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TANGANYIKA

MINISTRY OF HEALTH AND LABOUR

Annual Report
of the
Health Division
1960



VOLUME I

Prepared by the Chief Medical Officer

1961

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1. HISTORICAL REVIEW OF THE MEDICAL SERVICES IN TANGANYIKA

1.1. This is the last Annual Report which will be published before Tanganyika achieves Independence in 1961. It is therefore considered appropriate to include in it a brief summary of the history of the medical services in this country since the service was first established by the Germans towards the end of the last century.

1.2. The Medical Department was established on 1st April, 1891, two years after German troops, with their attendant military medical officers, had landed at the coastal towns to re-establish trading posts. Before 1891 the German and African members of the military forces were treated at field clinics or if seriously ill were shipped over to hospitals in Zanzibar, but in 1891, when the seat of government became Dar es Salaam, the Berlin Evangelical Mission situated on the north shore of the harbour entrance provided in-patient accommodation for German patients, and others were accommodated in barracks close to the present railway station. The department at that time consisted of five medical officers and fourteen German medical orderlies, who would today be graded as Medical Assistants. Three, sometimes four, nursing sisters were supplied by a voluntary society in Germany.

1.3. In 1893 a wealthy merchant of Bagamoyo, Sewa Haji, was persuaded by the Chief Medical Officer of the time to donate money for the construction of a hospital in the capital to accommodate Indians, Arabs and Africans. Four years later the Government Hospital, built for Grade I patients from a grant provided by the German government, was opened on Ocean Road, and at much the same time small and often temporary hospitals at other stations were opened mainly for the use of government officials, but also for those members of the public who desired admission; at first these were few in number. The hospital at Tanga was completed a few years later.

1.4. The purpose of the medical service in the early days was the treatment of government officials of all grades, together with the enforcement of such preventive measures, medical and veterinary, as were considered essential for the economic development of the country. Thus vigorous campaigns were launched on Koch's advice against malaria in Dar es Salaam and Tanga by means of the mass treatment of the urban population with quinine, but these campaigns failed largely because the necessary co-operation of the people could not be obtained. Vaccination against smallpox was carried out on large numbers of the population using lymph prepared even on small stations by individual medical officers, but this proved, and still proves, to be an ever-recurring measure expensive in time if not in materials.

1.5. The menace of plague, which had made its appearance prior to the arrival of the Germans in the endemic focus in Central Province and Masailand, where it smoulders today, was of particular concern to the early medical administration and outbreaks were treated with vigorous ratting and quarantine campaigns. An early focus of plague in Kisiba, north of Bukoba, had burnt out by 1905, while isolated episodes in Dar es Salaam, Lindi and Bagamoyo, traced to visitors arriving from Zanzibar, were quickly brought under control by the staff of the Medical Laboratory. More extensive outbreaks in Lake Province from Shirati south to Mwanza, outbreaks which have continued into recent years, were traced to sources in Kenya. From its principal focus around Singida in Central Province the disease was carried to Mbulu, Kilimanjaro and the South Pare Mountains, a particularly severe epidemic taking place as recently as 1951 in the last named area although the mortality was greatly reduced by the use of streptomycin. Plague was also carried by the warriors of Chief Mkwawa returning to Iringa from a campaign near Mpwapwa, on the fringe of the Central Province focus, and sporadic outbreaks flared up in the Southern Highlands from Iringa to Njombe in the years between 1886 and 1912. Chief Mkwawa introduced what were probably the first public health measures to Tanganyika by isolating in the bush those afflicted with plague, and burning down their huts; unfortunately arrangements for the removal of the patients were sometimes tardy and the high mortality rate may have been attributable in part to causes other than the disease.

1.6. Another great public health problem tackled in the early days of the department, and still requiring constant attention today, was sleeping sickness. In 1902 the disease first crossed the border into this country near Shirati, thereafter spreading rapidly around Lake Victoria and the Lake Tanganyika and, by 1911, reaching the Ruvuma River by way of

Rhodesia and Nyasaland. With the guidance of Koch a campaign was organized to contain the disease and by the time the First World War broke out nine medical officers and sixteen German medical orderlies were engaged solely on this work: the importance attributed to it may be appreciated when it is realized that there were in all only 63 physicians practising in the whole country, nine or ten in missions and private enterprises and the remainder in the Medical Department.

1.7. By that time the demand by the general population for medical attention was growing. It was, of course, strongest in the neighbourhood of hospitals, both mission and government, to which out-patient polyclinics had been attached. The patients came in principally with malaria and yaws, and various surgical conditions such as hernia and hydrocele; but some diseases that have become common such as tuberculosis were not a problem until shortly before the start of the First World War. Tuberculosis was considered by the Medical Department in those days to have been introduced by immigrants from the Far East and to have spread rapidly after 1910 among the highly susceptible African population, particularly on Kilimanjaro. Leprosy was common, but cases were segregated in camps which were established in the vicinity of missions. Bilharzia caused very little concern, the most common helminth being the hookworm which necessitated the imposition of sanitary regulations in Usambara and Uzaramo, with what little effect may be seen by the high incidence of the condition in these areas to this day.

1.8. Following the hiatus caused by the First World War, re-establishment of the medical service was slow because of political insecurity prevailing until 1923, when the Mandate was assigned to Great Britain. Indeed, at one time there were only 10 medical officers, including the Director and Deputy, but with the assurance of stable government a great expansion soon took place. In 1925 no less than 19 medical officers were recruited, but despite this increase in the higher professional grades the Director of Medical and Sanitary Services realized that Tanganyika would never be able to afford to employ fully-qualified practitioners in numbers sufficient to provide medical care for the whole population. He therefore laid stress on the training of African Dispensers (Medical Assistants) who were to staff the larger dispensaries by themselves, and assist in hospitals with the medical, surgical and laboratory work; of African District Sanitary Inspectors, who would carry out rural public health work not least being the gradual education of the public in matters of sanitation and hygiene; and Tribal Dressers, who were trained to give simple medications and dress injuries. The emphasis placed on enlisting the understanding and active co-operation of the public culminated in the formation of a Health Education unit in 1956. The Medical Department was gradually changing its policy of being concerned primarily with the health of the government official to being a curative and public health service for the benefit of the general population of Tanganyika. That the growth in demand by the public for such a service in the decade following the First World War was so rapid was largely attributable to an energetic campaign against one disease, yaws. This campaign, made feasible economically by the introduction of bismuth salts, served to convince the people not only of the value of treatment but (possibly unfortunately) of the particular efficacy of injections, for by 1929 more than half a million people—a ninth of the population—had been relieved of florid yaws in this manner.

1.9. Special investigations into the incidence and control of sleeping sickness, in co-operation with the Game Department and resulting in the formation of the various tsetse and trypanosomiasis units, and of malaria and tuberculosis were organized before the financial depression and then the Second World War brought a temporary halt to development. The tuberculosis research scheme centred on Kilimanjaro resulted in the establishment of the Kibongoto Hospital and in recent years additional hospitals and clinics for the treatment of this increasingly widespread disease. The Malaria Research units created in 1932 with Colonial Development funds not only made a scientific study of malaria and its vectors among urban and rural communities in Tanganyika, but also drew up practical plans for the drainage of Dar es Salaam, plans that were implemented through large grants made from Colonial Development funds. These malaria units developed in due course into the present Malaria Service which is engaged upon mosquito control work together with investigations concerning the action of anti-malaria drugs, including medicated salt, in close co-operation with the World Health Organization.

1.10. The responsibilities of the Health Division of the Ministry of Health and Labour have grown considerably since the end of the Second World War. It not only ensures the good health of government officials but seeks within the available resources to improve that of the whole population of Tanganyika by the provision of medical facilities of both curative

and preventive nature. It not only undertakes this work directly, but also supports other organizations undertaking similar work, namely the voluntary agencies and local authorities. In particular, great importance is attached to the training of medical personnel, both for appointment to the government medical service and to that of the local authorities.

1.11. In recent years medical development has taken place at a greater rate than at any time in the past, and is exemplified by the opening of a number of new hospitals including the Princess Margaret Hospital and Medical Training Centre in Dar es Salaam; by the creation of specialist posts such as those in the fields of anaesthesia, radiology and child health; by the completion of surveys in connection with such diverse matters as nutrition, drainage and tuberculosis; and by the increasing output from Makerere College of qualified medical practitioners whose homes are in this country.

1.12. This is a very brief synopsis of the development of medical services in Tanganyika. A detailed history is in the course of preparation by Dr. D. F. Clyde, Specialist Malariologist, and will be published shortly.

2. GENERAL REVIEW

2.1. This report has been compiled at a time when detailed statistical information is not yet available. The collation and analysis of that information takes some time and the essential figures relating to the medical services will be published separately as Volume II of the Annual Report. The figures that are quoted in this part of the report are as accurate as is possible in the circumstances, but, as usual, they are, of course, incomplete and subject to confirmation or correction. It is anticipated that they will differ only in minor degree from those published in the second volume.

2.2. As was the case in 1959 there has been another significant change in the place of the Medical and Health Services within its Ministry. With effect from 3rd September the Ministry of Health became the Ministry of Health and Labour, and the Medical and Health Services became a Division of that Ministry.

2.3. Throughout the Territory the administrative structure of the medical services remained unchanged, with the exception of the establishment of a Provincial Office at Bukoba serving the newly created West Lake Province, and, with the retirement of the Principal Medical Officer in charge of the old Lake Province, his replacement by an officer of Senior Medical Officer rank.

2.4. As stated in last year's report, in addition to the services provided directly by this Ministry further important services were provided by local authorities and voluntary agencies. The Ministry's direct responsibility was in respect of its own hospital services and general public health measures. The local authorities were responsible for rural medical services, mainly based upon dispensaries, and local public health measures. The voluntary agencies were mainly concerned with the provision of hospital facilities, but in addition augmented the dispensary services of the local authorities. The general supervision of the medical activities of the local authorities and of the voluntary agencies continued to be exercised by District and Provincial Medical Officers. In the case of Town Councils and Township Authorities, with one exception the Medical Officer of Health was an officer on the staff of the Ministry.

2.5. The growing demand for medical facilities continued throughout the year, and again the small expansion of services it was possible to achieve fell short of the demand. This growing demand is well illustrated in the case of out-patient facilities provided in Dar es Salaam. The out-patient dispensaries of the capital coped with an increase during the year of 36 per cent in the case of new attendances, and 24 per cent in respect of total attendances. It is becoming increasingly obvious that the comparatively new out-patient units at Mnazi Mmoja, Ilala and Magomeni, specially designed for large numbers of patients, are already fully extended. In the case of Mnazi Mmoja, the unit is already over-extended. The difficulty of treating these large numbers of out-patients has been further increased by staffing difficulties, especially in respect of medical officers and medical assistants. An increase in the number of in-patients is not so dramatic but it is believed that this is entirely due to their obvious limitation by the number of hospital beds available.

2.6. Once again the Christian Churches continued to make a most valuable contribution to the medical services of the country. Almost everywhere, as will be read later in the report, their medical services were expanded and the work done greatly increased. Among the major developments may be mentioned the new leprosarium established by the Augustana

Lutheran Mission at Iambi in the Central Province; the excellent new hospital built by the Capuchin Mission at Ifakara in Mahenge District and formally opened by His Excellency the Governor in October; the continued development of a new Danish Lutheran Mission hospital at Lugala in Mahenge District; the new Catholic hospitals at Bukumbi in Mwanza District, at Sengerema in Geita District and at Kibara on the Ukerewe District mainland; the nursing training schools attached to the Mennonite hospital at Shirati in North Mara District; the new Southern Baptist Tuberculosis hospital in Mbeya, which started to admit patients in January, and the completion of the Medical Missionaries of Mary hospital at Kabanga near Kasulu.

2.7. The major event of the year was the transfer of patients from the old Sewa Haji Hospital to the Princess Margaret Hospital in April. This was made possible by the completion of the new theatre and X-ray block. The improved facilities provided in the Princess Margaret Hospital were very much appreciated by the general public and there is a greater readiness to be admitted to hospital, resulting in further pressure on existing beds. With the removal of patients from the Sewa Haji Hospital to the wards of the Princess Margaret Hospital it was possible to evacuate the patients in the old Infectious Diseases Hospital to the Sewa Haji Hospital. This move was an interim measure making it possible to relinquish the old Infectious Diseases Hospital so that planned development of the Upanga area of Dar es Salaam can continue. The accommodation of cases of infectious diseases in the Sewa Haji Hospital is a temporary one pending the completion of the third ward block of the Princess Margaret Hospital, the building of which was in an advanced stage at the end of the year.

2.8. Among the capital works completed during the year in addition to the theatre and X-ray block of the Princess Margaret Hospital were a new ward, operating theatre and ancillary buildings at Tarime, a kitchen-laundry and ancillary buildings at Mbeya, the Rodoussakis Tuberculosis Ward at Tanga, a kitchen-laundry and ancillary buildings at Iringa, ancillary buildings and a new main drainage system at Mirembe, small extensions to Isanga, and a fine new X-ray block at Arusha, the cost of the latter being generously donated by an Arusha resident.

2.9. By the end of the year considerable progress had been made in the building of the new Tukuyu hospital, the new hospital at Kasulu, a new ward block at Iringa, the third ward block at the Princess Margaret Hospital and an additional ward at Mirembe.

2.10. Once again an increase in the number of dispensaries provided by the native authorities in the rural areas was not accompanied by a corresponding increase in the output of trained personnel, in spite of the doubled output of rural medical aids from the Mwanza Training Centre. Efforts were made to improve the standard of medical treatment at dispensaries staffed with tribal dressers by the organization of local training courses for such staff in Provincial and District hospitals.

2.11. The steady increase in the number of cases of smallpox notified continued during the year. Fortunately the disease has tended to revert to a greater incidence of a mild form, the mortality being about half the 1959 figure. The main focus of the disease during the year was in Eastern Province, particularly in the areas surrounding the capital. Some difficulty was experienced in tracing and vaccinating contacts of reported cases, and towards the end of the year a full-scale vaccination campaign was mounted in the area. Sporadic small-scale outbreaks were reported from all other provinces but the mortality was generally low.

2.12. Poliomyelitis once again did not occur in epidemic form, the tendency being for the appearance of sporadic and apparently unconnected cases. The total number reported showed some increase over the number reported in 1959, largely due to the increased incidence of the disease in the Western Province. Vaccination continued to be made available on payment to all persons desiring it.

2.13. The incidence of sleeping sickness remained very much the same as during the previous year. A reduction in the number of cases in the Southern and Northern Provinces was offset by a sharp outbreak in Ngara District in the West Lake Province. No spread to areas hitherto uninfected was reported.

2.14. The voluntary agencies continued to bear a considerable part of the burden of providing and supervising leprosaria and their satellite outpatient treatment centres, although the Government leprosaria at Makete and Chazi continued to play an important role.

The new Lutheran Mission leprosarium at Iambi in the Central Province was formally dedicated on the 25th September in the presence of the Minister for Health and Labour, and representatives of the American Lutheran Mission Inc., who had played a considerable part in making the building of this leprosarium possible.

2.15. The steady expansion of the tuberculosis treatment schemes continued. In the Northern Province the scheme for the control of this disease in Mbulu District was brought into full operation.

The Southern Province scheme has expanded, particularly in the eastern part of the Province where the scheme is centred on Peramiho Mission hospital, the Government hospital at Songea and the Liuli Mission hospital on the lake shore.

The scheme based at Tanga continued to expand, an expansion made possible by the increased number of beds which had been made available in the new Rodoussakis Ward.

The number of beds provided in the Central Province was increased from 84 to 90.

The Southern Baptist Mission hospital at Mbeya was opened by the Minister for Health in January, 1960, and by the end of the year was working at its full capacity of 110 beds.

2.16. A sharp outbreak of cerebro-spinal meningitis occurred in the Masasi District of the Southern Province. Up to the end of the year 550 cases with 29 deaths had been reported, the peak of the epidemic having been during the week ended 24th September when 56 cases were reported.

2.17. Rabies continued to be endemic throughout the Southern Highlands Province during the whole of the year. Protective vaccinations and sera were available at all Government hospitals. Three deaths from rabies occurred in unprotected persons in this Province during the year.

There was a sharp outbreak in the Kigoma District and the adjoining areas of Kibondo and Kasulu Districts, infection having entered Tanganyika from an outbreak in Ruanda Urundi. During this outbreak 150 cases of "dog bites" were observed and treated and two deaths were reported.

Another outbreak occurred in the Ngara District of the West Lake Province, this again being an extension from Ruanda Urundi; 97 people were reported to have been bitten by suspected rabid animals and four deaths occurred.

2.18. No new legislative measures were enacted during the year.

2.19. Estimates for the financial year 1959/60 totalled £1,943,632 and the actual expenditure was £1,828,617. Of the under-expenditure of £125,000 approximately 60 per cent was caused by vacancies on the authorized establishment. The estimates for the financial year 1960/61 were decreased to £1,931,386, allowance having been made for the difficult recruitment position, and, apart from a shortage of staff, the funds provided should enable services to be maintained at a reasonable level.

3. STAFF

3.1. Once again there was a general shortage of staff, but unlike the previous year when there were crippling financial difficulties, the major causes for the shortage were not financial during 1960.

3.2. The strength of medical officers remained dangerously low as the result of a failure in recruitment.

3.3. Similarly, the strength of nursing sisters remained equally dangerously low throughout the year and in this case there continued to be the usual high wastage rate. The position would have been desperate had it not been possible to engage a considerable number of nursing sisters on temporary terms. Nevertheless it was necessary to reduce the nursing establishments of several hospitals.

3.4. Similar staffing difficulties arose in the case of the "assistant" group, particularly so in the case of medical assistants. Losses in these cadres were considerable owing to the appointment of several of them to posts in other Ministries, posts which in general appeared to offer more favourable opportunities for promotion to the higher ranks of the civil service.

3.5. The necessity for the staffing of newly established health centres also proved to be a serious drain on the staff of the Ministry's own medical services, especially in respect of medical assistants, assistant health inspectors and health nurses.

3.6. Surprisingly enough the establishment of dental surgeons remained at full strength throughout the year. Unfortunately this happy state of affairs will not necessarily continue as several officers in this small cadre were appointed to the service or are due for leave after a long tour at about the same time, and this, together with anticipated resignations and departure on completion of contract, may well result in staffing difficulties during 1961.

3.7. During the year dental assistants were established at five additional hospitals and they are now stationed at the majority of the provincial and the principal district hospitals of the country. Somewhat surprisingly the public demand on the services of this new cadre of officer has been less than was anticipated earlier. This is largely due to the tendency for members of the public to require the extraction of an offending tooth and their refusal, or at least disinclination, to attend for further treatment. Furthermore, it appears that the African, unlike his brother in European countries, frequently presents with a single dental lesion and often requires no further treatment other than a single extraction. Another cause of the small demand for dental services amongst the general public may well have been insufficient publicity. At the time of the establishment of the service it was considered that any degree of publicity would result in overwhelming demand. This has been by no means the case and steps are now being taken to remedy the position.

4. COMMUNICABLE DISEASES

4.1. DIRECT INFECTIONS

4.1.1. *Smallpox*

Reported Incidence 1956-1960

		1956	1957	1958	1959	1960
Cases	... ..	605	856	1,176	1,442	1,584
Deaths	... ..	21	38	94	158	83
Case Mortality per cent	... ..	3.47	4.4	7.9	10.93	5.24

As will be seen from the table above, the steady increase in the number of cases of smallpox notified, which has been a feature of this report for some years, continued. It would appear, however, that the form of the disease has tended to revert to a wider incidence of a milder form, the case mortality having fallen to almost half the 1959 figure.

The main focus of the disease during 1960 was in Eastern Province, particularly in the Mzizima and Kisarawe Districts adjacent to Dar es Salaam. In this province 928 cases with 63 deaths occurred, as compared with 220 cases with 16 deaths in 1959. The very close connection between these districts and the Municipality of Dar es Salaam, with the constant daily movement of population, made control in this area a matter of some difficulty. Repeated attempts to trace and vaccinate contacts of reported cases met with limited success, and towards the end of the year a full-scale vaccination campaign was mounted in the area in question, to be carried out early in 1961.

The other province where the incidence was relatively large was Tanga where 108 cases with 3 deaths were reported. It is probable that this reported incidence represents no more than a proportion of the true effect of the disease, as most cases occurred in the area of the Usambaras where control measures were difficult owing to concealment of cases and a reluctance to accept vaccination.

Sporadic and small-scale epidemics were reported from all other provinces, but the death rate was generally low.

It is interesting to note that the comparative immunity of the Lake Province, mentioned in the 1959 Report, following its very high incidence in 1958, continued, only 12 cases with no deaths being reported during the year.

The epidemic in the Kasulu and Kigoma Districts which remained a minor source of trouble throughout 1959 continued to smoulder in 1960 with an average of 10 cases per month being reported. One encouraging feature of the disease in this area, however, is that vaccination is now accepted comparatively readily as distinct from the opposition to this measure a year or two ago.

4.1.2. *Poliomyelitis*

Reported Incidence 1956-1960

		1956	1957	1958	1959	1960
Cases	... ..	466	386	187	144	210
Deaths	... ..	34	11	6	7	9
Case Mortality per cent	... ..	7.29	2.8	3.2	4.94	4.28

The possible increase in the incidence of this disease forecast in the 1959 Report eventuated, but not to such an extent as to create a serious problem. Nowhere has the disease appeared in epidemic form, the general tendency being for the appearance of sporadic unconnected cases. The area most severely affected was the Western Province where 58 cases with two deaths occurred, more than half of these cases, with one death, being reported from the Nzega District. The only other provinces where there was any considerable incidence were Eastern and Central with 26 and 25 cases respectively. Vaccination against the disease continued to be made available on repayment to all persons desiring it.

4.1.3. *Leprosy*

The main burden of the provision and supervision of leprosaria continued to be borne by voluntary agencies, although the government leprosaria at Makete and Chazi are playing an increasingly important role.

The new Lutheran Mission Leprosarium at Iambi in the Central Province was completed and formally dedicated on 25th September, 1960 in the presence of the Minister for Health and Labour and representatives of the American Lutheran Mission Inc., which had played a considerable part in making this new leprosarium possible.

The second major leprosarium in the Central Province, that at Makutapora, administered by the Church Missionary Society, has not yet been able to make its scheduled move to its new site in the vicinity of the Hombolo Dam, largely owing to recently voiced objections by the general public to the siting of a leprosarium in the neighbourhood of this important source of water and fish—objections which will need intensive health education to overcome.

A provincial leprosy treatment scheme, based on these two leprosaria, with out-patient treatment available at all hospitals, rural health centres and rural dispensaries, is being planned, and it is hoped to implement it in the very near future.

Similar measures are already in force in the Eastern Province based on the government leprosarium at Chazi, which has continued to be improved. The most important focus of the disease in this province is in the mountainous areas of Morogoro, Uluguru and Ukutu. A detailed survey in this area carried out by the Leprosy Medical Officer based at Chazi revealed a case rate of over 2 per cent, while 1.5 per cent of the population were actually under treatment. The new cases registered during the period July, 1959 to June, 1960 comprise five per thousand of the population. Case finding of this order places a considerable burden on the out-patient treatment scheme.

In the Southern Highlands Province, the satellite leprosy dispensaries combined with the government leprosy settlement at Makete continued to provide effective treatment in the Tukuyu District. The number of patients under treatment in this area is now 1,864, a slight increase over 1959. 194 patients were admitted to the leprosarium and 56 were discharged.

The reorganization of leprosy work in the Tanga Province mentioned in the 1959 Report has been successfully effected, and the majority of patients now receive out-patient treatment at local dispensaries or district hospitals, after initial examination by a medical officer. In-patient treatment, where necessary, is given either at the segregation village at Mtindiro, a government institution which is administered as an annex of the Muheza Hospital—but which is less than satisfactory for this purpose—or for patients from the Lushoto area, at a mission leprosarium at Hekalungu.

