
Howie, Miss M. T.	...	Nursing Sister, *resigned* ...	28- 9-50
Lock, Miss M. L. ...	...	Matron, Grade I, *retired* ...	9- 9-50
Laroya, Dr. L. R. ...	...	Sub-assistant Surgeon, *retired* ...	9-10-50
Lumu, Dr. E. B. S.	...	Assistant Medical Officer, *resigned*	24-12-50
Makoro, Dr. G. K.	...	Assistant Medical Officer, *resigned*	30- 6-50
Matovu, Dr. B. S.	...	Assistant Medical Officer, *resigned*	30- 6-50
Meurling, Miss B.	...	Temporary Laboratory Technician *resigned*	1- 3-50
Mohamed, Dr. Nur	...	Sub-assistant Surgeon, *retired* ...	31-10-50
Nield, Mrs. T. ...	...	Temporary Nursing Sister, *resigned*	30- 9-50
Paul, Mrs. R. ...	...	Temporary Nursing Sister *resigned*	1-10-50
Salthouse, Mr. T. V. N.	...	Laboratory Technician, *resigned* ...	31-12-50
Twohig, Dr. (Mrs.) N. M.	...	Temporary Medical Officer, *resigned*	15- 3-50
Whittaker, Mr. W. A. H.	...	Laboratory Technician, *seconded*...	1 -4-50
Williams, Dr. A. W.	...	Medical Superintendent, *retired* ...	17-10-50

Appendix V

SANCTIONED ESTABLISHMENT 1950

Administrative

1 Director of Medical Services
1 Deputy Director
1 Assistant Director
1 Medical Superintendent, Mulago Hospital
7 Senior Medical Officers
1 Administrative Assistant
2 Accountants
3 Stenographers

LOCAL CIVIL SERVICE

2 Chief Clerks

General

2 Specialists (Physicians)
2 Specialists (Surgeons)
1 Specialist (Ophthalmologist)
1 Specialist (Gynaecologist)
1 Specialist (Anaesthetist)
1 Specialist (Leprologist) (*vacancy*)
42 Medical Officers (12 *vacancies*)
1 Hospital Superintendent
6 Assistant Hospital Superintendents (1 *vacancy*)
1 Welfare Worker
1 Domestic Assistant

2 Medical Officers
1 Senior Sub-assistant Surgeon
8 Sub-assistant Surgeons
62 Assistant Medical Officers (6 *vacancies*)
14 Clerks
63 Clerks
2 Cooks
1 Relief Cook
75 Clerical Assistants and Clinic Writers
5 Artisans

Mental Hospital

1 Specialist (Alienist)
1 Superintendent
2 Male nurses (1 *vacancy*)
1 Sister-in-charge
1 Female Nurse

33 Attendants
19 Male attendants
14 Female attendants
78 Male Mental Orderlies
44 Female Mental Orderlies

Pharmaceutical

1 Chief Pharmacist
6 Pharmacists (2 *vacancies*)

LOCAL CIVIL SERVICE

1 Assistant Storekeeper
40 Dispensers

Hygiene

1 Chief Health Inspector
1 Instructor of Hygiene
21 Senior Health Inspectors and Health Inspectors (10 *vacancies*)
4 Sanitary Overseers (2 *vacancies*)

97 Assistant Health Inspectors (11 *vacancies*)
113 Hygiene Orderlies
61 Health Orderlies

Nursing

1 Chief Matron
2 Matrons, Grade I
5 Matrons, Grade II
50 Nursing Sisters (8 *vacancies*)
2 Physiotherapists

15 Asian Nurses
27 Nurse-Midwives
106 Nurses
138 Midwives
269 Medical Assistants
803 Nursing Orderlies
211 Wardmaids

Laboratory and Entomological

1 Senior Pathologist
3 Pathologists
1 Government Chemist
3 Senior Entomologists and Entomologists (2 *vacancies*)
4 Laboratory Technicians (1 *vacancy*)
1 Assistant Bacteriologist

1 Laboratory Technician
52 Laboratory Assistants
3 Entomological Orderlies
31 Laboratory Orderlies
7 Entomological Observers