The out-patient treatment scheme in the Western Province based on the mission leprosarium at Sikonge has encountered some difficulty owing to the reluctance of patients from the more distant parts of this very large province to travel to Sikonge for in-patient treatment where this is necessary. A desire has been expressed for the establishment of a further leprosarium at Heri for treatment of patients from the Buha and Kigoma areas.

In the Southern Province, leprosy was, as in the past, a major problem. It was found necessary to close the leprosarium at Mkunya and to concentrate patients requiring in-patient treatment at mission leprosaria in Lulindi and Ndanda. The two British Leprosy Relief Association field officers employed in this area continued to play an important part in supervising out-patient leprosy treatment in the districts of Masasi, Newala, Mtwara and Tunduru.

4.1.4. *Tuberculosis*

The steady expansion of the service for dealing with this problem, which assumes an ever-increasing importance, continued. No new institutions specifically for the treatment of tuberculosis were opened, but there was general expansion and provision of increased accommodation in existing institutions.

In the Northern Province, the scheme for the control of this disease in Mbulu District, which was mentioned in the 1959 Report, was brought into full operation. There are now 29 treatment centres in this area based on the government hospital at Mbulu which uses the government bedded dispensary at Oldeani as an annex for patients who need a longer hospital stay, and the mission hospitals at Ndareda and Haydom. The number of cases diagnosed during the year in this district increased from just under 300 in 1959 to 463 in 1960. This rise is probably almost entirely due to an increased awareness of the incidence of the disease and of the possibility of treatment.

In the area supervised by the Medical Officer, Kibongoto, which includes the Pare area of the Tanga Province, there are now over 2,000 patients on out-patient treatment. Less than 1 per cent of these patients are lost sight of and the vast majority are induced to continue their treatment and subsequent surveillance without difficulty.

In the Kilimanjaro area, where treatment based on the sanatorium at Kibongoto has been actively carried out for very many years, there are at last signs of a decrease in incidence. It is particularly noteworthy that the majority of the cases reported in this area are now children with early disease or elderly men and women with degenerative breakdown of previously healed lesions.

In the Southern Province the Tuberculosis Scheme continued to make satisfactory progress. There are now available in this area a total of 325 tuberculosis beds, 239 in the eastern part of the province, where treatment is centred on Nachingwea and Ndanda, and 86 in the western end of the province made up of a new 60-bedded tuberculosis ward at Peramiho Mission Hospital, 20 beds in the government hospital at Songea and 6 beds in Liuli Mission Hospital on the lake shore. In the eastern part of the province 594 new cases were notified during the year, a decrease of 100 as compared with 1959, and 735 cases were discharged from hospital to continue treatment as out-patients. Of the latter 91 per cent were sputum negative on discharge. There were at the end of 1960, 1,111 patients receiving treatment in the eastern part of this province compared with 1,081 at the end of 1959.

The full-scale scheme in the western end of the province based on Peramiho and Songea is of too recent origin to be able to supply any figures for out-patient treatment, as the majority of patients under treatment in that area are still in their preliminary hospital period. Financial and staffing difficulties are at present the main handicaps to the expansion of the Southern Province scheme to include the Tunduru and Kilwa Districts and give full provincial cover.

The Tuberculosis Officer, whose posting to the Tanga Province was mentioned in the 1959 Report, continued to expand the scope of his duties during 1960. In particular, arrangements are in hand for the BCG vaccination of schoolchildren in this province, while the opening of the new Rodoussakis Ward for infectious diseases has considerably increased the number of beds available for treatment of tuberculosis, particularly as it has been found possible, as was forecast in last year's report, to retain the use of the old infectious disease hospital for this purpose.

In the Central Province it was found possible, by further re-arrangement of the wards at Kongwa, to increase accommodation from 84 to 90 beds. This hospital is, however, reaching the end of its economic life and plans are now in hand for transferring tuberculosis treatment facilities from Kongwa to the provincial hospital at Dodoma.

From Lake, West Lake and Western Provinces there is still, regrettably, little to report, although a number of hospitals, both government and voluntary agency, provide treatment for tuberculosis. There is, however, as yet no organized follow-up or any out-patient treatment scheme, and until such a scheme can be put in hand it will be impossible to make any serious impact on the incidence of the disease in these areas.

The Southern Baptist Mission Hospital at Mbeya was opened in January, 1960 and is now working at its full capacity of 110 patients. Some measures have been taken to secure the follow-up of patients and to arrange for an associated out-patient treatment scheme but further progress is necessary before measures in this area can be considered satisfactory.

In the Eastern Province, treatment was available at all district hospitals, and, in addition, there was a major treatment centre at Dar es Salaam.

Throughout the year the Medical Research Council trials in chemo-therapy continued in the infectious diseases hospital in Dar es Salaam and at tuberculosis units at Kibongoto, Kongwa and Nachingwea.

4.1.5. *Dysenteries and Enteric Fevers*

Sporadic cases of enteric fever were reported from all provinces during the year. The disease was a serious problem however only in Tanga Province, but even here it is pleasing to report that the incidence was halved from 282 cases in 1959 to 140 cases in 1960. In addition, a small localized epidemic occurred in a girls' school in Bukoba District where 12 cases were seen: improvements to the water supply and general sanitary arrangements at the school quickly brought it to an end.

Bacillary dysentery continued to be a problem in most areas, except in the Western Province where it was reported as not significant. The disease appears to be particularly important in young children, being responsible for a number of deaths in this age group.

4.1.6. *Trepanematosis*

Yaws is now of importance only in the Kigoma, Kasulu and Kibondo Districts of the Western Province, and even here it is definitely on the decline. Elsewhere in the territory it is now most exceptional to see a florid case of this disease and the diagnosis of yaws made in rural dispensaries is frequently open to doubt, being often based on vague symptoms of pain in bones or joints.

Syphilis continues to be widespread, particularly in urban areas and occasional cases of tertiary syphilis, attributed to inadequate treatment of early symptoms with anti-biotics, are seen from time to time.

In the Bukoba District, where an organized venereal disease campaign has been in operation since 1953, attendance seems to have stabilized at a relatively low level. Attendances in 1960 of patients diagnosed as suffering from syphilis were 419 compared with 4,611 in 1953.

4.1.7. *Cerebro-spinal Meningitis*

There was a small but insignificant decrease in the incidence of this infection, 1,222 cases with 147 deaths being reported as compared with 1,242 cases with 152 deaths in 1959. The case mortality at 12 per cent remains virtually unaltered.

The most important outbreak occurred in the Masasi District of the Southern Province. Up to the end of the year 550 cases with 29 deaths were reported and the peak of the epidemic occurred in the week ending 24th September, when 56 cases were seen. As a result of this outbreak it was necessary to recommend that the planned ceremony of the enthronement of the new Bishop of Masasi should not be held in the area owing to the danger of dissemination of infections in the packed congregations which would certainly have attended on that occasion.

Elsewhere in the Territory epidemic conditions did not occur, cases being mainly sporadic, although one small outbreak with six cases, including one death, occurred in the prison at Bukoba.

4.1.8. *Rabies*

Rabies continued to be endemic throughout the Southern Highlands Province for the whole of 1960. Protective vaccinations and sera were available at all government hospitals, and protective inoculation of persons was advised where there was the slightest possibility of infection. Three deaths from rabies occurred in unprotected persons in this province during the year.

There was a sharp outbreak in the Kibondo District and adjoining areas of Kigoma/Kasulu Districts, infection having entered Tanganyika from an outbreak in Ruanda Urundi. Two deaths occurred, one in an adult female and the other in a female child, and during the course of the epidemic 150 cases of suspect dog-bites were observed and treated. The epidemic in Ruanda Urundi was also responsible for a small outbreak in the Ngara District of West Lake Province, where 97 people were reported to have been bitten by suspected rabid animals and 4 deaths occurred.

4.1.9. *Influenza*

No significant outbreak of this disease occurred during the year.

4.1.10. *Infectious Hepatitis*

Sporadic cases continued to be seen and this disease assumed almost epidemic proportions in the Morogoro area, in particular amongst the European population; it was common in young children and in several families more than one member was infected.

4.2. VECTOR-BORNE INFECTIONS

4.2.1. *Plague*

The country's freedom from plague, commented on in the 1959 Report, continued through 1960. Some alarm was occasioned by a very considerable increase in the rat population in Kisarawe and Southern Morogoro Districts: these rats caused considerable damage to crops and food stores and gave rise to rumours of plague. However, no epidemic disease seems to have occurred amongst this large rat population which was eventually dealt with by the organization of drives, which resulted in the killing of many thousands.

There was a similar increase in rat population in the area of the Mbarali Irrigation Scheme at Rujewa in Southern Highlands Province, but here again there was no evidence of any abnormal mortality amongst these animals.

An increase in rat mortality in Kahama in Western Province was investigated but proved to be unconnected with plague.

4.2.2. *Relapsing Fever*

There was no significant change from previous years in the incidence of this infection. As in the past it was endemic in Central and Lake Provinces, tending however to be closely localized in foci of the disease. For example, the government bedded dispensary at Manyoni treated an average of nine to twelve cases a month, but the similar dispensary at Itigi, only 25 miles away, treated on an average only one case a month. Approximately 625 cases were treated at hospitals and government bedded dispensaries in Central Province during the year and, in addition, large numbers were treated by voluntary agencies and at native authority rural health centres and dispensaries.

In Lake Province, as in the past, the highest incidence of the disease is reported from Ngudu District, while in Geita District relapsing fever was particularly prevalent in Nyang'wala and Geita itself. In both the affected areas, the local population is now well aware of the causation of the disease; although the gammexane dusting or spraying as a preventive measure is popular, little success has as yet been achieved in efforts to improve housing construction.

4.2.3. *Sleeping Sickness*

Reported Incidence 1956-1960

					1956	1957	1958	1959	1960
Cases	...	...	...	...	646	411	574	836	825

The position over the country, both as regards incidence and distribution, was very much the same during 1960 as it was in 1959. A reduction in the number of cases occurring in the Southern and Northern Provinces was offset by a sharp outbreak in the Ngara District of the West Lake Province. There was no spread anywhere to areas hitherto totally unaffected.

A fuller account of the disease and of the activities of the Sleeping Sickness Service is given in Paragraph 16 of this Report. Furthermore, the Annual Report of the Sleeping Sickness Specialist is published separately and copies of this Report are available on request.

4.2.4. Malaria

As usual all provinces report malaria as a continuing major cause of morbidity and, especially in the younger age groups, of mortality. The infection is widespread throughout the territory, except at the higher altitudes, and control measures are effective to any extent only in the urban areas.

The activities of the Malaria Service are described in Paragraph 14 of this Report.

4.2.5. Other Vector-borne Infections

There was considerable interest during the year in O'Nyong-Nyong fever, which had originally been reported from Uganda. It appears that the vector responsible for the transmission of this virus disease is *Anopheles funestus*. The disease appeared in the Lake Province towards the end of April and rose to a peak towards the end of May, finally disappearing in July. This infection appears to have been almost universal, so much so that no real attempt could be made at notification or treatment of cases. It is estimated that as many as 70 per cent to 80 per cent of the population may have suffered during the epidemic. Fortunately, although the disease is unpleasant, it is not killing and no fatalities were reported. A very similar epidemic occurred in the Missenyia area of Bukoba District on the boundary of Uganda during August, September and October.

An outbreak of a rather similar disease was reported early in the year from the Liuli area of Songea District in the Southern Province. The disease had a sudden onset with moderately high fever and severe pains in the limbs and back, together with headache. The pains were essentially muscular, although joints and bones were sometimes involved. The outbreak was explosive and short-lasting, some 1,200 people being affected. Owing to difficulties of communication no laboratory investigation of acute cases proved possible, but convalescent sera sent to the Virus Institute, Entebbe, was reported as indicating that the causative organism was a virus closely related to those responsible for Chukungunya and O'Nyong-Nyong fevers.

4.3. HELMINTHIC INFESTATIONS

4.3.1. Schistosomiasis

This infestation is prevalent in many areas scattered throughout the territory and, unfortunately, with increasing development of irrigation projects and the increased use of fishponds as a source of protein, it must be anticipated that the incidence may rise still higher and that the disease may spread to areas not yet affected. The Bilharzia Research Unit of the East African Institute for Medical Research at Mwanza continued to function, the Entomologist seconded to it from this Ministry playing an important part.

Up to the present the Unit has concerned itself mainly with studies of the vector and an investigation of possible means of snail control, but it is proposed to expand its function under the direction of Professor George Macdonald to endeavour to make a scientific assessment of the exact morbidity both short-term and long-term which can properly be attributed to this disease. In the meantime, efforts are being made to prevent extension of the disease into new irrigation projects by ensuring that these projects are planned and installed with the danger of introduction of schistosomiasis in mind. As far as possible an endeavour is made to provide conditions unfavourable for the multiplication of vector snails.

4.3.2. Ankylostomiasis

This infestation is widespread in the territory and is undoubtedly the cause of a considerable amount of morbidity. Severe degrees of anaemia are extremely common in Tanganyika, and in many such cases a high degree of infestation with hookworm is discovered. Although ankylostomiasis may not be the only cause of anaemia in many of these cases, it is undoubtedly an exacerbating factor and is a contributory cause of the mortality which occurs. Control is almost impossible and can only come as a result of general raising of sanitary standards and health education. Treatment, although carried out, achieves little as re-infestation inevitably occurs almost immediately.

5. MATERNAL AND CHILD WELFARE

The demand for maternal and child welfare services continues to grow. In particular, there is a steadily increasing demand for additional maternity beds in almost all hospitals, a demand which, it must be anticipated, will never be fully satisfied. It is in some respects unfortunate that the opinion is now widely held that a hospital is the normal place in which to have a baby. As a result there is already opposition in some areas to the suggestion that the long-term needs of the people could better be served by the introduction, expansion or improvement of domiciliary midwifery services.

Ante-natal clinics were generally extremely well attended, although there is still, as must be anticipated, considerable irregularity of attendance amongst many of the patients. The same remark applies to infant welfare clinics, although here there is considerable improvement in the position and a number of mothers now bring their children regularly, perhaps being encouraged to do so by the issues of UNICEF dried milk which are made in these clinics.

In Dar es Salaam the Muhimbili Maternity Hospital ceased to be a separate unit and became a maternity ward of the general hospital. Pressure on its facilities continued to be intense. The number of beds available was increased to 50, but even so they were quite inadequate to meet the demand. The average number of deliveries in hospital rose to 245 per month, as compared with 209 per month in 1959. Out-patient clinic activities were reorganized, child welfare clinics being separated from the maternal ante-natal and post-natal services.

Four thousand, seven hundred and seventy-one persons attended the various routine ante-natal clinics making a total of 26,405 attendances. The figures for attendances at the child welfare clinics are similar, 3,410 children attending for the first time and there being a total attendance of 26,059.

Central Province is prominent in the field of maternity and child welfare, a number of very active rural health centres with satellite dispensaries having been set up. The health nurses at these rural health centres, supervised by the health visitors, are doing very good work. In Dodoma District, in particular, almost 2,000 persons attended maternity clinics at Dodoma hospital and there were 1,200 first attendances at the child welfare clinics held at that hospital, an increase of 25 per cent and 20 per cent respectively on 1959 figures. Similarly at Handali and Mundemu Rural Health Centres in this district, there were 3,305 first attendances at ante-natal clinics and 2,635 attendances at infant welfare clinics, an increase of 50 per cent and 30 per cent respectively, compared with 1959.

Maternal and child welfare is an aspect of medical services to which many of the voluntary agency hospitals attach particular importance and very many of these have flourishing clinics. As already mentioned, the supply of dried milk received from the United Nations Children Fund which was distributed through approved maternity and child welfare clinics, whether government, native authority or voluntary agency, plays an important part in the work of these clinics. The probable cessation of this supply forecast in the 1959 Report fortunately did not eventuate and indeed it has now been possible for UNICEF to agree to double the rate of supply which may well result in a further increase in the popularity and effectiveness of this service.

The main limiting factor in the development of maternity and child welfare services is, of course, shortage of staff; there are insufficient numbers of health nurses to staff even the existing rural health centres and unfortunately, although the training programme for this cadre of staff is going reasonably well, the wastage rate is so high, principally due to marriage, that the total number in employment appears to be almost static. It is appreciated that the health nurse lost to the service by marriage is not lost to the community as a whole, and it is hoped that the numbers of these girls who have received this training will, by example in their homes, gradually lead to a raising of standards of child care and hygiene in many parts of the country.

A further service provided by UNICEF as part of its assistance with maternity and child welfare work during the year was to make available supplies of triple antigen. This antigen, conferring immunity to whooping cough, diphtheria and tetanus, has proved popular both with health workers and with the population. Diphtheria is not a major problem in Tanganyika; indeed, cases of the disease are seldom seen, but both whooping cough and tetanus are extremely important and complications of the former are undoubtedly a major cause of chronic morbidity and mortality amongst young children.

6. SCHOOL HEALTH

It has still not yet been found possible to provide a formal school health service anywhere outside Dar es Salaam. Within the Municipality such a service is provided by the Health Department of the Municipal Council. School nurses make regular examination of school children, referring any defects or abnormalities discovered to Government clinics and hospitals. Some 17,000 schoolchildren are covered by this service. In addition to medical examinations, the service also provides smallpox vaccination on entry and before leaving and B.C.G. vaccination of all tuberculin negative entrants. Elsewhere in the territory schools are visited and schoolchildren examined by departmental staff at all levels as frequently as possible.

Diets in boarding schools have been the subject of considerable study by the Medical Officer (Nutrition) and he has been able to make recommendations to the Ministry of Education for their improvement in a number of cases. He is also, in collaboration with the Ministry of Education, arranging for the keeping of records to show the growth pattern of children in a number of schools, and it is hoped that in due course these records will provide a quantity of useful information of a type which is not at present available in Tanganyika.

The health of schoolchildren was generally good throughout the territory and no serious epidemics occurred. One very small outbreak of typhoid fever in a girls' school in Bukoba has already been mentioned. In a number of schools minor signs of malnutrition were discovered. One disturbing factor in this respect is the increasing popularity of a refined maize flour called "Sembe", the increasing use of which will, it is feared, be liable to be followed by an increase in the number of children displaying signs of Vitamin B deficiency.

7. HEALTH EDUCATION

The Health Education Section is now well established, and its relations with the general public are improving. The stage has been reached where there is an active demand for the services of the section being voiced from a number of areas. The main function of the section continues to be the production of visual aids and health education material, and the instruction of persons, both officers of the Ministry of Health and Labour, and officers of other Ministries and local authorities who will in the course of their duties have opportunity to carry out health education of the public. In addition, the section gives guidance on the carrying out of specific health education projects and it has played a large part in the initiating of such a project in the Bonga Sub-Chiefdom of Mbulu District in the Northern Province.

In this district pulmonary tuberculosis is a major medical problem and the scheme was planned to give to the public basic information on health, disease, hygiene and sanitation in general, and on tuberculosis in particular. The project was based on the Rural Health Centre at Babati and the persons mainly responsible for its implementation were the medical assistant, assistant health inspector and health nurse stationed at that unit, together with the local representatives of the Agriculture, Veterinary and Social Development divisions, while in the difficult initial stages of the scheme they were reinforced by the assistant health inspector who is attached for full-time duties to the Health Education Section. This project has been an unqualified success. A large number of private houses of a type considerably superior to the traditional house in the area have been constructed, a number of latrines have been dug and a large community centre has been built, all by communal effort. Between 200 and 250 people reported to the Rural Health Centre requesting chest examination and no less than 41 of these were found to be suffering from active pulmonary tuberculosis. As it had been estimated that there were probably in the area concerned some 60 to 70 cases of tuberculosis and as 20 of these were already under treatment, it will be seen that this represents a major step towards complete control of the disease in the area.

Elsewhere in the country there have not been such dramatic projects, but all members of the staff, particularly health inspectors, assistant health inspectors, health visitors and health nurses have devoted a large part of their time to health education duties, combining and integrating these with their other functions. In rural health centres great emphasis is placed on health education, and health visitors and health nurses in their maternal and child welfare clinics in particular, are constantly placing before the people the importance of better nutrition and better living conditions.

8. NUTRITION AND FOOD SUPPLIES

8.1. Agriculturally, 1960 was, generally speaking, a good year and no food shortages of any significance were reported from any part of the country. In spite of this, however, reports of malnutrition, particularly in schoolchildren and in children brought into hospital were common, qualified in a number of cases by the statement that this malnutrition was not attributable to any shortage of food in the area concerned but due to lack of knowledge or superstition which prevented the best use being made of available food. It is obvious that health education must play a major part in a campaign against malnutrition in this country and that results can only be expected slowly.

8.2. The Medical Officer (Nutrition) has had a busy year establishing his section of the department. In particular, the reconstituted Central Advisory Committee on Nutrition met twice during the year, while an Executive Sub-Committee formed during its first meeting held a number of meetings to consider ways and means of arranging education programmes and of obtaining financial aid for various enterprises and schemes. The Medical Officer (Nutrition), in addition to his duties as Executive Secretary to the Central Advisory Committee on Nutrition, has played a part in the formal instruction of Training Grade Health Inspectors, Assistant Health Inspectors and Medical Assistants and has co-operated with other departments in providing short talks on nutrition to their staff. He has also been engaged in preparing a manual on Nutrition which sets out a mass of information in three sections. The first section consists of notes for informal talks to lay audiences, the second section provides the text for formal instruction in nutrition of para-medical staff, while the third section, intended principally for medical staff, describes in detail the clinical picture of the various nutritional deficiencies occurring in this country.

8.3. There has been very close co-operation between the Medical Officer (Nutrition) and the Departments of Agriculture, Veterinary Services, Social Development, Education and Labour, while, in addition, advice has been given to the Police on suitable diets for various categories of the force. Clinical surveys have been carried out in some areas both of pre-schoolchildren and of schoolchildren, while regular recording of heights and weights has been introduced in a number of schools, as already mentioned. Pilot diet pattern surveys have been made in Southern, Eastern and Lake Provinces.

8.4. One unfortunate trend in nutrition which has become more obvious this year and to which importance must be attached, is the increasing popularity of sophisticated foods. It is tending to become a sign of social status to use high extraction "Sembe" maize flour instead of whole meal "Dona" and to use machine-milled rice instead of hand-hulled rice. Unfortunately, in each of these instances the commercial product is much inferior as an article of diet and particularly as a source of vitamins to the less refined product formerly used, and vitamin deficiencies, particularly of the B group, are becoming increasingly common and can be expected to become still more common, particularly amongst the relatively prosperous members of the population living in towns. It must indeed be stated that commercial interests in many instances are diametrically opposed to the best interests of the people. On the assumption that this increasing sophistication of foods represents a trend which cannot be halted, ways and means of dealing with it are being sought, particularly by making compulsory the addition of appropriate vitamin supplements to the foods concerned.

9. ENVIRONMENTAL HYGIENE

9.1. URBAN HOUSING AND SANITATION

9.1.1. Progress both in new buildings and in the improvement of existing buildings is reported from most areas, although it must be noted with regret that there is a tendency on the part of a few Authorities to discourage officers of the Authorities from too rigid insistence on the application of by-laws and Township Rules. Building is also extending into areas outside townships proper and in the Lake Province, in particular, an unplanned settlement is growing up at every cotton buying post and ginnery, a development which may give rise to considerable trouble in the future unless some measure of control can be implemented very soon.

Improvement in water supplies in townships continues. In the Southern Province, in particular at Lindi, the main from the water supply to the town has been re-routed and relaid, this having been made necessary by a violent storm which destroyed much of the former main and resulted in the town being without piped water for some weeks.

9.1.2. Improvements in water supplies create their own problems as the water brought to any area has to be taken away again, and unfortunately in many townships soil conditions are such that soakage, the normal method of disposal, is extremely unsatisfactory. Most towns of any size need to provide and keep in regular use at least one cesspit emptier and any breakdown in inadequacy of this machine results in the rapid creation of a considerable nuisance. The high water table is a constant source of worry in a number of townships and in Bukoba it was found necessary to abandon a plan to build on no less than 31 new high density plots as the water table was so high as to make building and proper drainage quite impossible. A further 20 plots were built on but considerable difficulty was encountered in providing proper septic tank and seepage drainage.

This problem becomes even serious in the larger towns where multi-storied and flat-type development is becoming popular. With development of this sort, even under favourable conditions, the old method of drainage by seepage into the unbuilt-on part of the plot becomes quite impracticable, and the necessity for the introduction of proper sewage disposal schemes becomes increasingly urgent.

9.1.3. Refuse collection and disposal services functioned with varying efficiency in all urban areas. Generally speaking the most suitable method of refuse disposal in this country is found to be controlled tipping, but any neglect of the normal precautions necessary for the carrying out of this method of disposal rapidly leads to trouble as has been exemplified in more than one township during the past year.

9.2. RURAL SANITATION

9.2.1. Progress in the improvement of the sanitary conditions in rural areas must of necessity be slow, but nonetheless some progress is being made. Concentration is still on the provision of latrines and on refuse disposal. It may be stating the obvious but it is frequently found that the mere provision of pit latrines or persuading people to dig them for themselves is not enough. There still remains the question of persuading the people to make regular use of them, and particularly ensuring that they are used by all members of the family. Frequently, particularly when there is a special latrine drive, flimsy and inadequate latrines are constructed which are used only occasionally and collapse after the first heavy rains. Special campaigns have their place, but there is little doubt that it is only the steady day-to-day work of the conscientious health orderly which can lead to long-term success.

9.2.2. Refuse disposal in rural areas is mostly a matter of persuading the individual house-holder to bury or burn his refuse, but in some minor settlements and trading centres arrangements for the collection and disposal of refuse are in force.

9.3. FOOD HYGIENE

9.3.1. In the townships, in particular, a great deal of effort continues to be devoted to improvement in the standards of hygiene in the storage, handling and sale of foodstuffs. Providing supervision is unrelenting, good results are being attained, but there is a tendency for a rapid relapse to the previous unhygienic conditions should supervision be relaxed. There is, however, a gradual change in the climate of public opinion on this matter and complaints against dirty conditions in food shops and restaurants are now from time to time voiced, indicating that a demand for better conditions is being stimulated.

9.3.2. It is satisfactory to note in this regard that at last it has been possible to stop the practice of butchers in the Minor Settlements of Unga and Ngare Narok, which form the squatter fringe of Arusha Township, from slaughtering their beasts in the middle of the housing area; all slaughtering is now carried out at the Town Council abattoir.

9.3.3. It is also pleasing to note that in a number of areas, the Health Department is now asked to inspect doubtful consignments of food before they are put on sale so that voluntary surrender of such food which is found to be unfit for human consumption is becoming the rule.

10. INDUSTRIAL HEALTH

10.1. HEALTH OF LABOUR

10.1.1. Generally speaking, the health of labour on the large estates and in the various industrial organizations in the country has been satisfactory. Some disquiet, however, must be expressed regarding the settlements reached between the Plantation Workers' Union and the Sisal Industry towards the end of the year, whereby employees no longer received a free issue of rations as part of their wages but instead receive a cash wage only. A certain increase in malnutrition, particularly amongst the families of such employees, has already been reported, and, although the paternalism of regular issues of rations may now be out of date, it has in the past undoubtedly contributed towards the better health of workers.

10.1.2. It would not be out of place here to mention an incident where seven workers in one concern were found to be suffering from florid scurvy. These workers, when the circumstances were investigated, were found to be all single men who spent their time gambling and drinking, never bothering to collect their rations, and eating irregularly.

10.2.3. Generally speaking, medical facilities in employed labour were found satisfactory, particularly in the larger concerns. In Tanga Province, in particular, there are more than 90 industrial medical units providing a variety of medical facilities for estate employees varying from highly organized estate hospitals with resident doctors to small dispensaries staffed by a dresser and visited by private medical practitioners at regular intervals.

10.1.4. Schistosomiasis continued to be a major problem at the Arusha Chini Sugar Estate in the Northern Province. This estate has recently built and opened a new 63-bed hospital and has a resident medical officer, and is taking every measure possible to bring this disease under control.

10.1.5. The Labour Exchange Transit Centre at Tukuyu at which labourers seeking employment in Northern Rhodesia or South Africa can be medically examined continued to operate throughout the year; one medical officer was employed full-time carrying out the necessary medical examinations and during the year he examined 11,849 persons for employment.

10.1.6. Attention continued to be paid to the standards of housing provided for labour on estates, and in connection with various industrial concerns. Generally speaking, the position is satisfactory and improvement, where required, was usually carried out without the necessity of resorting to legal sanctions.

10.2. INDUSTRIAL DISEASES

10.2.1. Industrial diseases as such are relatively uncommon, and, apart from injuries, the health picture in labour dispensaries tended to be very similar to that of the general population. An alarm regarding anthrax was reported from Lake Province where an outbreak occurred amongst cattle awaiting slaughter. These cattle had been handled by the workers but no human cases occurred. Anthrax is, of course, a relatively common disease in the country, but is much more a disease of herdsmen and cattle-owners than an industrial disease. The majority of cases reported arose from the all too common practice of eating the meat from an animal which dies of disease.

11. INTERNATIONAL AND PORT HEALTH

11.1. No cases of infectious disease notifiable under the provisions of the International Sanitary Regulations occurred in any of the territory's ports or airports or were notified in vessels using these ports during 1960.

11.2. Smallpox continued to be present throughout the year in Dar es Salaam and indeed this area was one of the main endemic foci of this disease.

11.3. The four major seaports of the territory dealing with foreign-going shipping are Dar es Salaam, Tanga, Lindi and Mtwara. A full-time port health organization is provided in Dar es Salaam, the staff of which dealt not only with shipping using the port but were also responsible for the general sanitary supervision of the port and the international airport at Ukonga, some eight miles outside Dar es Salaam. At the other ports no full-time organization is maintained, but facilities are provided for the proper supervision of the health of the ports and of the shipping using them.

11.4. The increase in the number of vessels using the harbour at Dar es Salaam continued, 52 more ocean-going vessels than in 1959 entering the harbour, while passengers disembarking increased by almost 1,400 and passengers in transit by almost 1,200. The overseas dhow traffic has now almost ceased, and only one dhow arrived from outside East Africa, but there was an increase in the number of dhow arrivals from local ports.

11.5. The table below summarizes the shipping position in Dar es Salaam Harbour for five years, 1956 to 1960:—

	1956	1957	1958	1959	1960
Number of ocean-going ships arrived ...	826	794	1,011	1,042	1,094
Number of passengers disembarked ...	23,384c	22,581	25,300	22,509	23,901
Number of schooners arrived ...	739	794	830	862	638
Number of passengers disembarked ...	7,812	7,664	4,779	4,019	2,430
Number of dhows arrived ...	514	346	462	372	446
Number of passengers disembarked ...	354	324	365	270	246

11.6. Four cases of minor infectious diseases were landed in Dar es Salaam from shipping and were isolated in private houses. Twenty cases of infectious disease were reported in transit.

11.7. Rat control in the Dar es Salaam port area, as in the past, was carried out by the staff of the East African Railways and Harbours, supplemented by trapping carried out on board dhows and steamers by staff of the Health Department. A total of 1,973 rats were destroyed and of these 517 were submitted for laboratory examination. Four De-ratting Exemption Certificates were issued and six extensions to existing certificates were granted. One de-ratting certificate was issued during the year to a vessel de-ratted by a private firm using sodium monofluoroacetate.

11.8. As a result of the routine examination of imported foodstuffs, 36 certificates of unsoundness and destruction were issued covering 2,776 tins, packets or bags of miscellaneous items of food. All unsound food was voluntarily surrendered and was disposed of by dumping at sea under Customs Authority supervision.

11.9. There has been a considerable increase in the importation of second-hand clothing into Dar es Salaam. There were 113 consignments during 1960 compared with 51 in 1959. Eighty of these consignments comprising 996 bales and 10 cases, came from the U.S.A.

11.10. For the purpose of maintaining mosquito control at Ukonga Airport, 14,053 feet of new drainage was constructed by employees of the Ministry.

11.11. The duties of the Port Health Officer at Tanga are undertaken by the Medical Officer of Health employed by Tanga Town Council, on behalf of Government. Vessels are only boarded and cleared by the staff of the Medical Officer of Health if Tanga is their first port of call in East African waters. Otherwise clearance is granted by the pilot who collects the Maritime Declaration of Health from the ship's master and transmits it to the Medical Officer of Health.

11.12. At Lindi and Mtwara there was no noticeable increase in the amount of shipping using the port. All vessels were cleared by Health Office staff.

11.13. In addition to seaports, Tanganyika has some international ports on the Great Lakes. Of these, Kigoma was particularly busy. A total of 104 Belgian ships and 26 visits of the East African Railways and Harbour's steamship *Liemba* were cleared by health staff at this port during the year.

11.14. Considerably less important but presenting a problem in control is Mbamba Bay on Lake Nyasa. This is a port of entry from Nyasaland, the Rhodesias, South Africa and Portuguese East Africa, but in view of its inaccessibility and the relatively small amount of traffic passing through the port, the stationing of a health officer at this settlement is not considered justifiable at present.

12. HEALTH OF PRISONERS AND DETAINEES

12.1. The health of prisoners was generally satisfactory and this in spite of over-crowding reported from almost every prison in the territory. A small outbreak of cerebro-spinal meningitis with 16 cases occurred in Mtwara Prison during the year, but was brought under control by the administration of prophylactic sulphonamides and by taking steps to relieve the severe over-crowding which was present at the time.

12.2. Generally speaking it is reported that the health of prisoners improves after admission under a regime of regular work, adequate if plain food and regular rest. Regular inspection of prisons and prisoners was carried out by Ministry staff. Sick parades were held daily at all prisons, where possible by a doctor, but in the smaller and less accessible prisons by a medical orderly.

12.3. An outbreak of photophobia occurred at the Wami Prison Camp in Eastern Province and was eventually attributed to the illicit use of local plants as a substitute for snuff or tobacco.

13. HOSPITALS

13.1. DAR ES SALAAM HOSPITALS

13.1.1. The major event of the year was the admission of patients to the wards of the Princess Margaret Hospital in April. The transfer of patients from the Sewa Haji Hospital was made without a hitch and the observation block and Muhimbili Maternity Clinic were incorporated in the new hospital and ceased to function as independent units.

13.1.2. No major modifications were made to the Ocean Road Hospital. The Health Education Unit moved into new accommodation at the Princess Margaret Hospital and the space formerly occupied by the unit was allocated to the Medical Specialist and the newly arrived Child Health Specialist. The office formerly occupied by the Medical Specialist was taken over by the X-ray Department—an extension necessitated by the installation of new X-ray equipment.

13.1.3 The numbers of admissions and new out-patients treated at the Ocean Road Hospital showed a slight increase, although the daily average of patients in hospital fell slightly to 31.3 as compared with 32.3 in 1959.

13.1.4. To facilitate the move from the Sewa Haji Hospital to the Princess Margaret Hospital admissions to the former hospital were kept as low as possible at the end of March, 1960. Once the new hospital was opened admissions rapidly increased and by the last quarter of the year the daily average occupation in hospitals, other than the Ocean Road Hospital, rose to 625, as compared with 418 in the first quarter of the year, when the Sewa Haji Hospital was still in use. The improved facilities are very much appreciated by the general public, and there is a greater readiness to be admitted to hospital, resulting in further pressure on the existing beds. The modern facilities for general in-patients and those being built for infectious diseases highlight the inadequacy of maternity facilities in Dar es Salaam. The Muhimbili Maternity Hospital, with its old and crowded accommodation, is in marked contrast to the modern buildings adjoining it, and highlights the need for further extensions to the new hospital.

13.1.5. The transfer of general in-patients from the Sewa Haji Hospital to the Princess Margaret Hospital enabled the former to be used as an infectious diseases hospital, and on 13th April the patients in the Infectious Diseases Hospital were transferred to the Sewa Haji Hospital. This move is an interim measure and has made it possible to relinquish the old Infectious Diseases Hospital so that the planned development of the Upanga area can continue.

13.1.6. At the same time as the move took place, work started on the Third Ward Block of the Princess Margaret Hospital. This will provide over 200 beds for the accommodation of cases of tuberculosis and other infectious diseases. This block is scheduled for completion in mid-1961. In the meantime the pressure on the present and unsatisfactory infectious diseases accommodation is intense.

13.1.7. The out-patient dispensaries at Mnazi Mmoja, Ilala, Magomeni and the Railway dispensary are used increasingly by the public. The following figures illustrate this:—

	1959	1960	Increase
New cases	135,305	184,006	36%
Total attendances	573,316	709,494	24%

The peak attendance in any day was 3,573 and at Mnazi Mmoja in particular the attendances are as high as an out-patient unit of this pattern can cope with.

13.2. DISTRICT HOSPITAL SERVICES

13.2.1. *Central Province*

During 1960 there were no additions to the district hospital services of Central Province, although by reorganization of existing accommodation a separate children's ward and Grade III maternity accommodation were provided at Dodoma, and tuberculosis beds at Kongwa were increased from 84 to 90.

Dodoma Hospital at the provincial headquarters is still the largest hospital in the province. In the Grade IV section there were 48,127 first attendances of out-patients and 93,022 total attendances, the latter figure being an increase of 15,028 over the 1959 figure. The daily average in-patient figure showed a slight rise to 126.0 as compared with 125.09 in 1959, whereas total admissions dropped to 4,145 as compared with 4,773 in 1959.

Singida Hospital was provided with a generator for the X-ray plant and emergency theatre lighting, but otherwise there was no change in the hospital. Out-patient first attendances rose slightly from 18,084 in 1959 to 18,993 in 1960, and admissions from 1,110 in 1959 to 1,443 in 1960.

By re-arrangement of existing accommodation, it was possible at Kongwa to increase the number of tuberculosis beds from 84 to 90 at the expense of 8 general beds. Pressure on this limited number of beds was severe, but by the increased use of out-patient facilities in the province, it was possible to increase admissions of cases of tuberculosis to 232 as compared with 118 in 1959. The buildings at Kongwa continue to deteriorate and the completion of the new Mpwapwa Hospital and the provision of tuberculosis beds at Dodoma are matters of increasing urgency.

Pressure on the present Mpwapwa Hospital was as great as ever but although funds were available no work was commenced on the new hospital.

The bedded dispensaries at Manyoni and Itigi continued to be fully used and regular visits were paid to them by the District Medical Officer.

13.2.2. *Eastern Province*

No new hospitals were built in the province during the year. Medical practitioners were in charge of the district hospitals at Morogoro, Kilosa, Mahenge, Utete and Bagamoyo, and senior medical assistants or medical assistants were in charge of dispensaries at Mafia, Ruvu and Kimamba. Chazi Leprosarium remained in charge of a medical officer.

There was no change in the number of beds at Morogoro Hospital, and the 184 were even more fully occupied than in the previous year. Male admissions showed little change but the number of female cases and children seeking admission showed increases. Surgical work continued to be heavy and improvement of out-patient facilities was obtained by internal reorganization to provide separate male and female out-patient clinics.

At Kilosa Hospital the number of beds was unchanged at 100, but the average number occupied rose from 84.79 in 1959 to 92.70 in 1960. Out-patient work continued to increase and services provided were improved by addition of a dental clinic in the charge of a dental assistant.

Mahenge Hospital was still not fully occupied, but the daily average of in-patients rose from 26.6 in 1959 to 33.62 in 1960. No further building work was possible in the year.

Bagamoyo Hospital remained in charge of a doctor and its popularity continued to grow. Admissions continued to increase and the 1960 figure was 1,594 as compared with 1,181 in 1959. No major structural alterations have been possible to this hospital which it is hoped to replace in its entirety in the near future.

It has been possible to retain a doctor at Utete for almost all the year and this has been reflected in a rise in admissions from 717 in 1959 to 933 in 1960, and in an increase in the total of out-patient attendances. The hospital buildings, however, remain unsatisfactory although repairs and redecorations were carried out.

Routine visits to Mafia bedded dispensary from Morogoro have proved difficult to maintain, but four such visits were made in the year, together with two emergency visits from Dar es Salaam. Increasing use has been made of air services in the evacuation of emergency cases to the mainland. The rise in admissions continued and the number of out-patient attendances further increased.

13.2.3. *Lake Province*

Hospitals in charge of medical practitioners are at Mwanza, Musoma, Shinyanga, Ukerewe, Geita, Maswa and Tarime.

There has been no change in the accommodation at the provincial hospital at Mwanza. This hospital is old and inconvenient and it is accepted that its replacement is a matter of urgency. The increase in attendances at the hospital has not been maintained and the total number of patients dealt with was 19 per cent less than in 1959.

One ward at Musoma Hospital, closed in 1959, was re-opened in 1960. The daily average of in-patients fell slightly to 51.7 but total attendances of out-patients further increased to 68,661. Emergency surgery continues to provide a large proportion of the surgical work and 77 medico-legal post-mortems were carried out in the year.

The number of beds at Shinyanga Hospital showed no change but a new kitchen and operating theatre were added. Attendances of out-patients and daily average of in-patients both increased in 1960. Midwifery continued to provide a substantial proportion of female patients and confinements averaged over 100 per month.

Ukerewe Hospital was unchanged and continued to work to capacity, the daily average of in-patients remaining at just under 50.

The new Maswa Hospital of 60 beds was opened early in the year. There have been difficulties in the drainage system presumably due to the nature of the subsoil and one ward has not yet been brought into use.

At Tarime the new 13-bed ward was completed and brought into use. In addition, construction of a kitchen, laundry, operating theatre, isolation ward and staff quarters continues. Additional accommodation is planned to provide an adequate district hospital.

Ngudu continued to be a popular and busy bedded dispensary and a total out-patient attendance of 81,986 is particularly noteworthy.

13.2.4. *Northern Province*

In addition to the tuberculosis hospital at Kibongoto there are hospitals in charge of medical practitioners at Arusha, Moshi, Mbulu and Monduli and bedded dispensaries at Oldeani and Magugu.

There was no change in the number of beds at Arusha Hospital during the year, but facilities were greatly improved by the erection and equipping of a new X-ray block through the generosity of a local resident. The space freed in the out-patient department and alterations which have been made, have greatly improved the conditions under which out-patients are seen. Admissions to hospital rose to 5,254 as compared with 4,777 in 1959, and total out-patient attendances increased from 160,053 in 1959 to 190,545 in 1960.

Moshi Hospital, the largest general hospital in the Northern Province, had no change in the number of beds. There was a slight rise in the number of admissions to hospital (10,940 as compared with 10,194 in 1959) and a similar slight rise in total out-patient attendances from 150,200 to 151,346. Pressure on accommodation is particularly severe in the maternity and children's wards of this hospital.

Mbulu Hospital showed an increase in admissions to 2,596 as compared with 2,227 in 1959 and the daily average bed state rose slightly to 95.7. The treatment of tuberculosis continued to be one of the more important functions of Mbulu Hospital, with Oldeani bedded dispensary being used for the overflow.

The Oldeani bedded dispensary continued to form an important extension to Mbulu Hospital in the provincial tuberculosis scheme, and apart from tuberculosis work the dispensary was quiet.

At Monduli Hospital admissions fell slightly, but out-patient attendances rose. A large proportion of medical in-patients were cases of tuberculosis.

Magugu bedded dispensary continued to function, but the newly established Rural Health Centre at Babati nearby will inevitably reduce the work carried out at Magugu.

13.2.5. *Southern Province*

There was no change in the number of hospitals and government dispensaries in the province. Medical practitioners were in charge of hospitals at Mtwara, Lindi, Newala, Songea and Kilwa throughout the year and Tunduru for most of the year. There was also a bedded dispensary in charge of a medical assistant at Liwale.

Lindi Hospital continued to function as the provincial hospital, although it is not situated at the provincial headquarters. There was no change in the number of beds in the course of the year and the hospital continued to be very fully used. It was necessary to reduce the medical officer strength from three to two.

Mtwara Hospital was not so busy as in previous years. Admissions dropped to 1,525 and the daily average bed state 45.15. The condition of the hospital buildings continued to get worse and replacement by a new hospital becomes more urgent.

The principal activity of Nachingwea Hospital continued to be the treatment of pulmonary tuberculosis. The District Medical Officer, Nachingwea, is also Tuberculosis Officer of the province, and a substantial number of both in-patient and out-patient cases of tuberculosis were under treatment at Nachingwea. The general beds of the hospital coped satisfactorily with the needs of the surrounding population.

Songea Hospital again had a very busy year with a daily in-patient average of 62.6, although the official number of beds is only 56. Admissions fell slightly to 1,500 and total out-patient attendances were the second highest in the province. There was a slight increase in the number of surgical operations performed and the number of deliveries rose to 149. Minor improvements were carried out to hospital buildings and an all-African Hospital Advisory Committee was established in the year which gave constructive advice and proved to be very co-operative.

Newala Hospital was still not functioning fully as a proportion of beds have not yet been brought into use. This is principally because of staffing difficulties and the presence in the immediate neighbourhood of a mission hospital. Admissions to those beds which are in use fell from 552 in 1959 to 434 in 1960, and the daily average bed state from 35.85 to 29.37. Out-patient attendances, both first attendances and total attendances, continue to be substantial.

Shortage of staff made it impossible to retain a medical officer at Tunduru Hospital throughout the year. This lack of continuity was probably a contributory factor in the fall in the daily average of in-patients from 20.64 to 18.51. At Kilwa Kivinje, where the hospital buildings are equally as old and unsatisfactory as those at Tunduru, the daily average of in-patients rose from 23.72 in 1959 to 29.43 in 1960. First attendances of out-patients rose to 14,668 as compared with 11,905 in 1959.

Liwale Bedded Dispensary continued to fill a useful function in one of the more remote parts of the province. Admissions to hospital rose substantially to 489 as compared with 260 in 1959. The plan to convert this dispensary into a rural health centre has not yet been implemented.

13.2.6. *Southern Highlands Province*

In this province the hospitals in charge of medical practitioners are at Mbeya, Iringa, Tukuyu and Njombe, and bedded dispensaries in charge of medical assistants or senior medical assistants are at Kyela, Malangali and Chunya.

Mbeya Hospital at the provincial headquarters was improved in 1960 by the completion and occupation of a kitchen and laundry and a garage/mortuary block. Work also started on a new 26-bed ward. There was a substantial rise in the number of admissions to 3,721 as compared with 2,923 in 1959.

At Iringa Hospital a new kitchen-laundry block was completed in 1960 and construction of a new ward block continued. Cases admitted in the year rose slightly to 3,754 and the daily average bed state at 75.58 fell slightly. There was an increase in the amount of maternity work carried out at the hospital and out-patient attendances remained very satisfactory.

Tukuyu Hospital continued to be fully used during the year. Admissions fell slightly to 3,273 and the daily average bed state to 69.86. Out-patient attendances were still very substantial. The construction of the new hospital commenced and went ahead rapidly, but it will not be possible for the hospital to be completed and brought into use until the end of 1961 or early 1962.

The limited accommodation available at Njombe Hospital is still inadequate for the needs of the district. Provision has been made for additional accommodation to be built at Njombe in 1961 and it is hoped that the present over-crowded conditions will be remedied by the end of the year. Admissions in 1960 fell slightly to 1,633 as did the daily average bed state which at 43.6 is still appreciably higher than the official number of beds (36).