Radiological

1 Specialist (Radiologist)
4 Radiographers (2 *vacancies*)

Dental

4 Dental Surgeons (1 *vacancy*)
2 Dental Mechanics.

3 Dental Orderlies

Appendix VI

RETURN OF DISEASES AND DEATHS AT HOSPITALS, 1950

	Disease	Admissions			Deaths	*Out-Patients
		Males	Females	Total		
1.	(*a*) Typhoid fever	199	137	336	60	113
	(*b*) Paratyphoid fever	5	3	8	...	...
2.	Typhus fever	85	58	143	...	12
3.	Relapsing fever	219	82	301	12	193
4.	Undulant fever	3	...	3	1	5
5.	Smallpox	...	...	...	...	...
6.	Measles	431	417	848	9	1,162
7.	Scarlet fever	...	...	...	...	2
8.	Whooping Cough	446	486	932	31	2,158
9.	Diphtheria	2	2	4	...	2
10.	Influenza—					
	(*a*) with respiratory complications	267	194	461	5	12,334
	(*b*) without	272	173	445	...	4,919
11.	Cholera	...	...	...	...	...
12.	Dysentery—					
	(*a*) Amoebic	469	291	760	6	1,383
	(*b*) Bacillary	390	176	566	10	1,080
	(*c*) Unclassified	101	44	145	6	1,407
13.	Plague	...	...	...	...	...
14.	Acute poliomyelitis	12	4	16	...	13
15.	Encephalitis lethargica	4	...	4	2	2
16.	Cerebrospinal fever	63	38	101	23	47
17.	Rabies	...	...	...	...	...
18.	Tetanus	29	19	48	17	15
19.	Tuberculosis of the respiratory system	275	87	362	109	271
20.	Tuberculosis, other forms ...	65	22	87	20	43
21.	Leprosy	73	10	83	2	441
22.	Venereal diseases—					
	(*a*) Syphilis	1,484	851	2,335	53	39,921
	(*b*) Gonorrhoea	4,300	2,493	6,793	59	27,503
	(*c*) other forms	617	270	887	4	7,114
23.	Yellow fever	...	...	...	...	...
24.	Malaria—					
	(*a*) Benign tertian	21	3	24	...	487
	(*b*) Subtertian	3,049	2,143	5,192	181	19,963
	(*c*) Quartan	31	24	55	6	1,356
	(*d*) unclassified	3,044	2,109	5,153	115	79,770
25.	Blackwater fever...	8	4	12	3	7
26.	Kala-azar	...	...	...	...	...
27.	Trypanosomiasis	32	8	40	2	9
28.	Yaws	428	249	677	1	23,884
29.	Other protozoal disease	45	26	71	...	2,242
30.	Ankylostomiasis	1,075	880	1,955	29	8,417
31.	Schistosomiasis	180	104	284	3	560
32.	Other helminthic disease	673	377	1,050	6	10,516
33.	Other infectious or parasitic disease	431	159	590	20	3,726
34.	Cancer and other tumours—					
	(*a*) malignant	113	58	171	41	97
	(*b*) non-malignant	123	272	395	13	417
	(*c*) undetermined	17	25	42	2	67
35.	Rheumatic conditions	343	239	582	6	30,540
36.	Diabetes	27	16	43	4	40
37.	Scurvy	...	...	...	...	3
38.	Beri-beri	...	...	...	...	2
39.	Pellagra	11	7	18	2	36
40.	Other general diseases—					
	(*a*) nutritional	419	404	823	63	2,451
	(*b*) endocrine glands	57	51	108	4	373
41.	Diseases of the blood and blood-forming organs	497	420	917	65	4,458

NOTE—*These figures include in-patients for the first five months of the year.

APPENDIX VI—*continued.*

Disease	Admissions			Deaths	*Out-Patients
	Males	Females	Total		
42. Acute and chronic poisoning ...	81	40	121	8	78
43. Cerebral haemorrhage	16	2	18	10	10
44. Other diseases of the nervous system	291	155	446	61	5,486
45. Trachoma	433	475	908	...	4,450
46. Other diseases of the eye	738	540	1,278	...	24,879
47. Diseases of the ear and mastoid process	420	264	684	15	13,492
48 Diseases of the circulatory system—					
(*a*) heart disease	190	91	281	65	365
(*b*) other circulatory disease ...	55	37	92	6	246
49. Bronchitis	673	465	1,138	9	7,018
50. Pneumonia—					
(*a*) broncho-pneumonia ...	737	574	1,311	147	860
(*b*) lobar pneumonia	2,021	834	2,855	178	1,154
(*c*) otherwise defined	268	145	413	46	722
51. Other diseases of the respiratory system	1,168	770	1,938	43	85,876
52. Diarrhoea and enteritis—					
(*a*) under 2 years of age... ...	213	193	406	52	6,847
(*b*) over 2 years of age	317	193	510	14	9,362
53. Appendicitis	66	48	114	2	40
54. Hernia and intestinal obstruction ...	1,281	337	1,618	137	2,410
55. Cirrhosis of the liver	84	36	120	24	57
56. Other diseases of the liver and biliary passages	105	59	164	27	351
57. Other diseases of the digestive system	1,226	1,000	2,226	71	66,051
58. Nephritis—					
(*a*) acute	29	17	46	6	20
(*b*) chronic	61	39	100	26	82
59. Other non-venereal diseases of the genito-urinary system	685	2,035	2,720	13	5,721
60. Diseases of pregnancy, childbirth and the puerperal state—					
(*a*) abortion	...	938	938	25	388
(*b*) ectopic gestation	...	6	6	2	4
(*c*) toxaemia	...	10	10	3	4
(*d*) other conditions	...	823	823	118	322
61. Diseases of the skin, cellular tissue, bones and organs of locomotion ...	6,584	3,005	9,589	161	102,339
62. Congenital malformations and diseases of early infancy—					
(*a*) congenital debility	17	13	30	19	34
(*b*) premature birth	75	85	160	72	47
(*c*) injury at birth	39	56	95	100	8
63. Senility	7	3	10	...	36
64. External causes—					
(*a*) suicide	1	1	2	2	2
(*b*) other forms of violence ...	4,794	1,836	6,630	210	80,059
65. Ill-defined causes	1,028	462	1,490	79	14,972
66. Malingering	62	25	87	...	291
67. Ante-natal supervision	...	2,149	2,149	3	34,388
68. Normal living babies	3,435	3,707	7,142	43	2,998
69. Post-natal supervision	21	429	450	5	8,695
70. Normal labour	...	6,305	6,305	9	2,469
71. (*a*) Examinations	335	284	619	36	35,009
(*b*) Admissions					89,912
TOTAL	47,991	41,921	89,912	2,842	887,115

NOTE.—*These figures include in-patients for the first five months of the year.