At Kyela Bedded Dispensary admissions again rose to 1,394 as compared with 1,196 in 1959 and the daily average rose to 18.97. Total out-patient attendances were up to 84,394. The replacement of the bedded dispensary by a small hospital has been approved, and it is hoped that work will commence in the near future.

The bedded dispensary at Chunya remained quiet, admissions dropping to 796 and out-patient total attendances at 18,284 being the lowest in the province.

Malangali Bedded Dispensary continued to be moderately busy with 1,279 admissions and a total out-patient attendance of 30,879.

13.2.7. Tanga Province

In Tanga Province the hospitals under the charge of medical practitioners are at Tanga, Korogwe, Muheza, Pangani, Lushoto and Same. Bedded dispensaries in the charge of medical assistants are at Handeni, Usangi and Amani.

Tanga Hospital with 410 beds remains the largest general hospital in the territory outside Dar es Salaam. The most noteworthy addition during the year was the completion and occupation of the Rodoussakis Ward which is being used for the accommodation of cases of infectious disease, in particular of tuberculosis. One of the oldest parts of the hospital, the patients' reception and records office, a building dating from German days, was demolished and a kitchen was converted to provide accommodation for these units.

The Rodoussakis Ward, referred to above, together with the existing infectious diseases hospital, provides very reasonable accommodation for the treatment of tuberculosis, and an adequate base for the organization of the expanding provincial tuberculosis scheme.

There was a further increase in the number of admissions to hospital, the figure being 7,930 in 1960. The total out-patient attendances exceeded 240,000 and new out-patient cases 81,000. As in previous years the hospital was very busy surgically and upwards of 2,000 operations were carried out in the year.

At Korogwe Hospital (116 beds) no structural alterations were carried out. The hospital continued to be very busy with 2,538 new admissions and a daily average of 96.6 in-patients, slightly higher than in 1959. There was a relatively high proportion of major obstetric cases and the amount of surgery carried out increased. Twenty-six beds were devoted to the treatment of male cases of tuberculosis, but female cases are now treated at Muheza.

Of the 106 beds at Muheza, 46 are devoted to the treatment of tuberculosis. The hospital was very fully occupied during the year with a daily average of 105.9 patients.

Same Hospital, although it has only 30 beds, is becoming more and more busy. Admissions totalled 1,381 as compared with 1,246 in the previous year, and total out-patient attendances at 21,734 were almost double the total for the previous year. The structure of the buildings continued to cause concern and cracks repeatedly appeared in the foundations and walls.

Lushoto Hospital has 60 beds in buildings of various ages, but structurally sound. Out-patient attendances fell slightly in the year, but as in the past the hospital continued to admit a great variety and number of emergency cases.

The 26-bedded Pangani Hospital is old, though solid, and minor improvements were effected during the year. Admissions rose from 749 in 1959 to 880 in 1960, and out-patient attendances also increased.

Handeni Bedded Dispensary is due for replacement by a district hospital and it is anticipated that work on the first unit, the out-patients and administration block, will start in 1961. During this year 1,140 patients were admitted to the 24 beds and a total of 16,060 out-patients were seen.

The Usangi Bedded Dispensary in Same District is situated in an area of dense population. This 44-bedded unit received minor improvements in the year and continued to be a very busy unit with 1,498 admissions, a daily in-patient average of 42.07 and 19,961 total out-patient attendances.

13.2.8. *Western Province*

In the Western Province there are hospitals in charge of medical practitioners at Tabora, Kigoma, Nzega, Kahama, Kibondo and Sumbawanga and bedded dispensaries at Mpanda and Kasulu.

The bed strength of Tabora Hospital remained unchanged and no major structural alterations were carried out, although by internal reorganization provision for female cases was improved. Admissions totalled 3,620 with a daily in-patient average of 137.4.

Kigoma Hospital received no major structural alterations during the year, but internal reorganization was carried out to provide additional accommodation for maternity cases. Although busy the hospital coped satisfactorily with in-patients but the absence of an isolation ward is inconvenient. Total out-patient attendances at Kigoma and Ujiji were 86,499, the highest in the province.

Nzega Hospital has 96 beds, 40 of which are devoted to midwifery. There were no major structural alterations. Admissions totalled 3,497, over two-thirds of which were female, and the daily in-patient average fell slightly to 75.

There were no structural alterations to Kahama Hospital in the year. The present accommodation is adequate for the needs of the area and the daily in-patient average for this 68-bedded hospital was only 33.37.

The two wards closed at Kibondo in the previous year were re-opened and brought into use. Admissions rose to 1,445 as compared with 1,244 in the previous year, and the daily in-patient average jumped to 49.0 compared with 35 in 1959 and 43 in 1958. Total out-patient attendances were 47,260.

The new Sumbawanga Hospital settled down well and with 2,273 admissions, a daily in-patient average of 64.3 and 42,415 total out-patient attendances, is adequate for the present needs of the district.

Mpanda Bedded Dispensary continued to function as in the past with major and emergency cases being referred to the medical officer of the mine nearby. Admissions to the dispensary rose to 411. With the closure of the mine, the future of the dispensary is uncertain.

At Kasulu there is at present a 22-bedded dispensary, but a new 60-bedded district hospital is being built.

13.2.9. *West Lake Province*

West Lake Province became a separate medical administrative unit in 1960. This small province has hospitals in charge of medical practitioners at Bukoba and Biharamulo and a bedded dispensary at Ngara.

Bukoba Hospital had 131 beds in use, admitted 3,274 in-patients and had a daily in-patient average of 90.69. Total out-patient attendances numbered 48,090 and new cases seen 28,490. Minor improvements were carried out to the hospital buildings during the year, particularly the replacement of wood-burning stoves by oil-burning ones.

Biharamulo Hospital had 42 beds, admissions to which totalled 790 with a daily average bed state of 26. Out-patient attendances totalled 29,967.

Ngara has an old and rather unsatisfactory bedded dispensary of 24 beds. There was overcrowding at times because of the number of cases of sleeping sickness admitted. Out-patient attendances totalled 30,943.

13.3. *Tuberculosis Hospital, Kibongoto*

The bed strength of Kibongoto Hospital was increased to 302, but the daily in-patient average was 238.5 as compared with 262.3 in 1959.

Although the hospital buildings are satisfactory the accommodation used by staff is generally unsatisfactory and a replacement programme will be necessary as and when funds become available, there being no alternative accommodation available locally.

The welfare scheme continued, but suffered a setback as disease destroyed over 60 per cent of the coffee crop. Spraying was undertaken and it is to be hoped that there will be no further similar difficulty.

There was a further fall in the number of cases of tuberculosis admitted to 988 as compared with 1,136 in 1959. This was due in part to a policy change by which uncomplicated glandular cases and cases of early primary disease without complications were treated as out-patients and not admitted to hospital. In addition, the milder cases admitted to hospital were discharged to out-patient treatment earlier than was formerly the case. Cases from the Kilimanjaro and North Pare areas are admitted to hospital earlier than in the past although Waarusha and Masai cases tend to come to hospital when the disease is well advanced.

As before, the majority of cases were of pulmonary disease, i.e. 716 cases out of the total of 988 admitted. There was a slight predominance of male cases over female. A change in age incidence has been noted in cases from the Kilimanjaro area. In the past cases in the 15 to 35 year age group predominated, but in 1960 cases were principally children with early disease and elderly men and women with degenerative breakdown of previously healed lesions. It is considered that this, together with a reduction in the number of new cases in relation to the population, indicates an increased control of tuberculosis on the mountain. The increased number of cases admitted from "tuberculosis" families is also noteworthy and probably related to better tuberculosis health visiting and community awareness of the disease.

There were 47 deaths during the year, mostly of chronic resistant cases and early very advanced cases.

Participation in Medical Research Council trials continues and standardized treatment regimes are used with recent emphasis on isoniazid and thiacetazone.

B.C.G. vaccination is available for school entrants in the Kilimanjaro and Mbulu areas. In the last three years over 100,000 children have been vaccinated and such vaccination is generally acceptable to all tribes in the area with the exception of the Masai. Only two known break-through cases have occurred, both with mild pulmonary symptoms. No cases of tuberculous meningitis have been admitted to hospital from this very large group, an indication of the efficacy of the vaccination.

13.4. *The Leprosaria*

Nineteen leprosaria submitted returns to the Ministry at the end of 1960. These included government leprosaria and mission or native authority administered units. As in the past considerable assistance has been given to non-government institutions by central government in the form of grants for specific drugs and maintenance grants.

Staffing difficulties continue at Makete Government leprosarium where supervision remains the responsibility of a medical officer from Tukuyu and which lost its lay superintendent in 1960. An African is to be trained as a Hospital Steward (Leprosarium) in his place. The population of the institution fell slightly to 475 but the numbers on out-patient treatment increased to 1,864. Buildings were adequately maintained and agricultural work continued.

Chazi Leprosarium, the second of the larger government leprosaria, continued to be adequately staffed throughout 1960. There is ward accommodation for 35 and the daily average of in-patients was 29.02. Considerable agricultural work was carried out in the year.

Njoro Chini, a small government institution, at Moshi in Northern Province, is an unsatisfactory and uneconomic unit and efforts are being made to close it down. Those patients still in need of treatment will be transferred elsewhere. Mtindiro is equally unsatisfactory and difficult to supervise.

14. THE MALARIA SERVICE

14.1. *General Review of the Year*

This was the first year that the Malaria Unit was based on Morogoro, and visits of inspection to the many mosquito control programmes throughout Tanganyika have been greatly facilitated by this central location. The laboratory was visited during the year by the Minister for Health and Labour, by the Chief Medical Officer and other senior officers and technical specialists.

The mosquito controls in each settlement have continued to operate under the direct supervision of Malaria Assistants. The controls in Western, Lake and West Lake Provinces have been inspected regularly by the Malaria Field Officer, Tabora, and elsewhere in Tanganyika by the Specialist Malariologist and Malaria Field Officers based on Morogoro. The Entomologist supervised mosquito control work adjacent to Mwanza, but most of his time was occupied working with the Bilharzia team there. In July the Medical Officer was promoted Specialist Malariologist, and in October the Senior Malaria Assistant became the second Training Grade Malaria Field Officer.

Anopheline mosquito control methods continued to be those of drainage and larviciding in settlements, using Malariol High Spread containing BHC, or BHC powder larvicide depending on the nature of the breeding site. Domestic control of culicine breeding remained an essential part of all mosquito control programmes. Residual spraying was undertaken for the final cycle at Mpanda in June, and a conservative control programme instituted thereafter. Mosquito and malaria surveys were carried out at Mvumi in Central Province, and in many places in West Lake, Southern and Eastern Provinces.

Investigations into the use of organo-phosphorus insecticides for anopheline and culicine larval control, and into their safety towards valuable fish, were undertaken. Anti-malaria drug trials of pyrimethamine and biguanides, with particular reference to parasite resistance in Tanga Province, and of a mixture of 4- and 8-aminoquinolines as a mass suppressive, were carried out.

Training of Health Inspectors (Training Grade) at Morogoro and of Assistant Health Inspectors at Dar es Salaam was done by the Malaria Service, and instruction in mosquito control given to a King's African Rifles officer as well as to the Training Grade Malaria Field Officers. The Specialist Malariologist attended a WHO Malaria Chemotherapy meeting in Geneva, and the Entomologist a WHO Molluscicide Screening conference in West Germany. Both these officers also attended a Bilharzia Conference held by WHO/CCTA in Lourenço Marques.

Nine scientific papers were published by the professional officers of the Service during 1960 and several bulletins, reports and working papers were produced.

14.2. Publications produced by members of the Malaria Service

CLYDE, D. F. (1960) "Potentiation of pyrimethamine by sulphadiazine" *Transactions Royal Soc. Trop. Med. Hygiene*, Vol. 54, p. 87.

CLYDE, D. F. (1960) "Tasteless chloroquine preparations" *East African Medical Journal*, Vol. 37, p. 543.

CLYDE, D. F. (1960) "Prolonged malaria prophylaxis through pyrimethamine in mothers' milk." *East African Medical Journal*, Vol. 37, No. 10.

CLYDE, D. F. (1960) "Cross-resistance of malaria parasites" *Transactions Royal Soc. Trop. Med. Hygiene*, Vol. 54 (in Press).

PRINGLE, G., DRAPER, C. C., AND CLYDE, D. F. (1960) "A new approach to the measurement of residual transmission in a malaria control scheme in Tanganyika." *Transactions Royal Soc. Trop. Med. Hygiene*, Vol. 54, p. 434.

WEBBE, G. (1960) "Observations on seasonal fluctuations of snail population densities in the Northern Province of Tanganyika." *Annals Trop. Med. and Parasitology*, Vol. 54, p. 54.

WEBBE, G. (1960) "Laboratory and field trials of a new molluscicide Bayer 73 in Tanganyika" *Bulletin World Health Organization* (in Press).

WEBBE, G. (1960) "The susceptibility of fourth stage larvae of *Anopheles gambiae*, *Aedes aegypti* and *Culex pipiens fatigans* to some phosphoric acid esters" *Annals Trop. Med. and Parasitology*, Vol. 54, No. 4.

WEBBE, G. (1960) "Field trials of phosphoric acid esters as larvicides and their toxicity to fish." *Annals Trop. Med. and Parasitology*, (in press).

Unpublished reports produced by the Malaria Service in 1960

The following reports were produced by members of the Malaria Service in 1960, but were not published. They are available on application to the service.

- (1) Malaria and mosquito survey at Mvumi, Central Province.
- (2) Malaria Eradication—World Health Day. Script broadcast through T.B.C. in April, 1960. English and Kiswahili.
- (3) Mass Chemotherapy of Malaria Using Camoprism: Field Trial. Progress Reports 1-6 made to W.H.O. Geneva.
- (4) Malaria Survey in West Lake Province.
- (5) Working Papers for Technical Meeting on Chemotherapy of Malaria, W.H.O., Geneva.
 - (a) "General conditions and basic elements for the planning and organization of field research and large scale trials of antimalarial drugs."
 - (b) "Practical problems of mass drug administration."
- (6) Tests of Cooper's AM capsule concentrates as culicine larvicides in laboratory and field.
- (7) Tests of Dipterex tablets as a culicine larvicide in the field.
- (8) Tests of organophosphorus compounds as larvicides in the laboratory and field.
- (9) Breeding sites of malaria vectors in relation to water management and agricultural practice in the Sukumaland area of Tanganyika.

14.3. During 1960 the control of malaria, primarily by the use of mosquito larvicides and drainage, continued to be the principal duty of the Malaria Service. Mapping of malaria parasite distribution throughout the country was organized and the first surveys specifically for this purpose were carried out. New insecticides were tested in the laboratory and field. The Entomologist continued his studies on the ecology of bilharzia vector snails at Mwanza.

14.3.1. Malaria control work undertaken in 1960 may be presented in two sections, as follows:—

1. Anti-mosquito measures.
2. Anti-malaria measures.

ANTI-MOSQUITO MEASURES

The control of malaria in settled areas of Tanganyika has continued to be mainly through measures directed towards the reduction of the larval stages of mosquitoes, particularly the two principal vectors *Anopheles gambiae* and *funestus*. These methods include drainage and larviciding. The measures may be summarized thus:

- (1) Anopheline larvicidal measures.
- (2) Drainage measures.
- (3) Anopheline imagocidal measures.
- (4) Culicine control measures.
- (5) Investigations of insecticides.
- (6) Malaria and mosquito surveys . . . each of these is now considered in detail.

(1) *Anopheline larvicidal measures*

Anti-anopheline measures carried out in towns, settlements and institutions continued to be based on the use of Malariol HS(B) applied by means of Four Oaks "Kent" pattern sprayers, or in some instances by smaller sprays or sand or sawdust impregnated with Malariol HS(B). In locations where oil larvicides might damage rice or fish farming, a powder larvicide containing BHC has been used, the "Orient" pattern rotary blower being the standard item of equipment used for the application.

(2) *Drainage Measures*

Drainage and permanent works for the reduction of mosquito breeding sites were maintained in 57 settlements and isolated institutions. Additional surveys or works were carried out in six townships.

(3) *Anopheline* imagocidal measures

With the termination of the Pare-Taveta residual spray scheme carried out by the East African Malaria Institute, and reductions in the Mpanda spray scheme carried out by the Malaria Service, residual spraying has been restricted to institutions such as prisons, hospitals and schools. These institutions are sprayed against mosquitoes as well as other pests. One final spraying was carried out at Mpanda, in Western Province, and the control thereafter reverted to the routine larviciding type.

Mpanda mosquito control scheme

The fifth cycle of spraying of houses at Mpanda Mine and Minor Settlement, using dieldrin 50 per cent wettable powder at a nozzle dosage of 80 mg/sq. foot, was carried out in July. Following this spraying the control was reorganized on the usual larvicidal programme, and staff adjusted accordingly. It was apparent that, with the closure of the mine and dislike of the residual spray scheme by many villagers in the Minor Settlement, spraying operations would become more costly and less efficient.

The details of the fifth spray cycle are as follows:—

Number of houses sprayed at Mpanda	...	...	...	3,458
Number of rooms sprayed	...	...	...	6,269
Number of houses not sprayed	...	...	...	258
Quantity of dieldrin used	...	...	...	613 lb.

A full report on the spray scheme since its inception in 1957 is being prepared and is attached at Appendix I to this report.

(4) *Culicine* control measures

The problem of controlling *Culex fatigans* at an economic cost has been the subject of investigation throughout the year. Organo-phosphorus insecticides of the less toxic varieties appear to be the larvicides of choice. Studies of the dosage rates and methods of application of these compounds are continuing. In the following section under (b) there is a brief discussion of the compounds.

(5) *Investigations of insecticides*

The work carried out by staff of the Malaria Service during 1960 is divisible into:—

- (a) Larvicides on fishponds, Malya; and
- (b) Culicine larvicides in urban areas.

(a) *Larvicides on fishponds, Malya.*

In previous years testing of a wide range of chlorinated hydrocarbon and organophosphorus mosquito larvicides has been undertaken in fishponds at Korogwe and Malya, and the results have been recorded in successive Annual Reports. The objects of these trials have been, first to assess the larvicidal value, and second to find out the safety of the larvicide to edible fish.

1. The larvicidal value of organo-phosphorus compounds

Technical preparations of Baytex, methyl parathion, and chlorthion were used to prepare acetone-water suspensions. 4th stage larvae of *A. gambiae*, *Aedes aegypti*, and *Culex p. fatigans* were tested for susceptibility to the suspensions. The 48-MLD of the compounds to *A. gambiae* are about 0.005 parts per million for Baytex and methyl parathion, and 0.025 p.p.m. for chlorthion; to *A. aegypti* about 0.15 p.p.m. for Baytex and methyl parathion and 0.025 p.p.m. for chlorthion; and to *C. up. fatigans* about 0.0025 p.p.m. for Baytex, 0.005 for methyl parathion, and 0.01 p.p.m. for chlorthion. A comparison of the toxicities of Baytex and methyl parathion with DDT and dieldrin for *A. gambiae* shows that the species is twice as susceptible to the organo-phosphorus compounds as to dieldrin and 12 times as susceptible as to DDT.

2. The safety of the larvicide to fish

Field trials of 3 organo-phosphorus compounds have been carried out in fishponds, and the toxicity of the compounds to fish of the genus *Tilapia* assessed. Concentrations of 10 and 5 p.p.m. of Baytex and chlorthion caused 100 per cent mortality of *Tilapia melanopleura*, *zilli* and *leucosticta* over a 24-hour period, while a concentration of 5 p.p.m. of methyl parathion killed 87.5 per cent of *T. melanopleura* and 75 per cent of both other species

over 48 hours. No significant differences in susceptibility were observed between any of the three species of fish at the concentrations used. Effective control of anopheline and culicine larvae was obtained for a period of 5 weeks with granulated formulations of Baytex, methyl parathion, and chlorthion applied weekly, each at a dosage of 0.4 lb. per acre of the active substance. No mortality of fish in any of the treated ponds was observed, and specimens examined at the end of the period of treatment were of expected size.

It is concluded from these results that there is an adequate margin of safety for the three species of fish tested in relation to effective mosquito control with the formulations. Taking into consideration the mammalian toxicity figures supplied by the manufacturers of the formulations used here, it seems unlikely that concentrations dangerous to mammals will be produced by proper application of the formulations under the field conditions normally obtaining. It might, however, be advisable to preclude their use in sources of human drinking water such as wells, where repeated applications might build up concentrations to a dangerous level.

(b) Culicine larvicides in urban areas.

Tests of culicine larvicides on a town-wide basis have been carried out at Morogoro using three formulations, namely:—

- (a) lindane-DDT capsules;
- (b) malathion 50 MO; and
- (c) diazinon 60 EC.

Tests of dipterex in tablet form have been carried out in collections of sullage and/or sewage water at Morogoro, Kilosa, Utete, Kilwa, Lindi, Mtwara and Mikindani.

As far as the work has been carried out to the end of 1960, it appears that the lindane-DDT capsules are less effective than the other preparations for this particular work. The diazinon is superior to malathion because it needs to be used less frequently to obtain the same effect, and it has a better residual effect in pit latrines. It is thus more economical. The dipterex has not as yet failed in any instance to kill mosquito larvae.

(6) Malaria and mosquito surveys

Malaria and mosquito surveys were carried out during 1960 in various areas of the Central, West Lake, Lake, Western, Southern, Eastern and Tanga Provinces.

14.4. Research

Research work during 1960 has been connected with problems encountered in the field in the control of mosquitoes and malaria, and in the ecology of bilharzia snails. Much of the work has been included in descriptions elsewhere in this Report. The principal investigations are summarized here.

A. Mosquitoes and malaria.

1. Project—Larvicides on fishponds.

Place—Malya, Lake Province.

Officer—G. Webbe, Entomologist.

Outline of the project—This is a continuation of earlier trials of mosquito larvicides safe to edible fish. The 1960 trials included assessment of organo-phosphorus compounds Baytex, chlorthion, methyl parathion for (a) the larvicidal effect, (b) safety towards fish.

2. Project—Culicine larvicides.

Place—Morogoro, Eastern Province.

Officer—H. G. Bilcliffe, Malaria Field Officer.

Outline—Continuation of earlier trials. In the 1960 series the application and value of organo-phosphorus insecticides used as culicine larvicides in pit latrines, open drainage pits and collections of polluted water were determined, with the object of ascertaining the most economical preparation suitable for general use.

3. Project—Pyrimethamine resistance.
Place—Tanga Province.
Officer—D. F. Clyde, Specialist Malariologist.
Outline—Susceptibility testing of *Plasmodium falciparum* among residents of villages throughout Tanga Province, using doses of 25 or 75 mg. pyrimethamine in order to map the spread of resistance. In progress since 1953.
4. Project—Cross-resistance of *P. falciparum* to proguanil.
Place—Magila, Tanga Province.
Officer—D. F. Clyde, Specialist Malariologist.
Outline—Children carrying pyrimethamine-resistant *P. falciparum* parasites tested with weekly doses of proguanil and lapudrine to find out if cross-resistance occurred. The results indicated a high degree of cross-resistance.
5. Project—Mass administration of 4- and 8-aminoquinolines.
Place—Eastern Province.
Officer—D. F. Clyde, Specialist Malariologist.
Outline—Mass administration of a mixture of amodiaquine and primaquine to residents of hyperendemic malarious areas, in an attempt to interfere with transmission. At weekly rates the attempt was successful. The trial continues.

B. Snails and bilharzia

- Project—Ecology and control of bilharzia snails.
Officer—G. Webbe, Entomologist.
Outline—Continuation of a long-term study by the Bilharzia Team, Mwanza, on the ecology and destruction with various molluscicides of bilharzia snails in Sukumaland.

15. DENTAL SERVICES

The staff position throughout 1960 continued to be very favourable. Throughout the year there were six dental surgeons and for most of the year a senior dental surgeon. In addition to Dar es Salaam, units in charge of a dental surgeon operated throughout the year at Tanga, Mbeya and, until December, 1960, at Mwanza. Contracts with private dental surgeons were entered into to provide facilities at Arusha, Dodoma and Mwanza.

Dental Assistants who have completed training now total eighteen and are stationed at Dar es Salaam, Mbeya, Lindi, Songea, Iringa, Mwanza, Dodoma, Tabora, Morogoro, Tanga, Moshi, Arusha, Kilosa and Tukuyu. The demand for dental treatment from Africans does not seem as yet to have kept pace with the output of dental assistants. Further training of dental assistants has been discontinued so as to allow for the advanced training of selected dental assistants already qualified. Successful trainees will be up-graded to the post of Assistant Dental Surgeon. This training will, it is hoped, commence late in 1961.

16. THE SLEEPING SICKNESS SERVICE

The Sleeping Sickness Service was organized as before and remained in the charge of the Sleeping Sickness Specialist, stationed at Tabora.

16.1. REPORTED INCIDENCE 1956/1960

							1956	1957	1958	1958	1960
Cases	...	...	...	...	...	...	646	411	574	836	825

The position over the country, both as regards the total number of new cases of sleeping sickness reported and their general distribution, was very much the same during 1960 as it was in 1959. A reduction in the number of cases occurring in the Southern and Northern Provinces was offset by a sharp outbreak in Ngara District in West Lake Province, but there has been no spread anywhere to areas hitherto totally unaffected.

16.2. In the Western Province there was a slight fall in incidence from 353 in 1959 to 334 in 1960, but even so this province provided the highest amongst the provincial totals. It is perhaps noteworthy that in Kasulu District the incidence fell from 155 to 96. In this district reclamation of previously evacuated land is proceeding apace under the direction

of a Settlement Officer and the results of such clearing are reflected in this diminution in incidence. Much fertile land in the Muyama area evacuated in 1958 because of epidemic sleeping sickness has now been re-occupied. In Kibondo, on the other hand, the situation is less encouraging, for here the incidence of the disease has been once more doubled: 16 in 1958, 33 in 1959 and 61 in 1960. Nearly all these infections, however, have occurred in hunters and honey collectors in the far east and south-east of the district, especially to the south-east of Nyaviyumbu, and the main settled area has been unaffected. Here, as in Kasulu, clearing has gone on throughout the year, being carried out by a permanent paid clearing gang. They have cleared a large barrier to prevent spread of fly westwards into the settled area; they have freed land for cultivation near Nyaviyumbu, and towards the end of the year were beginning work on one of the last isolation blocks of fly bush within the district—that west of Kasanda.

In the Kigoma District, freedom from *T. gambiense* infection, mentioned in the 1959 Report, continued. It is now over two years since the last case was diagnosed in the focus at Kagunga on the lake shore, 30 miles north of Kigoma, and there appears little doubt that as a result of the administration of pentamidine as a prophylactic to the whole population, which itself brought down the incidence almost to nil, combined with the eradication of *Glossina palpalis* throughout the area by insecticidal spraying carried out by the Tsetse Branch of the Veterinary Department, sleeping sickness has now been cleared from this area where at one time it presented a serious problem. The risk of re-invasion by tsetse fly from over the northern border of Ruanda Urundi, where it still exists, and of the infection of this fly either from the North or from the Congo, make it necessary to keep a close watch on this area, however, and regular patrols are maintained along this part of the lake shore.

In Kahama District the position remains very much as it has been in the past, infections occurring mainly in collectors of honey or firewood.

In Tabora District, the disease continues to be virtually confined to the Igome River, Uyowa and Ulyankulu, the south-west and south-east of the district remained almost free of the disease, a great contrast with the situation of six years ago when most of the 500 cases diagnosed in 1954 were infected between the Central Line and the Ugalla River.

Mpanda District, like Kibondo, shows a considerable increase from 32 cases in 1959 to 59 in 1960, but here also the majority of the infections were in hunters, fishermen and collectors of firewood and honey. Most of the infections arose in the north and north-east of the district, but were fairly generally distributed over a wide area with no particular foci. A few were infected near Mpanda, mainly from that part just to the north and north-west where there is much new settlement, although it was thought that there would be more cases than have in fact occurred among farmers who have moved into the valleys near Mpanda in order to grow rice. Six railway employees were infected during the year along or near the Mpanda Line. The scattered incidence of the disease and the sparse population of this district make effective control almost impossible. Arrangements are, however, in hand for the carrying out of more regular field surveys in this district and encouragement in being given to closer and more controlled settlements, at least near Mpanda itself. Six cases were reported from the Ufipa District, the highest number for many years, but all these persons appear to have been infected in Mpanda to the north or just on the border between the two districts.

16.3. The West Lake Province had the second highest incidence with 305 cases compared with 256 in the previous year. This increase was mainly due to a very sharp outbreak in Ngara where 216 cases occurred as compared with 85 in 1959. Nearly 200 of these cases occurred in an epidemic involving the country in the far north-west of the district on the Ruanda Urundi border between the Murusagamba escarpment and the Kagera River. The first case from this area was diagnosed at Nyamigi (Ngara) Hospital in mid-January; 12 cases from the same area were diagnosed in March and at the same time cases began to come in from Mtobeye just to the north of Ngara. By mid-June the outbreak in its original area had almost died down but the disease had spread eastwards and in June there was another extensive outbreak just below the northern end of the main Ngara ridge. This too died down with the removal and treatment of the infected persons, but a few cases were still coming forward at the end of the year. Twenty-nine deaths occurred in the outbreak area during the year, giving a death rate of approximately 15 per cent. It has been suggested that this outbreak is attributable to a large scale movement of buffalo hunted out of their usual haunts which brought fly in numbers into the Kiarusya villages where the outbreak originated. Certainly, there had been fly in the area of the villages in the past but people say that until 1960 they have not noticed them in any number actually near their homes.

In Biharamulo District, on the other hand, there was a marked fall in the number of new infections from 102 in 1959 to 53 in 1960, and this, combined with the continued success of the scheme for the settlement of immigrants from Sukumaland, near the eastern shore of Lake Victoria, gives rise for optimism. Some 60 to 70 more Wasukuma families moved into the Buzirayombo area on the lake shore in September in time for the 1960 planting season and the influx continued steadily throughout October.

In Karagwe District, also a gratifying fall in incidence has occurred, from 64 cases in 1959 to 32 in 1960. These cases all came from a narrow strip of country extending south-west from Nyabionza along and just to the east of the Kagera River towards the Ngara District border.

16.4. In the Northern Province the small epidemic between Babati and Magugu, 100 miles south of Arusha, died down and only 20 cases occurred in this district compared with 49 in 1959. None of these cases were traced to the Galappo area where the sharp epidemic of 1959 centred; nearly all the cases having been infected in land to the east of the Great North Road. The occurrence of 3 cases near Kitete 15 miles to the north of Mto-wa-Mbu caused some disquiet in view of the increasing Masai settlement in that area. Close attention is being given to this and a medical survey was started towards the end of the year.

16.5. In the Eastern Province the number of cases more than doubled, the increase being from 17 in 1958 and 31 in 1959 to 70 in 1960. The main focus of the disease in this province is in the Nyambuswa Valley between Malinyi and Kilosa Kwa Mpepo. Control in this very sparsely populated area is difficult; preventive measures are to all intents and purposes impossible, but concentration on case finding and treatment, to which the apparent increase in incidence of the disease is at least in part attributable, is leading to good results.

16.6. The increase in the incidence of the disease in the Southern Province mentioned in last year's report was fortunately not maintained and the number of cases coming forward fell to 89. There were a few scattered sporadic infections from both the east and west of Tunduru District, but no recurrence of 1959's minor epidemic. The main focus of the disease continued as in the past to be in the Liwale/Nambwa/Kilimarando area, and here there is a definite although as yet moderate fall in the number of cases. The Sleeping Sickness Dispensary at Nambwa is popular with the local people and serves a very useful purpose. Forty-six cases were diagnosed at this dispensary during the year, and of these only 10 were late stage cases with serious involvement of cerebro-spinal fluid. Although it is as yet rather early to express optimism, it does seem possible that with improved communications and increasing settlement, the disease in this area will eventually be brought under control.

16.7. Elsewhere in the territory incidence is negligible. There were three cases reported from Geita District in the Lake Province and none from Tanga or Central Provinces, while a single case was reported from Chunya in the Southern Highlands Province who had probably been infected in the adjoining Western Province.

16.8. The Sleeping Sickness Specialist stationed at Tabora in the Western Province continued to carry out clinical trials on new drugs for the treatment of the disease. As in the past his work was again hampered by the present low incidence of sleeping sickness in the area within reasonable reach of Tabora.

Trials of Melarsen W., the water soluble form of Mel. B continued.

Trials with Nitrofurazone ("Furacin") have been discontinued as, in addition to the side effects previously known, this drug appears to have a damaging effect on the heart.

The almost complete lack of early stage cases in the Tabora area hampered trials of Berenil very seriously. It appears, however, that this drug may prove to be useful for the very early stage Trypanosomiasis human infection since a treatment course of only seven days is effective, but it is clear that it is useless once the central nervous system has become even slightly involved.

17. THE PSYCHIATRIC SERVICES

17.1. The number of patients remaining in Mirembe Hospital at the end of 1960 was 687. This is an increase of 68 over the number of patients remaining in hospital at the end of 1959 and is by far the highest on record. In 1959 the number of patients increased by only 12 over the previous year.

The number of admissions showed a startling increase and was again by far the highest on record: 602 patients were admitted to Mirembe in 1960 compared with 503 in 1959—an increase of 99. Of these patients 469 were admitted under certificate, 88 under observation and there were 45 voluntary patients. In 1959, 345 patients were admitted under certificate, 85 under observation and there were 33 voluntary patients. The number of voluntary patients admitted to Mirembe is slowly increasing and this is encouraging. In 1950, for example, only 7 patients were admitted voluntarily. The number of patients admitted under observation seems approximately the same. There were no patients admitted on Temporary Orders during 1960. This type of certification has only been used on two occasions during the past ten years. The total admission rate works out at 12 patients per week compared with 10 patients per week in 1959.

This large increase in the number of admissions was to some extent offset by an increase in the number of discharges. There were 444 discharges from Mirembe during 1960 compared with 345 in 1959—an increase of 99 discharges. The discharge rate represents just over 70 per cent of the admission rate and is almost identical with the figure of 70 per cent last year. Again, this high figure could only be obtained by discharging patients not fully recovered to make room for other, more acute cases. On the average more than a patient a day was discharged from Mirembe in 1960. This is a very high figure for a mental hospital.

During the year only 2 patients could be transferred to Lutindi as Lutindi Hospital is also full up with patients. There were 14 escapes; more than double the previous year. This is still, however, a reasonably low figure considering that Mirembe is now an almost completely "open hospital". Of the escapes 12 were men and 2 were women.

The number of deaths fell from the high figure of 125 in 1959 to only 72 in 1960. This represents just over 10 per cent of the total number of patients in hospital and brings the death rate back to the comparable rate in England.

Of the deaths 21 were females and 51 were men. The number of cases of bacillary dysentery fell in 1960 and this is the main reason for the decrease in the death rate. The general health of the patients may be said to have been fairly good during 1960.

17.2. The new drainage system at Mirembe was completed during the year; some difficulties have been experienced in inducing it to work satisfactorily. The construction of 3 new wards, 2 on the men's side and 1 on the female side of the hospital was commenced in September and additional ablutions and water closets were brought into use. A new perimeter wall on the sides of the male and female enclosures was built, and a garage accommodating 8 vehicles was erected by the patients as a form of occupational therapy, the materials used for it being brought from Kongwa from demolished buildings.

17.3. A total of 219 patients from Mirembe and Isanga Institutions were treated with E.C.T. this year compared with 297 patients in 1959: 202 were Mirembe patients and there were 17 patients treated from Isanga Institution. The results can be analysed as follows:—

				<i>Mirembe</i>					
				<i>Male</i>		<i>Female</i>		<i>Total</i>	
Recovered	...	...	...	62	...	16	...	78	
Improved	...	...	...	76	...	29	...	105	
No change	...	...	...	64	...	52	...	116	
Total				202	...	97	...	299	
				<i>Isanga</i>					
Recovered	...	...	...	5	...	3	...	8	
Improved	...	...	...	7	...	0	...	7	
No change	...	...	...	5	...	2	...	7	
Total				17	...	5	...	22	

No insulin shock therapy was carried out this year.

Largactil still proves to be the most effective of the tranquillizers, particularly when combined with E.C.T. Good results were obtained with Nardil in depressive states. A controlled trial of Melleril is now being carried out and the results will be published in due course. The results, so far, have been encouraging.

17.4. Occupational therapy still continues to be of the greatest value in the treatment of the mentally sick. Amongst the forms of occupational therapy may be mentioned the growing of maize, beans and vegetables, the husbandry of pigs and chickens, carpentry and masonry, raffia work and basket making.

17.5. Isanga Institution has been under the control and administration of the Ministry for the whole of 1960. The Ministry of Home Affairs continued to hold responsibility for legal matters relating to special category mental patients. Most of the problems and difficulties that were encountered during the change-over from Prisons administration to Health have now been overcome.

Two hundred and thirty-six patients remained in Isanga at the end of 1960, an increase of 11 over the end of 1959. Of 36 prisoners discharged during 1960, a figure which compared with 50 in 1959, 10 were transferred to Mirembe on completion of their sentences. Twenty were returned to prison to complete their sentences, 1 was conditionally discharged by the Advisory Board for special category mental patients, 2 were discharged unconditionally on the expiration of their prison sentences, and, in the case of the remaining 3, a *nolle prosequi* was issued by the Attorney-General. There were no escapees during the year.

The general health of patients at Isanga was good and there were no outbreaks of infection.

Various extensions to the male and female sides of the Institution were approved and work commenced towards the end of the year.

18. THE PATHOLOGY LABORATORY SERVICE

18.1. The following is a summary of the annual report of the Central Pathology Laboratory, Dar es Salaam, which is published separately.

18.2. The laboratory services remained in charge of the Senior Pathologist. The establishment available to him consisted of 4 pathologists, 3 laboratory technologists, 2 laboratory technologists training grade posts, 6 senior laboratory assistants and 47 laboratory assistants. Owing to the shortage of staff there was some difficulty in maintaining services. The Senior Pathologist was on leave from June to October, and one pathologist was transferred to Uganda in October; one vacancy was filled in July which left two pathologist vacancies. Technical staff difficulties were created by the opening of the Princess Margaret Hospital, Dar es Salaam, the diversion of two senior laboratory assistants to training grade posts, and the loss of three experienced laboratory assistants—two by transfer to another Ministry. At the end of the year there were 6 laboratory assistant vacancies. The shortage of personnel resulted in a curtailment of some services.

18.3. As in previous years, the central organization of the laboratory services remained in Dar es Salaam, with 8 laboratories at provincial headquarters and smaller laboratories at all district hospitals. In April, the new Princess Margaret Hospital Laboratory was opened in Dar es Salaam and staffed by one senior laboratory assistant, six laboratory assistants, five junior laboratory assistants and one microscopist in training. In practice, this new laboratory acts as an extension to the Central Laboratory and provides facilities for routine technical procedures. All the more advanced clinical pathology including histopathology is referred to the Central Laboratory, but a pathologist visits the hospital laboratory daily for consultant duties. The Central Laboratory continued to provide reference facilities for up-country hospitals and laboratories.

18.4. In addition to the usual training facilities provided for laboratory and medical assistant students full-time higher training was given to two technologist training grade candidates. This additional commitment placed so great a strain on the slender pathologist staff available that it became necessary to revise the policy with regard to the utilisation of Government bursaries for training in the United Kingdom up to the standard of the Intermediate and Final examinations of the Institute of Medical Laboratory Technology. Application was therefore made for award of bursaries to three laboratory assistants with the required experience and educational qualifications. During the year a number of laboratory assistants and junior laboratory assistants from up-country stations attended refresher courses at Dar es Salaam.

18.5. In Dar es Salaam there were increased demands on the facilities for the bacteriology of tuberculosis. The depletion, however, of the technical staff already mentioned necessitated abandoning the original policy of giving every new case of tuberculosis the benefit of culture and sensitivity tests to three drugs. The revised policy introduced the submission of sputa only from cases where resistance is suspect clinically and also from cases first seen in a more advanced stage with cavitation. In addition to this routine work the laboratory continued to carry out the bacteriology for the Tanganyika and Zanzibar hospitals taking part in the M.R.C.—East African Tuberculosis Therapeutic Trials. During the year a new Thiacetazone/Isoniazid trial was started.

18.6. The amount of general bacteriology, apart from that of the myobacterial groups, undertaken at the Central Laboratory, showed that full cultural examinations were made on 3,586 specimens, which was a decrease of about 8 per cent compared with the total examined in the previous year. Sensitivity tests were performed on all pathogens. Last year it was noted that the resistance rate of *Staphylococcus aureus* which had been increasing since 1954 (when 40 per cent of strains isolated were reported as penicillin resistant) had apparently become stationary at 63 per cent. This year, unfortunately, the trend continued and 65 per cent of the strains isolated were resistant to penicillin.

18.7. Funds from a Colonial Development and Welfare Grant were made available for laboratory conversions to provide a Tissue Culture laboratory. The alterations proved lengthy and it was well into the second half of the year before the new laboratory was ready for occupation. The specialised equipment which had been ordered (some on additional Colonial Development Grant) was also subject to delays. A further setback was the transfer of the technician trained in virological procedures to another Ministry. A replacement had therefore to be trained in the specialised techniques, so that no serious tissue culture work was possible during the year though preliminary trials of cultures of human amnion were made. It is confidently expected that in 1961 the Tissue Culture Laboratory will be an active addition to the Laboratory facilities. Isolations of variola-vaccinia virus were made from outbreaks of smallpox in Kondoa, Moshi, Mpwapwa and Tanga. Attempts were made on many occasions to isolate influenza viruses from throat washings of suspected cases, but without success. It is believed therefore that Tanganyika escaped this disease in 1960.

18.8. There was about 20 per cent reduction in general serology during 1960; the decrease was noted for both African and non-African sera, though greater in the latter, but since the number of presumptive positive results showed an increase over last year it can only be concluded that this test was requested with more discrimination than formerly. The standard Widal tests in Dar es Salaam numbered 829 while 3,106 were performed in provincial laboratories. The Paul Bunnell test was performed on 19 sera. All were negative.

18.9. In the serological tests for syphilis there was a decrease in the number of positive sera encountered. This was shown in the Kahn, P.O.R., and Wasserman tests used on all sera and cannot therefore be due to decreased sensitivity. Whether it is the result of intensive treatment in the past or to extensive use of penicillin for infections in general is a matter for conjecture. It will be of interest to see whether this trend will continue. Biological false positive S.T.S. are well known and some authorities suggest that pregnancy may be a cause. An investigation was therefore carried out on about 1,000 pregnant women attending the Maternity Clinic for the first time and their sera was tested in parallel with the sera of their husbands. The results suggest that pregnancy *per se* can only be an insignificant cause of biological false positive S.T.S. There was, however, an approximately 5/1 increased incidence of positivity in the women whose husbands were positive, which is to be expected.

18.10 General policy in regard to the blood bank and the British Red Cross Donor organization was detailed in the 1959 annual report. During the year under review the donor panels proved to be adequate in respect of European and Asian blood requirements. The African panel of donors was increased, but it was still inadequate for surgical needs. Facilities for blood transfusion and pregnancy serology were augmented outside Dar es Salaam by the introduction of Eldoncards. In Dar es Salaam there was only a slight increase over the 1959 figures for blood grouping and cross-matching tests.

18.11. Extensive use was made of the haematology department in technical and consultant investigations. The investigation into common anaemias was concluded in August, and a full account of this trial will be published later.

18.12. The amount of biochemistry undertaken showed an increase of about 10 per cent over that of the previous year.

18.13. The number of biopsies was 2,761 compared with 2,504 in the previous year. An analysis was made of the malignant and locally malignant tumours from Africans and a separate analysis was made in respect of African children. The latter demonstrated a relatively high incidence of the lymphoma group of neoplasms which accounted for more than half the malignant tumours.

18.14. Public Health investigations included the bacteriological control of the Dar es Salaam water supply, the examination of water samples from other township authorities and from private wells. There were 1,065 tins of canned food submitted for bacteriological examination.

18.15. The Central Laboratory remained responsible for the storage and issues of viable and labile vaccines. Issues of vaccine lymph which is obtained from the Medical Research Laboratory, Nairobi, amounted to 1,986,681 doses. A recording thermometer was fitted to the main lymph storage deep-freezer. Maintenance of the eight provincial deep-freeze lymph storage centres continued. Yellow fever vaccine issues amounted to 18,300 dose and poliomyelitis vaccine 5,941 doses. An extensive outbreak of dog and jackal rabies in the Southern Highlands, Western and Lake Provinces resulted in the issue of 481 courses of anti-rabies vaccine together with 1,260 cc. of anti-rabies serum.

18.16. The eight provincial laboratories continued to provide technical services for the main provincial hospitals, and also maintained training facilities for microscopists. The large volume of work handled by those laboratories is reflected in the total number of laboratory examinations undertaken during the year which amounted to 215,666.

19. RESEARCH

Reference is made elsewhere in the report to the research work carried out by officers of the malaria service and of the sleeping sickness service, and to the tuberculosis therapy trials being carried out at Kibongoto, Nachingwea, Tanga, the Infectious Diseases Hospital Dar es Salaam and the Central Pathology Laboratory.

At the Chazi Leprosarium investigations started in 1959 on the use of "Etisul" to determine the long-term value of short period treatment were continued. Further observation of cases is necessary but preliminary information suggests that in combination with sulphones, "Etisul" is capable of shortening the period required for the institutional treatment of the lepromatous patient.

At Morogoro "Entamide Furoate" was exhibited to some 50 patients with acute amoebic dysentery and the results were satisfactory. They have been described in a paper submitted for publication. Also in Morogoro a protein minor acid compound was used in trials on kwashiorkor patients. The trials were abandoned owing to the effect of the compound in increasing diarrhoea.

20. CENTRAL MEDICAL STORES

The Central Medical Stores continued to be under the charge of the Chief Storekeeper. The organisation operated under difficulties throughout the year partly because of a series of leaves of senior members of the staff and partly because of the constant increase in issues from the store.

The report and recommendations of the Organization and Methods team were received early in the year. One recommendation, the creation of an additional senior post, was implemented, but the benefit of this addition was offset by staff leaves and the additional volume of work referred to above. It has not as yet been possible to implement other recommendations of the team.

The workshops of the repair and recovery section continued to function. As soon as additional accommodation is provided at the Princess Margaret Hospital the section will be moved to that hospital which provides much of the work of the section. This move will have the added advantage of freeing much needed storage space in Medical Stores.

21. THE REPORTS OF THE CLINICAL SPECIALISTS

21.1. MEDICAL SPECIALISTS

21.1.1. At the beginning of the year both medical specialists were stationed in Dar es Salaam. In the second half of the year the Senior Specialist proceeded on leave pending retirement and has not as yet been replaced. As a result it has not been possible for a medical specialist to tour and up-country visits have been limited to emergency calls.

21.1.2. The number of medical interns in residence varied and in general was below the desired number.

21.1.3. The move to the new Princess Margaret Hospital provided better working conditions and more adequate space, particularly in accommodation for children, but the limited staff available made it difficult to take the fullest advantage of these improvements.

21.1.4. With particular reference to leprosy, the medical specialist reports—"The longer one works with Sulphone the less one feels that it is highly effective. There are many cases who have been under treatment for 10 years and show very little benefit. I personally doubt the wisdom of discharging anyone as cured, and feel that even where a cure appears to have been achieved therapy should be continued."

21.2. SURGICAL SPECIALISTS

21.2.1. With the opening of the Princess Margaret Hospital in April, 1960 the number of surgical and gynaecological beds for Grade IV patients increased from 160 to 250. These beds were soon fully occupied and remained so throughout the remainder of the year.

21.2.2. Senior staff varied throughout the year. Thus in September a third surgical specialist was posted to Dar es Salaam, but this increase was offset by the Senior Specialist proceeding on vacation leave in November. In addition the medical officers in charge of gynaecological work and of ear, nose and throat work both proceeded on vacation leave in the course of the year.

21.2.3. Although an adequate complement of three preregistration house surgeons was maintained during the year, apart from one month, the greatest of difficulty was experienced in providing staff at the "registrar" level.

21.2.4. The present staff position made it only possible to bring two of the four operating theatres into regular use: 3,031 operations were carried out in the main theatres in 1960 as compared with 2,830 in 1959, but the number of operations in the casualty theatre dropped from 1,824 to 745 in the same period and operations at Ocean Road Hospital from 847 to 676.

21.2.5. The number of old poliomyelitis cases from Dar es Salaam and elsewhere referred for treatment continued to increase and the British Red Cross Society continued to give assistance in the provision of surgical appliances for such patients and for amputees.

21.2.6. New cases of bone and joint tuberculosis under treatment increased from 18 in 1959 to 32 in 1960, and eight cases of pulmonary tuberculosis were treated by thoracoplasty.

21.2.7. Eighteen cases of head injury were dealt with and one cerebral tumour was successfully removed.

21.2.8. Radium was used in fourteen cases.

21.3. OPHTHALMIC SPECIALIST

21.3.1. Throughout the year there was one Ophthalmic Specialist in Dar es Salaam. In spite of the amount of work in Dar es Salaam he found time to visit Tanga and other up-country stations on several occasions.

21.3.2. Ophthalmic operations, in particular for cataract, showed a steady increase, but the use of zonulysin has been discontinued because of unsatisfactory reports from elsewhere.

21.3.3. The ophthalmic surgeon comments that trachoma, although still present, is far less common in Dar es Salaam than it was eleven years ago.

21.4. SPECIALIST ANAESTHETIST

21.4.1. Throughout the year the Specialist Anaesthetist was stationed in Dar es Salaam and was assisted by the full time services of an officer with considerable anaesthetic experience. Nevertheless, the opening of the Princess Margaret Hospital and the posting of a third specialist surgeon to Dar es Salaam threw considerable strain on the anaesthetic service in spite of the greatly improved working conditions.

21.4.2. Fluothane administered with the Fluotec apparatus has been used extensively, and has been found to be very valuable and economical. Unfortunately, it can only be used satisfactorily by specialist personnel.

21.5. RADIOLOGICAL SPECIALIST

21.5.1. Throughout the year there has been a specialist radiologist stationed in Dar es Salaam assisted by an adequate staff of radiographers.

21.5.2. New X-ray units were installed in the Princess Margaret Hospital and in the Ocean Road Hospital, the latter after some delay.

The amount of work undertaken by the radiological service showed a considerable increase during the year and the staff were kept working at full capacity.

22. TRAINING OF PERSONNEL

22.1. As mentioned in the 1959 Report, all Government training, with the exception of the training of health nurses and rural medical aids, is now concentrated in Dar es Salaam. The second Health Nurses Training School at Tanga was opened during the year and as a result it should now be possible to double the output of this cadre of staff.

22.2. An offer was made by Professor Geigy of the University of Basle, acting on behalf of a consortium of Swiss drug manufacturers, to provide assistance with training of medical auxiliary staff. After prolonged discussion it was decided that this assistance could best be utilized at this time in the field of training of rural medical aids. Plans were prepared for the establishment of a training school for this purpose at Ifakara in Eastern Province, and it is intended that rural medical aid students attending the Government training course should spend three months of the second year of their course at this unit which will be staffed entirely by personnel either brought out from Switzerland or specially recruited for the purpose by Professor Geigy.

22.3. *Medical Assistants*

During 1960, 21 medical assistant trainees from the Princess Margaret Training Centre successfully completed their training; a slight improvement on last year's figure but still a very small output particularly when viewed in conjunction with the present wastage amongst the assistant grades of staff generally due to recruitment to other more attractive lines of government service which appear to offer better chances for promotion, particularly the Provincial Administration. The other centre training medical assistants, the Lutheran Mission Hospital at Bumbuli, produced 9 medical assistants during the year.

22.4. *Dental Assistants*

The fourth batch of dental assistants, three in number, successfully completed their training during 1960 bringing the number in service to 18. The dental assistants already in service continued to do extremely valuable work, but it has been found that for the time being the demand for dental services at this level is almost saturated. After an initial extremely busy period almost all dental assistants in the field, while fully occupied, are by no means over-extended. In these circumstances, the programme for the training of dental assistants has been reviewed and it is intended, for the time being, to discontinue training at this level and to introduce as soon as possible upgrading courses for assistants already qualified and, in due course, a four-year course of training for the qualification of assistant dental surgeon.

22.5. *Nurses*

There were, during 1960, 211 student nurses in training at the Princess Margaret (School of Nursing) Dar es Salaam, which is now the only government institution for the training of nurses; of these 67 completed their course successfully. Events have proved that the good results to be hoped for as a result of the concentration of all nursing training in Dar es Salaam have been attained, and there is little doubt that the present system leads to a better product than the former "block" system.

22.5.2. In addition to the nursing students, there were in Dar es Salaam during the year 42 midwifery students all of whom had previously completed their nursing training; 39 of them succeeded in qualifying as midwives.

22.5.3. In addition to the output from the government training centres, 86 nurses and 22 midwives successfully completed their training in various voluntary agency training schools.

22.5.4. The policy whereby selected girls who had completed their nursing training in Tanganyika are sent to the United Kingdom for further training to enable them to qualify for admission to Part "A" of the Nursing Register continued. A total of four girls were selected for this training. Of these three had already completed their Tanganyika nursing course, while one who had not completed this course but who was educationally qualified direct for entrance on the United Kingdom training course was also sent. In addition to the nurses sent to the United Kingdom for training under government auspices, a number of other girls under arrangements made by the Tanganyika Branch of the British Red Cross Society, were found places in United Kingdom hospitals, paying their own fares to the United Kingdom. Towards the end of 1960 plans were made for an up-grading course to be held locally to enable suitable Tanganyika registered nurses to be fitted for appointment to the more senior nursing posts.

22.6. Health Nurses

As already mentioned, the new Health Nurse Training School at Tanga has been opened and was in operation during the year. No output from this school can be expected until the end of 1961, but 15 health nurses successfully completed their course of training at Tukuyu during the year.

22.7. Rural Medical Aids

The training of this cadre of staff continued on the same basis as in the past. Seventy-seven students were in training at government institutions during the year, the first year at Mwanza and the second year at selected hospitals throughout the country. In addition, 36 students were in training at the Mission Centre at Minaki and 25 at the Mission Centre at Mnero. A total of 46 students completed their course of training successfully, 28 from government sources, 14 from Minaki and 4 from Mnero. All those students qualifying from the government school were found employment with native authorities.

22.8. Village Midwives

22.8.1. As in previous years, training of this group was carried out at four Government centres in the territory and at several mission centres. Twenty-seven students completed their course successfully during the year.

22.8.2. There is a considerable demand for this category of staff, but in spite of this the government schools in particular were not filled to capacity due to some difficulty in recruiting suitable persons for this training. It is considered important that student village midwives should be women of some maturity and suitable recruits are not easy to find.

22.9. Assistant Health Inspectors

There was a total of 38 assistant health inspectors in training at Dar es Salaam, and 10 students qualified during the year either by passing the examination of the Tanganyika Medical Training Board or by passing the examination of the Royal Society for the Promotion of Health.

22.10. Other Assistants

The training of pharmaceutical, laboratory and hospital steward assistants continued as in previous years and 3, 3, and 1 in each category respectively succeeded in passing qualifying examinations at the end of the year.

22.11. Training Grade Posts

The programme, whereby selected officers already in the service of the Ministry are permitted to train for more senior posts in the service, continued. Five Training Grade Health Inspectors continued their training and a further 5 commenced training towards the middle of 1960. Similarly, one Malaria Field Officer continued training and a second one entered on a similar course of training. Of the two Training Grade Laboratory Technologists, one continued his training in Dar es Salaam, but a second one who was educationally

qualified for admittance to the A.I.M.L.T. examination was selected for training in the United Kingdom, as were two other Laboratory Assistants who were also selected for admission to the training grade for this purpose. Mention has already been made of the proposal that a number of locally registered nurses should be given an opportunity of further training and arrangements were made to use the training grade procedure for this purpose.

22.12. The following table sets out the numbers of the various categories of trainees in government and voluntary agency centres who passed the final qualifying examination in 1960:—

							<i>Government Training Centres</i>	<i>Mission Training Centres</i>
Medical Assistants	...	...	...	...	...	...	21	9
Dental Assistants	...	...	...	...	...	...	3	—
Laboratory Assistants	...	...	...	...	...	...	3	—
Pharmaceutical Assistants	...	...	...	...	...	...	3	—
Hospital Steward Assistants	...	...	...	...	...	...	1	—
Rural Medical Aids	...	...	...	...	...	...	28	18
Assistant Health Inspectors	...	...	...	...	...	...	10	—
Health Nurses	...	...	...	...	...	...	15	—
Nurses	...	...	...	...	...	...	67	86
Midwives	...	...	...	...	...	...	39	32
							<hr/> 190	<hr/> 145

22.13. The Nurses and Midwives Council established under the Nurses and Midwives Ordinance, 1952, is responsible for all matters relating to the training of nurses and midwives and for the maintenance of the register of qualified persons. The Tanganyika Medical Training Board is responsible for regulating the training and examination of the other types of personnel mentioned above.

23. MEDICAL SERVICES PROVIDED BY VOLUNTARY AGENCIES

13.1. As in previous years the Christian Churches and Missions made a most important contribution to the medical services of the territory. Assistance from Government in the form of direct grants-in-aid, and of the issue of drugs for the treatment of tuberculosis and leprosy, was increased in 1960, but the voluntary agencies continue to provide from their own funds and from the collection of fees the major part of the cost of maintaining their medical work. A summary of the amounts paid by Government in the form of direct subsidies over the last five years is given below:—

	1955/56	1956/57	1957/58	1958/59	1959/60
	£	£	£	£	£
Staff Grants	67,341	71,335	79,350	83,235	86,228
Training Grants	12,400	14,195	16,636	18,272	22,888
Hospital Additional Grants	21,272	20,597	25,670	27,372	27,648
	<hr/> 101,013	<hr/> 106,127	<hr/> 121,656	<hr/> 128,879	<hr/> 136,764

A brief account of the medical services provided in 1960 by the voluntary agencies in each province is given below.

23.2. CENTRAL PROVINCE

The Church Missionary Society, The Augustana Lutheran Mission and the Medical Missionaries of Mary were all active in this province.

The Church Missionary Society has hospitals under the charge of doctors at Mvumi (Dodoma), and Kilimatinde (Manyoni), dispensaries and clinics at Kongwa and Mpwapwa and a leprosarium at Makutupora. At Mvumi work was started on a block of six private female wards (Grade I) with a Grade I labour ward; on the provision of water-borne sanitation for all wards, and on the installation of an electric generator. Training of nurses and midwives continued in co-operation with the Kilimatinde hospital which acted as an ancillary training centre, and the high standard of results which has come to be expected of this combined training school was maintained, twenty-five nurses and seventeen nurse/midwives being successful in the territorial qualifying examinations at the end of the year.

From Kilimatinde, which has the only doctor in Manyoni District, a drop in admissions was reported except towards the end of the year. The purchase of additional laboratory equipment and the appointment of a medical assistant with laboratory experience resulted in improved standards of diagnosis, and blood transfusion was introduced for the first time with a good panel of donors collected as a result of vigorous propaganda.

Supervision of the Makutupora Leprosarium was exercised by the doctor from Kilimatinde, and patients requiring other than minor surgical procedures were transferred to the hospital for operation. This leprosarium urgently requires replacement, and a new site has been allocated near the Hombolo dam. It is expected that building will start in 1961.

The clinics at Kongwa and Mpwapwa were supervised by a nursing sister resident at Kongwa. As was to be expected, work at Mpwapwa increased during 1960 whilst at Kongwa there was a drop in the number of confinements. Throughout the medical units of this mission emphasis on the teaching of child welfare, nutrition and hygiene was increased.

The Augustana Lutheran Mission maintained at Kiomboi and Iambi the only hospitals in the Iramba District, as well as the new leprosarium at Iambi and thirteen dispensaries. At Kiomboi a new twenty bed maternity unit was completed, and the hospital also benefited greatly from the provision of a more adequate piped water supply. This hospital is a training centre for nurses, and twelve candidates were successful in the territorial examinations.

Trouble with the generating plant at Iambi resulted in that hospital being without X-ray facilities throughout the greater part of 1960, but the mission hopes to provide a new plant next year, when it is also expected that a piped water supply will be installed. The new leprosarium was formally opened and dedicated in September, but was actually in operation throughout the year. It has excellent buildings and adequate water supply, with arable land to accommodate a minimum of five hundred patients. Approximately four hundred were treated as in-patients in 1960, whilst an increasing number received treatment as out-patients at Iambi and Kiomboi hospitals and six dispensaries.

The thirteen dispensaries maintained by the Augustana Lutheran Mission in Singida and Iambi Districts were supervised by two nursing sisters. Of these dispensaries, three were under the charge of medical assistants, four had rural medical aids, and the remainder were staffed by tribal dressers.

The hospital at Makiungu in Singida District run by the *Medical Missionaries of Mary* is a comparatively new hospital established in 1954, and expansion has continued gradually since that time. In 1960 part of a new ward block was completed, providing for a further twenty-four beds, and there was a considerable increase in in-patient admissions. A leprosy clinic was started at the hospital in February.

23.2. EASTERN PROVINCE

The Church Missionary Society, the Capuchins, the Universities Mission to Central Africa, and the Danish Lutheran Mission all have hospitals in this province.

The Church Missionary Society hospital at Berega in Kilosa District had a difficult year. An increase in admissions over the past three years was accentuated by the introduction of free treatment, an agreement having been made whereby the Native Authority paid a subsidy to the Mission for this purpose. The result was a serious strain on both in-patient facilities and on the small staff. There was reorganization of the existing buildings to accommodate an increased number of beds, but new tuberculosis and children's wards in particular are badly needed. Valuable work in maternal and child care was carried out in difficult circumstances.

During the year the decision was taken by the mission authorities that the Minaki hospital which has for many years been maintained by the *Universities Missions to Central Africa* in Kisarawe District should be closed at the end of 1961 when training of the present course of rural medical aids would be completed. The decision, understandable and indeed probably inevitable as it was, has been a matter of widespread regret since this old and well known hospital has done much good pioneer work, particularly in the field of training.

At Ifakara in Ulanga District the new hospital with 180 to 200 beds built by the *Capuchin Mission* was formally opened by His Excellency the Governor in October. This hospital replaces another run by the mission for many years, and is an excellent, well equipped unit.

The nursing staff of nuns was increased, and the amount of surgical work performed was impressive. Pulmonary tuberculosis was the cause of morbidity giving rise to most concern, and plans were made for the building of a 100 bed tuberculosis unit to start at the end of 1961 or early 1962. A leprosarium run in conjunction with the hospital had 120 patients resident at the end of 1960, and the doctor reported an increased number of leprosy patients on out-patient treatment.

Nursing sisters of the Capuchin Order were in charge of mission dispensaries at Sofi, Mtimbira, Kwirow, Igota and Sali in Ulanga District, Msimbazi in Dar es Salaam and Kipatimu in Kilwa District in the Southern Province. In addition, the mission ran nine dispensaries or first aid posts in Ulanga District. His duties in the Ifakara hospital made it impossible for the doctor to give regular supervision to these units.

At Lugala in Ulanga District development of a new hospital by the *Danish Lutheran Mission* continued. A new ward block and a laundry were completed and electric light installed, while an operating theatre and staff quarters were under construction, and additional qualified African staff were appointed. The annual report of the hospital showed that the volume of work varied greatly with the season. There was emphasis on surgery and gynaecology, and more than 200 operations, exclusive of minor surgical procedures, were performed during the year.

In addition to the medical work described above, there were in the Eastern Province a number of dispensaries run by voluntary agencies which did not have the services of a doctor. At Maneromango in Kisarawe District the *Lutheran Mission* ran a dispensary and maternity unit staffed by a medical assistant and nursing sister. *Catholic missions* maintained a large number of dispensaries and first aid posts in Morogoro and Bagamoyo Districts, the majority of which had no qualified staff. *The Elim Mission* moved early in the year from Morogoro District to Msolwa in Bagamoyo District where a dispensary under the charge of a nurse was run three days weekly and attracted large attendances.

23.4. LAKE PROVINCE

Medical work in this Province was carried out by the Africa Inland Mission, the Catholic Church of the Diocese of Mwanza, the Mennonite Mission and the Maryknoll Sisters.

At Kola Ndoto in Shinyanga District the *Africa Inland Mission* hospital had a busy year, with increased numbers of out-patients and of in-patient admissions. At the training centre for male and female nurses an additional dormitory for female students was completed during the year and an ablutions block for the male ward was provided at the hospital. The doctor in charge reported little change in the disease pattern in 1960, apart from an unusual number of cases of infectious hepatitis and a number of cases apparently of O'nyong-nyong fever in June, July and August.

At the leprosarium run in association with the hospital there were approximately 800 patients resident. About two-thirds of these were tuberculosis cases remaining at Kola Ndoto because of difficulties in obtaining treatment in their home areas. A new ward was under construction at the leprosarium hospital.

In addition to the principal work at Kola Ndoto the Africa Inland Mission maintained dispensaries in Kwimba, Geita, Maswa and Ukerewe District; one new dispensary being opened during the year on Ukara Island.

In the *Catholic Diocese of Mwanza* there was much medical activity during 1960. Hospitals were maintained at Sumve (Kwimba), Kagunguli (Ukerewe) and Bukumbi (Mwanza); the last being a new hospital with two wards already in use and a theatre unit under construction. Building of another hospital at Sengerema in Geita District continued throughout the year, and it is expected that this hospital will be ready to receive in-patients early in 1961. At Kibara on the Ukerewe District mainland a fifth hospital was started with the aid of a building grant from the Native Authority, and is expected to be ready by the end of 1961.

At Kagunguli hospital on Ukerewe Island building of a new maternity unit was started in September. A grant from the Native Authority made it possible for all maternity and child welfare services to be given free of charge, and this resulted in a considerable increase in the use of these services although the doctor reports that there was still strong resistance to the idea of clinical deliveries.

There were two doctors at the *Menmonite* hospital at Shirati in North Mara District, and a nursing training school was opened at the beginning of the year. A leprosarium run in association with the hospital was under the charge of a nursing sister, and a busy maternity and child welfare clinic and bedded dispensary at Nyabasi was also under the immediate charge of a nursing sister and supervised from Shirati.

Also in North Mara District the *Maryknoll Sisters* had their main medical station at Kowak where, with a doctor in charge, the dispensary and maternity unit was being developed, a new female ward having been completed and in-patient work started.

23.5. NORTHERN PROVINCE

In the Northern Province the Lutheran Church of Northern Tanganyika, the Medical Missionaries of Mary, the Norwegian Lutherans and Holy Ghost Fathers were all active in medical work during 1960.

The Lutheran Church of Northern Tanganyika maintained 14 medical units in the Northern Province as well as 6 in the Tanga Province. For the first eleven months of the year only one doctor, resident at Machame and very fully occupied at that hospital, was available for supervision of these medical services. At Machame Hospital (Moshi) building of a two-storey building was started to house a new out-patient department, ante-natal and child welfare clinic, laboratory and drug store, with wards for 38 beds on the upper floor. These additions are urgently needed as the hospital was greatly overcrowded during the year, the number of admissions exceeding by 300 those in 1959.

In November a doctor was appointed for the first time to the bedded dispensary at Nkoaranga in Arusha District, thus raising it to the status of a hospital. This appointment will meet a much needed want as the unit is a busy one which should benefit greatly from the presence of a resident doctor. Bedded dispensaries were also maintained at Marangu where, under the charge of two nursing sisters the work was mainly among women and children, Karatu, Selian, Leguruki, Masama and old Moshi. A new out-patient dispensary was opened at Endaleh and a mobile medical unit operated in the northern Masai area.

Ndareda Hospital of the *Medical Missionaries of Mary* in Mbulu District ran under considerable pressure throughout the year. The approved establishment of beds was raised to 81, but even so the daily average of in-patients amounted to 83.4 as compared with 73.2 in 1959. The hospital with 8 beds allocated to tuberculosis patients co-operated fully in the district anti-tuberculosis scheme and the appointment of a second doctor with experience in tuberculosis work was of great assistance. A nurses training school was opened in 1959, and in 1960 new student dormitories were completed and work started on a pharmacy and laboratory adjoining the out-patient department. Six satellite dispensaries were supervised from Ndareda and at one of these a leprosy clinic was started to deal with what appears to be a focus of infection among the Wabugwe.

Also in Mbulu District, the *Norwegian Lutheran* hospital at Haydom, an isolated position in the cattle country, had a comparatively quiet year with no epidemics. The doctor reports gradual increase in the number of mothers coming to the hospital for normal deliveries as compared with previous years when the majority of maternity cases reporting were those with complications. Subsidiary dispensaries with maternity units were operated by the Mission at Karatu and Dongabesh.

The Holy Ghost Fathers of the Northern Province had no doctor but operated a number of dispensaries (some of them quite large bedded units) in Moshi and Arusha Districts and also in Masailand where six Catholic dispensaries have been established.

23.6. SOUTHERN PROVINCE

A high proportion of the medical services in Southern Province is provided by voluntary agencies and the importance of their work can hardly be over-emphasised. Those participating in these services are the Universities Missions to Central Africa in the dioceses of Masasi and South West Tanganyika, the Benedictines of the Abbacies of Ndanda and Peramiho, the Christian Missions in Many Lands, and the Catholic Mission at Kipatimu in the North West of Kilwa District.

In the Diocese of Masasi the *Universities Missions to Central Africa* have hospitals at Masasi, Lulindi and Newala, as well as dispensaries at Chidya, Namasakata, Mindu, Luatala, Mnyambe and Tandatimba. The Mkomaindo Hospital, Masasi, located near the District Headquarters, had a busy year with an overflow of patients to temporary beds on ward verandahs during the latter months. The epidemic of meningococcal meningitis described

earlier in this report had resulted in the admission of 79 cases up to the end of November. Measles and whooping cough were also prevalent. This hospital, in common with other voluntary agency hospitals in the Southern Province, co-operated fully with the Government medical services in the Provincial anti-tuberculosis schemes, but Mkomaindo has no X-ray plant and some difficulty was experienced in arranging transport to the Government hospital at Nachingwea of patients requiring X-ray.

Lulindi and Newala hospitals both suffered from the cyclone of December, 1959, damage being most severe at Newala. Rebuilding and repairs at both hospitals went on through 1960. Lulindi was much affected by the outbreak of meningococcal meningitis, cases totalling 160 by the end of the year, and here also whooping cough and measles were very prevalent. The work of the tuberculosis unit (24 beds) was hampered by the breakdown of the X-ray machine in December, 1959 and the failure of attempts at repair, and difficulties over transport arrangements meant that for a large part of the year patients had to be treated on clinical signs alone. This hospital forms the base hospital for a leprosy treatment organization with out-patient treatment clinics operating at Newala, Luatala, Tandatimba and Mnyambe. It has also a training school for nurses from which six students (a record number for the hospital) were successful in the Territorial qualifying examinations. At Newala the training of village midwives continued and expansion of midwifery work made it possible for an increase in the number of students to be authorized.

The main medical work of the *Benedictine Mission in the Abbey of Ndanda* is carried out in the hospitals at Ndanda (Masasi), Mnero (Ruponda) and Nyangao (Lindi). The largest of these is the Ndanda hospital which employed 3 doctors in 1960 and has a large leprosarium nearby as well as a 60-bed tuberculosis unit and a training school for midwives. This hospital also was affected by the epidemic of meningococcal meningitis with 61 admissions between July and October. The tuberculosis unit was filled to capacity during the year, and out-patient treatment of an average of 100 patients was carried out at Ndanda itself and at 6 out-stations. At the Mwena Leprosarium some 550 patients were under treatment and great assistance was received from the German Leprosy Association (DAHW) which provided 2 lay helpers, a trained builder and a plumber/mechanic, and funds for a start to be made on a long term building plan for the leprosarium.

From the Mnero hospital now entering its second decade a uniform flow of work was reported in contradistinction to the seasonal variation of earlier years, whilst a change in the pattern of disease presenting was also noted—tuberculosis and gonorrhoea showing a remarkable increase whilst yaws, previously one of the commonest infections, was almost a rarity. A new general ward provided 14 extra beds and a temporary children's ward was also added by modification of a new administration block designed to accommodate an ante-natal and child welfare clinic. Despite these increases the volume of work was such that overcrowding of wards could not be avoided. Training of nurses ceased at Mnero in 1959 and the hospital provided a training school for Rural Medical Aids only in 1960 the first students from this school sitting the qualifying examinations in December.

At Nyangao hospital in Lindi District there was a daily average of 76 in-patients. An X-ray plant was installed in October and the 20 beds allocated to tuberculosis patients were nearly always occupied, there being a turn-over of 93 patients during the year. Here again the epidemic of meningococcal meningitis was felt, with its peak in the month of October.

The hospital provided at Mbasa in Tunduru District by the *Christian Missions in Many Lands* was in operation in 1960 although the hospital is not yet fully completed. The need to withdraw the medical officer from the small Government hospital at Tunduru meant that the doctor-in-charge at Mbasa was the only medical practitioner in the district. This Mission also maintained a dispensary and clinic in Kilwa.

In the extreme west of the Province the *Universities Missions to Central Africa of the Diocese of South West Tanganyika* maintain a small hospital at Liuli on the shores of Lake Nyasa. There is a nearby leprosarium at Mngehe and out-patient dispensaries at Kwambe, Mkilia and Chiulu. The installation of an X-ray plant early in 1960 enabled the hospital to be included in the Songea anti-tuberculosis scheme with provision of free drugs and of grants by Government.

The *Benedictine* nuns in the *Roman Catholic Abbey of Peramiho* continued to be responsible for wideflung medical services in Songea District extending into Njombe District in the Southern Highlands Province. The main medical centre is at Peramiho but there are also 15 other medical units in Songea District, some of them very large bedded dispensaries, as well as the Morogoro Litisha Leprosarium run in conjunction with the Peramiho hospital.

For the first time the hospital had 3 doctors throughout the year, one being in charge of the out-patient department and the Morogoro-Litisha leprosarium with some 580 patients, as well as supervision of the many Benedictine medical units in the District. The second doctor looked after the general hospital in-patients, whilst the third was in charge of the 60-bed tuberculosis unit and supervision of tuberculosis out-patient treatment at other mission stations.

A new X-ray machine was installed in March and proved of great benefit.

The hospital had a very busy year with increased numbers of patients treated in both the general and tuberculosis units. Training of nurses continued and 15 out of 17 candidates were successful in the qualifying examinations in December.

At the end of the year a doctor arrived who will be appointed to the large bedded dispensary at Litembo thus raising it to hospital status. New buildings were provided at several other existing dispensaries, whilst new medical units were opened at seven other stations, the largest being at Mbinga where a 40-bed dispensary and maternity clinic was completed and placed under the charge of a nursing sister.

23.7. SOUTHERN HIGHLANDS PROVINCE

In the Southern Highlands Province voluntary agency medical work in 1960 was carried out by a number of Christian agencies, the Baptist Mission of East Africa, the Lutheran Church of Southern Tanganyika, the Finnish Missionary Society, the Benedictines, the the Universities Missions to Central Africa, the Consolata Fathers, the White Fathers and the Moravian Mission.

The new *Baptist* tuberculosis hospital at Mbeya started to receive in-patients in January and a total of 396 were admitted during the year, with 285 discharged for follow-up as out-patients. Altogether some 6,000 patients were treated in the out-patient clinic, and it is hoped in 1961 to improve the follow-up organization by provision of a mobile dispensary.

The Ilembula hospital of the *Lutheran Church of Southern Tanganyika* (Njombe) was without a doctor from March to June after which it had the services of two medical practitioners. A new out-patient department was under construction and electric light was provided in the hospital, whilst an X-ray plant arrived in November. Bedded dispensaries at Kidugala, Ilula and Pommern, each under the charge of a nursing sister, and four out-patient dispensaries were supervised by the Ilembula doctors.

At the end of 1959 the *Finnish Missionary Society* recommenced medical work at Itete in Rungwe District after a lapse of two decades, and in February, 1960, a doctor arrived. Construction of a new hospital proceeded during the year; an administration and theatre block, and one ward being completed, though not fully equipped, and in-patients were accepted from March and referred where necessary for operations to the Government hospitals at Tukuyu or Mbeya. Supervision of one dispensary in Njombe District and two in Rungwe which had previously been visited when possible by the doctor from Ilembula was taken over by the Itete doctor.

The medical work of the Abbey of Peramiho in Songea District in the Southern Province has already been mentioned. In Njombe District the *Benedictines* have a hospital at Lugarawa, with bedded dispensaries at Uwemba, Luilo, Kifanya, Madunda, Sunji and Lupingu. The doctor at Lugarawa reported that the main disease problems encountered in 1960 were amoebiasis and tuberculosis. The building of a 45-bed tuberculosis unit was started at Lugarawa.

Also in Njombe District and supervised by the doctor from Liuli in Songea District were bedded dispensaries at Manda and Milo maintained by the *Universities Missions to Central Africa of the Diocese of South-West Tanganyika*.

The *Consolata Fathers* continued to maintain a hospital in association with their schools and colleges at Tosamaganga near Iringa and another small hospital at Ulete in Iringa District, as well as 17 out-patient dispensaries at other mission stations in the province. At Kisa in Rungwe District a small hospital with resident doctor was established by the *White Fathers*.

At the maternity clinic and bedded dispensary run by the *Moravian Mission* at Mbozi in Mbeya District there was an increase in ante-natal attendances and institutional deliveries. Whooping cough, often complicated with pneumonia, and measles were prevalent causing many deaths among children.

23.8. TANGA PROVINCE

In this province the Universities Missions to Central Africa Diocese of Zanzibar and the Usambara-Digo Lutheran Church have medical organizations under the supervision of doctors resident in the province, whilst bedded dispensaries or out-patient dispensaries are also maintained by the Lutheran Church of Northern Tanganyika, the Church Missionary Society, the Roman Catholic Rosminian Fathers and Holy Ghost Fathers.

At the *Universities Missions to Central Africa* hospital at Magila near Muheza, a new dining room, kitchen, stores and laundry were under construction for the nurses and midwives training school. The doctor reports a busy year in the children's and women's wards and in the maternity unit, but a decline in the number of admissions to the male wards. Nine nurses and eight nurse/midwives were successful in the territorial examinations.

Kideleko hospital (U.M.C.A.) in Handeni District was without a doctor for the second half of the year, being left in charge of a nursing sister as were the bedded dispensaries at Korogwe, Kwa Mkono and Kigongoi. At all these units the emphasis was on maternal and child health work. Ten out-patient dispensaries were also maintained by the Mission in the Tanga, Korogwe and Handeni Districts, and one other at Lewa was closed.

The Hospital and training centre for Medical Assistants at Bumbuli (Lushoto District) forms the main medical centre of the *Lutheran Churches* in the Province, and in addition there are bedded dispensaries at Mlalo and Lutindi, a mental institution at Lutindi, and several smaller dispensaries and leprosy clinics in Lushoto and Handeni Districts. Bumbuli hospital worked to capacity throughout the year with a daily average of 137 in-patients and 100 out-patients. The hospital carried out a wide range of medical activities and there was an increase during 1960 in the scale of the more complex X-ray and laboratory procedures, and a blood bank was instituted. Plans were made for rebuilding a major part of the hospital to start in 1961. Building materials were collected and new staff houses and a students' dormitory were under construction or already completed by the end of the year. A new approach in health education was started, small groups of the African staff holding in the surrounding villages health talks and demonstrations which proved to be popular.

The Medical Assistant Training Centre had an excellent year. All of the third year students were successful in the qualifying examinations, one heading the territorial list of all passes.

There were no major changes in the medical work carried out in the bedded dispensaries maintained by the *Rosminian Fathers* at Gare (Lushoto) and Kwedibara (Handeni), the *Holy Ghost Fathers* at Kilomeni (Pare), the out-patient dispensaries run by the *Church Missionary Society* at Lwande in Handeni District or at the Gonja dispensary of the *Lutheran Church of Northern Tanganyika*.

23.9. WESTERN PROVINCE

Medical work in this province was carried out in 1960 by the Moravian Mission, the White Fathers, the Medical Missionaries of Mary, the Seventh Day Adventists, the Church Missionary Society, the Swedish Free and Swedish Holiness Missions and the Livingstone Memorial Mission.

The *Moravian Mission* has its principal medical unit at Sikonge Hospital in Tabora District. Little change in the pattern of disease was noted in 1960, the respiratory diseases accounting as usual for the greatest number of admissions and deaths. Adjacent to the hospital is the leprosarium financed by the Local Authorities of the Western Province and run by the Mission. Four hundred and twenty-six leprosy patients were resident here at the end of 1960 with a further 238 undergoing out-patient treatment. Bedded dispensaries were maintained under the charge of nursing sisters at Usoke, Ichemba and Kitunda and supervised by the doctors from Sikonge. At Kitunda a new 14-bed ward was added to cope with the increasing number of in-patients.

In the Catholic Diocese of Kigoma the hospital at Kabanga near Kasulu maintained by the *Medical Missionaries of Mary* was completed by the addition of a new wing raising the total accommodation to a capacity of 67 beds. Two mobile X-ray units were received and a new X-ray department and a laundry was constructed. An epidemic of whooping cough in May and June was reported and efforts were made to encourage the people to come for prophylactic injections of whooping cough vaccine. A flare-up of purulent conjunctivitis was notable in September and October. In this diocese there are also bedded dispensaries

and maternity clinics under the charge of nursing sisters of the Order of *White Sisters* at Ujiji, Kakonko and Mabamba. At all of these units the emphasis was on maternity work and general medical supervision was exercised by the Government District Medical Officer.

In the Diocese of Karema the hospital built by the White Fathers at Chala in Ufipa is run by the *Medical Missionaries of Mary*. It is a new hospital and there were no changes in buildings during the year, but an increase in maternity and child health work was reported. Elsewhere in the Diocese the *White Fathers* have a number of dispensaries in Ufipa and Mpanda Districts. The bedded dispensary at Karema was under the charge of a nursing sister, another was under the charge of a trained nurse and the remainder were run by dressers.

The *White Fathers* in the Tabora Diocese maintain medical units in Tabora, Nzega and Kahama Districts. No doctor was employed in 1960. The largest of these units, the bedded dispensary and maternity clinic under the charge of a nursing sister at Ndala in Nzega District had a busy year, particularly in the maternity clinic where there were 532 deliveries. Arrangements were made for the regular transfer of patients requiring hospital treatment to the Government hospital at Nzega.

In Kasulu District the doctor of the *Seventh Day Adventists* hospital at Heri was kept very busy during the outbreak of rabies in the district, treating large numbers of persons who had been bitten, mainly by dogs, but also by cats, cows, goats and a jackal. Altogether 220 cases received a course of rabies injections. A decline in patient statistics was due to a large fall off in the attendance of members of the Wabembe and Warundi after Congolese independence and the subsequent trouble and unrest in the two countries from whence a large number of the Heri patients had previously been drawn.

A doctor was for the first time appointed to the *Swedish Free Mission* which, together with the *Swedish Holiness Mission*, maintains dispensaries in Tabora, Nzega, Kahama, Kibondo, Kasulu and Kigoma Districts. Most of these dispensaries, which were under the charge of nursing sisters were out-patient units with only a few emergency beds, but at the principal medical station at Nkinga where the doctor was stationed extensive building development took place during the year.

The *Church Missionary Society* has a small bedded dispensary under the charge of a nursing sister in Kigoma District and another in Kasulu District, whilst a small dispensary, maternity unit and orphanage is maintained by the *Livingstone Memorial Mission* at Tatanda in Ufipa. The emphasis in all these units was on maternity and child welfare work.

23.10. WEST LAKE

The Church of Swedish Mission, the Church Missionary Society, the Catholic Church in the Diocese of Bukoba and Rutabo all provide medical services in West Lake Province.

The *Church of Sweden* has hospitals at Ndolage in Bukoba District and at Nyakahanga in Karagwe and bedded dispensaries at Rwantege and Kigarama. At the Ndolage hospital which has been training nurses for some years, buildings for a new midwifery school were completed and the foundations laid for a new delivery ward, whilst a new laboratory was in operation throughout the year and provided a high standard of service, including bacteriology. The Nyakahanga hospital staffed by the Mission in buildings provided by the Native Authority was the only hospital in the Karagwe District and continued to act as a district hospital.

At Murgwanza in Ngara District a new administrative/operating theatre block was built in the *Church Missionary Society* hospital.

Also in this district is the *Catholic* hospital at Rulenge where a doctor was again in residence during the latter half of the year.

In Bukoba District *Catholic* hospitals were operated at Kagondo and Rubya. To the former hospital a second doctor was appointed and building during the year included a new staff house and a hall for patients' relatives. This hospital reports 21 cases of a severe pyrexia of uncertain origin which, after consultation with the Virus Research Institute, Entebbe, was suspected to be a Rickettsial fever. Dispensaries at Kashozi, Mugana and Ibwera in Bukoba District were supervised from Kagondo and plans made for the opening of two dispensaries in Karagwe District in 1961.

The *Catholic* Mission hospital at Rubya, also in Bukoba District, had a busy year, particularly on the surgical and radiological side, 273 major operations and over 800 X-ray investigations being performed.

24. RURAL MEDICAL SERVICES

24.1. Medical services in rural areas are, with very few exceptions, provided by units the financial responsibility for which is vested in native authorities. These units are of three types; the largest is the rural health centre which has a medical assistant in charge, assisted by an assistant health inspector and a health nurse, together with dressers, village midwives and subordinate service staff. This unit, which provides limited in-patient accommodation, both general and maternity, of hostel type, functions as a centre for curative and preventive medicine in the area in which it is situated, and the medical assistant is charged with the responsibility for supervising a number of satellite dispensaries. At the next level is Grade "A" dispensary; this unit is normally under the charge of a rural medical aid who has had two years formal training to fit him for this duty. It is primarily a curative centre for out-patient treatment, although at some Grade "A" dispensaries a limited number of hostel and maternity beds is provided. At the lowest level is the Grade "B" dispensary which provides very limited curative facilities and is under the charge of a tribal dresser, a man who has received a short period of practical training at district hospitals before being posted to the dispensary.

24.2. During the year the number of dispensaries, Grade "A" and Grade "B", in the territory increased by 26, and, in addition, several Grade "B" dispensaries were up-graded to Grade "A" status. An additional six rural health centres were opened, bringing the number of these units now functioning to 20, while the construction of several others is far advanced.

24.3. Grade "A" and Grade "B" dispensaries are supervised by regular visits from medical officers or medical assistants. Those dispensaries falling within the orbit of a rural health centre are, as already mentioned, supervised by the medical assistant in charge of the centre who is, in most rural health centres, now provided with a UNICEF landrover to enable him to carry out this duty. The landrover is also used by the health nurse who frequently accompanies the medical assistant on his tours of peripheral dispensaries, holding regular maternity and child welfare clinics at these dispensaries. The vast majority of dispensaries which do not fall within the sphere of influence of a rural health centre are, generally speaking, supervised by government medical staff from district hospitals, although a few native authorities employ medical assistants for this purpose, and in the Mpwapwa and Dodoma Districts of Central Province a medical officer was employed by the joint native authorities as supervisor of dispensaries during 1960, with good results. There is a similar arrangement in the case of the dispensaries of the Chagga Council.

24.4. The financing of this rural medical service is becoming a serious problem; the delay in the implementation of the programme for the opening of rural health centres, which was at the end of 1960 exactly one year behind schedule, although partly due to lack of trained staff, is mainly a result of lack of funds to cover the large capital and recurrent costs of these units. Although equipment, including a landrover, for rural health centres is provided free of charge by UNICEF, the cost of construction of the necessary buildings is now between £6,000 and £10,000, while maintenance and recurrent costs, including the reimbursement to government of the salaries of seconded staff, can amount to between £1,500 and £2,000 per annum.

The present period of financial stringency is also affecting the running of dispensaries. The rural health service is becoming increasingly popular, and everywhere attendances are increasing. In spite of this, in many areas it has been found necessary to reduce the funds available for the running of these units and there are complaints, which are in some cases justifiable, of shortage of drugs.

24.5. In addition to the dispensary services provided by native authorities there are a few bedded dispensaries provided by Government, generally in the more sparsely populated areas or in areas in which the native authority organization is not as yet adequate to permit of the establishment of its own medical units; whenever conditions permit these Government bedded dispensaries are handed over to the native authority. Also there are a few sleeping sickness dispensaries provided and run by Government in areas of maximum sleeping sickness incidence, where there is as yet little or no permanently settled population. In these areas also, as population increases, it is policy for the dispensaries to become general purpose dispensaries and be taken over by the native authority.

24.6. There are also extensive dispensary services operated by the voluntary agencies in many parts of the territory. These units vary from dispensaries of the standard of the native authority Grade "B" dispensary to large bedded dispensaries, some of them with as many as 100 beds but with no resident medical staff. The larger units are usually under the charge of expatriate nursing sisters. Although a medical officer is lacking, there is no doubt that these bedded dispensaries constitute an important addition to medical facilities in rural areas.

25. THE REPORT OF THE GOVERNMENT CHEMIST

25.1. *Organization*

The re-organization mentioned in the report for 1959 was finalized during the year, and as from the 1st July, 1960, no agricultural chemistry was undertaken. When this work ceased, the resources of the laboratories were re-grouped into two main sections, one dealing essentially with foodstuffs and industrial samples and the other with forensic science.

25.2. *Staff*

The staff position deteriorated during the year. In March, one Chemist left on leave pending transfer to Hong Kong, and, to avoid a breakdown in essential services this necessitated the recall of the Chemist previously on secondment to the Veterinary Division of the Ministry of Agriculture and Co-operative Development. The resulting vacancy remained unfilled throughout the remainder of the year. The Government Chemist, W. E. Calton, O.B.E., left the Territory on 10th June on leave pending retirement, thus causing a second vacancy. G. W. Walker acted as Government Chemist for the rest of the year.

One Assistant Chemist returned from leave in May, while a second proceeded on leave in April and resigned while on leave, causing a vacancy which remained unfilled for the rest of the year; the third Assistant Chemist posted to Dar es Salaam was on duty throughout the year, as was the Assistant Chemist seconded to the Veterinary Division of the Ministry of Agriculture and Co-operative Development.

Two long service Chemical Assistants left on transfer to other departments early in the year and a third was promoted to Senior Chemical Assistant. This resulted in there being vacancies for two Chemical Assistants for the greater part of the year, which, although it did not prove possible to fill these vacancies by permanent appointees, were filled for the most time by temporary appointees.

One clerk was promoted and transferred from the laboratories in September, and the vacancy so caused remained unfilled at the end of the year.

25.3. *Summary of the year's working*

The numbers of samples analysed under the various categories are given in the appendix, and although, as has been explained in previous reports, the number of samples dealt with does not necessarily reflect the amount of work involved, general trends are indicated.

A growing interest in nutrition and the quality of foodstuffs is shown by an increase of some two hundred and seventy per cent in the number of samples examined, while the number of industrial and related samples submitted to us rose by some fifty per cent. The number of samples dealt with by the forensic section showed only a slight overall increase over the previous year, but at the close of the year this section had a serious backlog of unexamined samples not included in the summary.

When it is realized that the section dealing with foodstuffs and industrial samples had no increase in staff over previous years and the forensic section was virtually denuded of its experienced staff for part of the year and was never fully staffed with experienced personnel at any time, it will be seen that the laboratories' resources were strained to the limit.

SECTIONAL REPORT

5.4. *Foodstuffs*

The large number of fresh milk samples examined was mainly due to informal samples being submitted by the Medical Officer of Health, Dar es Salaam, during the absence of his technician who normally analyses such samples: the number of formal samples analysed was similar to previous years. Despite the fact that special bottles containing preservative are available so as to enable fresh milk samples to be submitted for analysis from up-country stations, little advantage is taken of the facility. Some eleven per cent of samples of fresh milk tested were found to be below the statutory requirements in respect of one or more constituents.

The tinned milks examined were chiefly submitted by the Customs Authorities, and all samples submitted by them were found to be of satisfactory quality, although a number of samples submitted by the Health authorities from various parts of the territory were found to have deteriorated during storage.

A series of samples representative of the production of each of the territory's sugar factories was analysed.

Samples of cereal flour, mostly maize, were examined for their vitamin B₁ content. It was found that while whole maize flour contained more than 2 parts per million of this essential vitamin, the "sembe" type maize flour, in which the bran and maize germ is removed during the milling process consistently contained less than 0.5 parts per million of vitamin B₁. In view of these results which clearly show the deficiency of vitamin B₁ in locally produced highly refined maize meal, the increasing consumption of this type of flour can only be viewed with alarm by those interested in the practical nutrition problems of Tanganyika, a country where maize is the staple diet of a large proportion of the population. The increased consumption of highly refined maize meal is confirmed by the fact that a number of samples of maize germ meal, destined for export, have been examined during the year.

The vitamin A content of tinned milk was also investigated, and different brands of full cream tinned milks were found to vary considerably in their vitamin content, some being practically devoid of vitamin A. Although the gross nutrient value of tinned milk is strictly controlled by regulations made under the Foods and Drugs Act, there is at present no control of the vitamin content of these products.

Attention has been given to the contribution made to the general diet of the poorer section of the population of the various side dishes and relishes consumed with what is essentially a cereal diet. Cassava leaves, used as a leaf vegetable by some of the population, have been found to make a valuable contribution to the total protein content of the diet, while an investigation, as yet incomplete, into the identity of the amino acids present in the leaf protein indicate that their use may favourably influence the protein quality of the diet.

Two leaf vegetables from Singida District were found to be high in protein and rich sources of beta carotene and vitamin C.

Bottled fruit juice and squashes were examined for their vitamin C content, while informal samples of staple foodstuffs were analysed throughout the year. The majority of informal samples of beans failed to comply with the minimum legal standard of purity. One maize flour was found to have been adulterated with cob meal, and another was contaminated with dyestuff that had been used as a marking ink on the sacks.

The beers and spirituous liquors examined were chiefly submitted by the Excise authorities.

The iodine content of a number of samples of locally produced salt was determined.

25.5. Industrial and related samples

Monthly samples of water from the Mtoni waterworks, Dar es Salaam, showed that a high standard of purity was maintained. Regular examination of the Ruvu source has not yet commenced, but this water is thought to have comparatively little seasonal variation in composition; the occasional samples analysed in the past indicate that it has a high standard of purity.

A number of borehole waters were found to be excessively hard, while others contained excessive quantities of fluorine, although few exceeded 10 parts per million of this constituent. The optimum fluorine content of drinking water is of the order of 1 part per million, and, although adults can tolerate at least 10 parts per million of fluorine in drinking water without untoward effects, a fluorine content in excess of 2 parts per million can lead to unsightly teeth lesions developing in children who habitually drink such water.

Some samples of surface water were found to be not potable on account of their alkalinity, while water from certain boreholes in East Lake Province were found to contain nitrates in a concentration not previously noted in Tanganyika. The nitrate content of these waters was not such as to render them unpotable, but cautions were given that they were a possible source of risk to bottle fed babies.

An interesting complaint investigated was that tea brewed using the Kahama supply water turned a blue-black colour. This phenomenon was traced to the presence of dissolved iron in the water, this iron combining with the tannin normally present in tea to form an ink. It was found that treating the water with lime, followed by aeration, removed the complaint.

A number of raw waters for boiler feed purposes were examined on behalf of East African Railways and Harbours and other concerns, as were waters for use in the cooling systems of engines.

The examinations in connection with insurance claims were chiefly to assess if damage had been caused by salt or fresh water, while the majority of the textile samples were connected with the assessment of customs duty.

Few samples of beeswax were submitted for examinations, which indicates that overseas buyers remain satisfied with the quality of the Tanganyika product.

25.6. Toxicology and Forensic Chemistry

This section was severely handicapped by a shortage of staff experienced in this type of work, and this staff shortage which persisted throughout the year intensified the frustrating situation remarked on in previous years' reports that many cases could have been brought to a more satisfactory conclusion if it had been possible to devote more time to them.

25.7. Toxicology

The number of viscera examined during the year was only some 60 per cent of the previous year's total, although the number of associated exhibits were in excess of that of the previous period. The reduction in the figure for viscera is not in effect a true figure of cases submitted, but represents the number dealt with; at the close of the year there was a backlog of some twenty cases awaiting examination.

The following list shows the substances isolated from viscera. The number of positive cases is not recorded, while the list only indicates the variety of substances isolated, and does not necessarily mean they were the cause of death.

Alkaloid	Lead
Alkaloid and Saponin	Parathion
Arsenic	Quinine
Carbon monoxide	Saponin
Cyanogenetic glycoside	Tetrachloroethylene.
Digitalin type glycoside	

On two occasions we were asked to examine a native medicine, known in Central Province as "Arobaini Kamili". On each occasion it was alleged to be a plant product, whereas analysis showed it to be a mixture of copper sulphate and aluminium sulphate.

The number of specimens of "bhang" showed a further increase over previous years, while the number of arrows submitted is the highest ever recorded.

We again gratefully acknowledge the assistance given by the Botanist in charge, East African Herbarium, in identifying plant material.

25.8. Forensic Chemistry

The types of cases investigated followed a similar pattern to previous years, and call for a wide variety of techniques to be applied. The following examples serve to show the variety of cases.

When a radio was stolen from a house, the aerial was cut. A suspect was later found to have a piece of wire similar to that of the aerial in his possession. It was possible to show that this piece of wire had been cut from the original aerial, a perfect match of the cut ends being demonstrated.

Tools were examined for paint traces to decide if they had been used for forcing a cash box.

In a case of alleged housebreaking it was shown that a broken window had been broken from the inside, while in a second case, it was shown that mosquito gauze had been cut from the inside of the building.

A suspect's oil stained clothing was examined to ascertain if the stains were caused by mineral oil, as stated by the suspect, or by vegetable oil as alleged by the police; the suspect's story was found to be correct.

A number of cars alleged to have been involved in hit and run accidents were examined. In one case, the preliminary examination showed a strong probability of the car having been involved in the accident in question, and samples of paint and suspected bloodstains were removed for further examination. Before they could be examined, however, the owner of the vehicle, who had been present during the preliminary examination, had second thoughts and admitted the offence.

In a case of suspected theft of paint, the paint in the possession of the suspect was shown to be different from the paint stolen.

The presence of kerosene was proved in a number of articles from a scene of suspected arson.

A knife thought to have been used to slash the tyres of a motor vehicle was shown to have traces of the tyre rubber on it.

We wish to acknowledge the assistance given by the Photographic Section of the Police Identification Bureau for the preparation of photographs required in many of the cases.

The number of determinations of alcohol in blood and urine was considerably in excess of previous years. Not only is the degree of intoxication of a person related to the blood alcohol concentration, but when this latter value is known, it is possible to calculate the minimum amount of alcohol consumed by the person. The majority of samples submitted related to driving offences, but the degree of intoxication of persons involved in assault and other serious offences is frequently of considerable importance, and a number of the samples examined related to such cases. It is of interest to note that of the samples examined, 45 per cent came from persons undoubtedly severely intoxicated, 13 per cent from persons most probably under the influence of alcohol, 28 per cent from persons possibly under the influence of alcohol, while the remaining 14 per cent showed that the persons were undoubtedly sober.

25.9. Blood and Seminal Stains

The number of exhibits submitted for blood and semen examination was the highest on record. The methods used in grouping dried stains were modified so as to enable satisfactory results to be obtained on certain stains several weeks old. The most common cause of unsuccessful attempts at grouping dried stains is, in our experience, the lack of general cleanliness of the clothing bearing the stain: in a high proportion of cases the unstained cloth is so soiled that unspecific reactions can be obtained from any part of the garment.

During the course of the year, several bone fragments were tested for their origin.

APPENDIX

Number of the main groups of samples examined during the year.

Foodstuffs

Fresh milks	...	...	...	...	...	...	...	532
Tinned milks	...	...	...	...	...	...	...	121
Cereals and cereal products	...	...	...	...	...	...	...	56
Edible oils and fats	...	...	...	...	...	...	...	30
Fruit drinks	...	...	...	...	...	...	...	32
Beers and spirits	...	...	...	...	...	...	...	80
Miscellaneous foods	...	...	...	...	...	...	...	203
								<hr/> 1,054 <hr/>

Industrial and related samples

Waters	...	...	...	...	...	...	...	322
Beeswax	...	...	...	...	...	...	...	4
Oilcakes	...	...	...	...	...	...	...	22
Insurance claims	...	...	...	...	...	...	...	56
Gas samples	...	...	...	...	...	...	...	7
Textiles	...	...	...	...	...	...	...	177
Lubricating oils	...	...	...	...	...	...	...	143
Soaps	...	...	...	...	...	...	...	9
Miscellaneous	...	...	...	...	...	...	...	122
								<hr/> 862 <hr/>

Forensic and Toxicological samples

Viscera	...	...	...	...	...	...	...	60
Exhibits with viscera	...	...	...	...	...	...	...	79
Other Suspected poisons	...	...	...	...	...	...	...	88
Arrows	...	...	...	...	...	...	...	58
Bhang	...	...	...	...	...	...	...	24
Body fluids for alcohol content	...	...	...	...	...	...	...	181
Urines for lead, etc.	...	...	...	...	...	...	...	12
Forensic exhibits	...	...	...	...	...	...	...	102
Bloodstains	...	...	...	...	...	...	...	876
Seminal stains	...	...	...	...	...	...	...	98
Bones, hair, etc.	...	...	...	...	...	...	...	27
Drugs and chemicals	5
Miscellaneous	7
								<hr/> 1,617 <hr/>

Agricultural Samples

Soils	63
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RESIDUAL SPRAY CONTROL OF MALARIA AT MPANDA

By: D. F. CLYDE, G. WEBBE, H. G. BILCLIFFE and T. C. HENDERSON

Malaria Service

Most of the residual spray schemes that have taken place in hyperendemic malarious areas of tropical Africa have been organized as research projects and have tended to be beyond the financial capacity of the local authority. The campaign carried out at Mpanda during the period 1956-60, using only local resources and routine methods of assessment, was designed to meet a particular mosquito problem within a limited budget.

Mpanda is situated at an altitude of 3,600 feet, and at the time of this campaign had a population of 11,000. About 2,500 of these people were associated with a large lead mine on the south-west side of the settled area, the remainder being peasant farmers growing maize in and immediately around the settlement. Habitation was concentrated in an area of some 25 square miles and ended at the edge of the encircling forest which remained uninhabited on account of aridity and tsetse fly. The settlement thus resembled an island.

Malaria was hyperendemic at Mpanda prior to the residual spray programme described here, the parasite rates among children remaining high despite application of larvicides and unsuccessful attempts at clearing the several large dams that are a feature of the area. Parasite rates obtained among apparently healthy residents of the settlement in November 1956, before spraying commenced, were as follows: among children aged 0-2 years, 77.6; aged 3-5, 80.9; aged 6-10, 71.1; aged 11-15, 56.3; and among adults, 21.1.

The vectors present throughout the year prior to spraying were *Anopheles gambiae*, found in a series of all-age dissections to have the somewhat low sporozoite rate of 2.5, and *A. funestus*. A third mosquito commonly frequenting houses at Mpanda and breeding prolifically in the overgrown dams was *A. pharoensis*, but in more than 600 dissections of this species infections were never encountered.

In addition to the three common anophelines found in houses the following species were taken by nocturnal human bait catching at Mpanda: *A. gambiae*, *A. pharoensis*, *A. coustani*, *A. coustani tenebrosus*, *A. squamosus*, *A. marshalli*, *A. theileri*. The last-named represented a first record for Tanganyika.

Although the vectors were more common during the wet season, when from November to April monthly rainfall is approximately 5 inches, they persisted throughout the remaining dry months breeding in the dams. House catches carried out through the use of pyrethrum spraying in the central part of Mpanda, at the time when the ineffective larval control method was being used, are recorded in the Table, where they have been grouped into four week periods.

Residual Spraying

The reasons for the selection of residual insecticide spraying of houses as the method of choice for malaria control at Mpanda, when the routine in all other settled areas in Tanganyika is larval control, may be summarized as follows:—

- (a) Mpanda is a densely-populated demographic island surrounded by uninhabited forest;
- (b) it contains many natural and man-made anopheline breeding sites economically impossible to control by methods of drainage, clearance and larviciding;
- (c) it was an important industrial site importing labourers who, coming from a highland district, had little immunity to malaria;
- (d) an important vector was the endophilic *Anopheles funestus*, particularly susceptible to residual spray methods, while the danger of persistence of exophilic *A. gambiae* was reduced by the absence of cattle in this tsetse area.

Accordingly, arrangements were made for the spraying of all houses in Mpanda Settlement and Mine at intervals of nine months commencing with the first cycle in March, 1957. Dieldrin 50 per cent wettable powder was applied at a nozzle dosage of 80 mg. square foot using stirrup pumps. The spraying was supervised to the same extent as would have been a routine larval control programme, and special technical and scientific staff were not employed.

Each of the three spray teams consisted of 3 men all recruited locally and given an instructional course in spray methods. These teams were directly supervised and their tasks assigned by 3 technically-trained Malaria Assistants with several years of experience in larval control methods but only training experience in residual spraying. Work was directed by a Malaria Field Officer and technical assessments made by qualified staff. It is stressed that the operation was carried out as a routine control measure and not on an intensive research basis, and was limited to personnel and funds available locally. In fact the shortage of funds necessitated reduction of the area of spray coverage from the whole settlement to about nine-tenths of it. One team sprayed the Mine housing, while the other two sprayed the settlement as far north as a boundary arbitrarily drawn across a line of low density housing. The northernmost part of the settled area was never sprayed although in all other directions coverage reached the edge of the inhabited zone.

The cost of a typical spraying operation and of the assessment that followed may be summarized thus—

(a) *Spraying cost of each cycle:*

	Shs.
Salaries of spray staff (15 full, 1 part-time)	3,950/-
Housing and allowances	1,100/-
Transport	1,600/-
Residual spray pumps, protective clothing, etc.	750/-
Dieldrin (approximately 650 lb.)	7,500/-
Total ...	14,900/-

(b) *Assessment cost following each cycle:*

	Shs.
Salaries of staff (3 full, 3 part-time)	5,500/-
Housing and allowances	250/-
Transport	300/-
Mosquito catching sprayers and equipment	150/-
Total ...	6,200/-

At Mpanda at each cycle approximately 3,700 houses were sprayed. The cost of spraying each house was therefore Shs. 4/02, and of the assessment Sh. 1/68. The total cost was Shs. 5/70 per house.

Entomological Results of the First Spray Cycle

The First Spray Cycle was carried out in March 1957. A total of 3,558 houses was treated and 157 missed. The results of mosquito catching following this spraying are recorded in the Table, and it is apparent that the vectors were reduced but not eliminated. A small reduction in numbers of *A. pharoensis* in houses took place, but no change occurred in the culicine population. In an attempt to reduce the numbers, particularly of *A. funestus*, the zone of spraying was extended for the second cycle to the north to include scattered housing around an outlying dam.

Entomological Results of the Second Spray Cycle

The Second Spray was carried out in November 1957, 3,853 houses being treated and 128 missed. Results of mosquito catching following this cycle are given in the Table. In addition to the apparent eradication of the two vector anophelines from housing in the centre of the sprayed area, it was interesting to note a considerable reduction in the house-resting portion of the *A. pharoensis* population. Prior to institution of larvicidal measures at Mpanda a house-resting average of 4.6 had been found for females of this species (April 1955). In the same month of 1958 the average was 0.04. Another interesting point was the widespread complaint by the public that nuisance mosquitoes had greatly increased following the second cycle. In fact, the house catches of culicines were now three times as great as after the first spraying, but much of the increase could be accounted for by

recent development of the settlement, provision of many new domestic breeding sites such as pit latrines and (owing to the diversion of all available funds to the spray campaign) lack of maintenance of the dams, the overgrown edges of which provided innumerable sheltered mosquito breeding sites.

Five months after this spraying vectors reappeared in low density in housing in the centre of the zone. The month, April, was one during which anopheline breeding sites are most common at Mpanda.

Entomological Results of the Third Spray Cycle

The Third Spray Cycle was carried out in August 1958, with the treatment of 3,628 houses: 225 houses were missed on this occasion. The results of mosquito catching following the cycle are recorded in the Table. It is noted that vectors remained absent for 7 months following this cycle, and even *A. pharoensis* was not taken in houses for 6 months although there was little change in the culicine catches.

Entomological Results of the Fourth Spray Cycle

The Fourth Spray Cycle took place in May and June, 1959, when 3,665 houses were treated and 208 missed. The results of catches following the cycle are given in the Table. Vectors again remained absent for 7 months and found difficulty in establishing themselves fully for another 3 months. *A. funestus* proved particularly tardy in this respect despite the season, February to April, being most conducive to mosquito breeding. *A. pharoensis* however was not eliminated by this spraying, occasional specimens being taken in houses each month. Culicines tended to increase yet again and were now found in houses in numbers five times as great as before spraying was first commenced.

Human bait catching outside houses at night in January 1960 resulted in occasional *A. pharoensis* being taken, in February occasional *A. pharoensis* and rarely *A. gambiae*, in March and April only occasional *A. pharoensis*. In May 1960, large numbers of the latter and occasional *A. gambiae* came to feed.

Effect of Spray Control on Parasite Rates

Pre-spray malaria parasite rates have already been listed. Blood examinations of people living in the central part of Mpanda were made following the second and third spray cycles. An examination in April, 1958, five months following completion of the second cycle, revealed parasite rates as follows: among children aged 0-2 years, 10.0; aged 3-5, 40.9; aged 6-10, 39.7; aged 11-15, 35.8; and among adults, 18.0. An examination made in May, 1959, nine months after the third cycle, revealed among children aged 0-2, 11.1; aged 3-5, 15.4; aged 6-10, 24.0; aged 11-15, 9.4; and among adults, 3.1.

The progressive fall in the rates among people aged more than two years is indicated. In view of the reappearance of vectors one month before the examination made in May 1959, it seems likely that some of the infections among infants are attributable to fresh transmission.

The species of parasite in nearly all cases was *Plasmodium falciparum*, both before and after spraying. It was mixed occasionally in children with *P. malariae*, but *P. vivax* was rare and did not appear at all in the films taken in May, 1959.

Discussion of the Mpanda Campaign

It is now well known that eradication of malaria from communities living in hyper-endemic areas of tropical Africa will be a difficult task necessitating use of all methods of attack on the disease and its vector. Because of this, projects so far organized in this zone have been carried out with the full technical resources and staff of research institutes. The costs of these projects have accordingly been beyond the means of most local authorities. In Tanganyika, mention may be made of the recently concluded Pare-Taveta Spray Scheme in which the repeated spraying with dieldrin at 8 month intervals of houses over an area of 2,000 square miles resulted in malaria being reduced to insignificance. *A. funestus* was eradicated, but *A. gambiae* remained in low numbers, feeding outside houses, principally on cattle. This result was achieved by the use of the resources of a Malaria Institute together with a large specialist team.

The work at Mpanda was not organized thus. From the outset the objective was the control of anophelines by a method that might prove more successful than routine larviciding but would still be within the means of the local authority. Consequently, only such staff were employed as were required for the efficient execution of the spraying, and for the assessment of the most important results. In these circumstances the real cost was very much lower. Including the relevant portions of salaries and allowances of all part-time technical staff working on various aspects of the project, the cost of spraying was Shs. 4/02 for each house, and of assessment Shs. 1/68.

The results at Mpanda were encouraging. The vectors were eliminated from houses for periods of 6 months following spraying, and, although *A. gambiae* probably survived outside in small numbers it is likely that *A. funestus* would have been eradicated but for re-seeding from the unsprayed area at the north of the zone. No evidence of anopheline resistance to the insecticide was found, nor were toxic symptoms reported by the spray personnel. The only objections raised by the public concerned an increase in culicines and houseflies in the later stages of the campaign.

TABLE.—Average number of female mosquitoes per room
in the centre of Mpanda Settlement

Month					<i>Anopheles gambiae</i>	<i>Anopheles funestus</i>
February, 1956 ...	...	...	...	...	2.1	0.9
March ...	...	...	...	...	6.2	2.8
April ...	...	...	...	...	4.4	5.8
May ...	...	...	...	...	1.2	5.4
June ...	...	...	...	...	1.0	2.1
July ...	...	...	...	...	0.7	1.0
August ...	...	...	...	...	0.1	0.7
September ...	...	...	...	...	0.4	0.5
October ...	...	...	...	...	0.2	0.3
November ...	...	...	...	...	0.9	2.1
December ...	...	...	...	...	1.0	4.2
January, 1957 ...	...	...	...	...	1.0	2.0
February ...	...	...	...	...	2.3	4.2
<i>First Spray Cycle</i>						
April, 1957 ...	...	...	...	...	0.1	0.5
May ...	...	...	...	...	0.4	0.5
June ...	...	...	...	...	0.6	0.8
July ...	...	...	...	...	0.4	0.5
August ...	...	...	...	...	0.2	0.2
September ...	...	...	...	...	0.4	0.6
October ...	...	...	...	...	0.1	0.2
November ...	...	...	...	...	0.1	0.3
<i>Second Spray Cycle</i>						
December, 1957...	...	...	...	...	0.0	0.0
January, 1958 ...	...	...	...	...	0.0	0.0
February...	...	...	...	...	0.0	0.0
March ...	...	...	...	...	0.0	0.0
April ...	...	...	...	...	0.3	0.1
May ...	...	...	...	...	0.5	0.04
June ...	...	...	...	...	0.4	0.03
July ...	...	...	...	...	0.04	0.02

TABLE.—Average number of female mosquitoes per room
in the centre of Mpanda Settlement—(Contd.)

<i>Third Spray Cycle</i>						<i>Anopheles gambiae</i>	<i>Anopheles funestus</i>
<i>Month</i>							
September, 1958	...	...	...	...	...	0.0	0.0
October ...	...	...	...	...	...	0.0	0.0
November	...	...	...	...	...	0.0	0.0
December	...	...	...	...	...	0.0	0.0
January, 1959	...	...	...	...	...	0.0	0.0
February...	...	...	...	...	...	0.0	0.0
March ...	...	...	...	...	...	0.0	0.0
April ...	...	...	...	...	...	0.2	0.03
May ...	...	...	...	...	...	0.3	0.04
<i>Fourth Spray Cycle</i>							
June, 1959	...	...	...	...	...	0.0	0.0
July ...	...	...	...	...	...	0.0	0.0
August ...	...	...	...	...	...	0.0	0.0
September	...	...	...	...	...	0.0	0.0
October ...	...	...	...	...	...	0.0	0.0
November	...	...	...	...	...	0.0	0.0
December	...	...	...	...	...	0.0	0.0
January, 1960	...	...	...	...	...	0.01	0.01
February...	...	...	...	...	...	0.01	0.0
March ...	...	...	...	...	...	0.0	0.01
April ...	...	...	...	...	...	0.2	0.0
May ...	...	...	...	...	...	0.4	0.1
June	0.3	0.1







TANGANYIKA

MINISTRY OF HEALTH AND LABOUR

Annual Report
of the
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1960

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(Statistics)

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PART I

Staff

6	Special Grade Dental Surgeons and Dental Surgeons	
2	Senior Sister Tutors	
7	Sister Tutors and Midwifery Tutor	
13	Matrons	
135	Nursing Sisters	
1	Male Charge Nurse (as at 31st December, 1960)	
6	Sister Housekeepers and Housewives	
10	Assistant Nursing Sisters/Assistant Charge Nurses	
20	Senior Staff Nurses/Senior Staff Midwives	
570	Nurses/Midwives	
1,596	Student Nurses/Nursing Orderlies	
1	Chief Male Nurse (Psychiatry)	
6	Charge Nurses (Psychiatry)	
6	Nursing Sisters (Psychiatry)	
1	Assistant Charge Nurse (Psychiatry)	
2	Nurses (Psychiatry)	
1	Supervisor	
2	Chief Nursing Assistants	
5	Senior Nursing Assistants	
52	Nursing Assistants	
1	Chief Medical Assistant	
26	Senior Medical Assistants	
181	Medical Assistants	
28	Rural Medical Aids	
1	Chief Pharmacist	
3	Pharmacists	
1	Senior Compounder	
5	Senior Pharmaceutical Assistants	
55	Pharmaceutical Assistants	
3	Laboratory Technologists	
6	Senior Laboratory Assistants	
47	Laboratory Assistants	
55	Junior Laboratory Assistants	
1	Senior Dental Technician	
2	Dental Technicians	
20	Dental Assistants	
1	Junior Dental Assistant	
1	Senior Hospital Secretary	
1	Hospital Secretary	
1	Hospital Welfare Officer	
6	Hospital Welfare Assistants	
2	Special Grade Medical Officers and Assistant Surgeons	
14	Assistant Medical Officers	
1	Laundry Manager	
1	Laundry Foreman	
3	Medical Instrumentalists	
5	Wardens	
1	Senior Specialist	
1	Medical Superintendent	
10	Specialists	
4	Senior Medical Officers	
129	Special Grade Medical Officers, Medical Officers and Assistant Surgeons	
14	Assistant Medical Officers	
1	Senior Pathologist	
4	Pathologists	
1	Senior Dental Surgeon	

TABLE I
ESTABLISHMENT
(as at 31st December, 1960)

ADMINISTRATION

- 1 Minister for Health and Labour.
- 1 Permanent Secretary.
- 1 Chief Medical Officer.
- 1 Deputy Chief Medical Officer.
- 2 Principal Medical Officers.
- 9 Senior Medical Officers.
- 1 Principal Matron.
- 1 Chief Health Inspector.
- 1 Principal Assistant Secretary.
- 1 Assistant Secretary.
- 2 Women Administrative Assistants.
- 3 Office Supervisors.
- 1 Establishment Assistant.
- 8 Executive Assistants.
- 1 Office Assistant.
- 11 Stenographers/Personal Secretaries.
- 1 Senior Treasury Accountant.
- 1 Treasury Accountant.
- 1 Accounts Officer.
- 1 Junior Accounts Officer.
- 3 Accounts Assistants.
- 245 Clerks.
- 29 Telephone Operators.
- 1 Chief Storekeeper.
- 1 Stores Officer.
- 13 Stores Assistants.
- 1 Security Assistant.
- 1 Head Packer.

HOSPITAL AND HEALTH SERVICES

- 2 Senior Specialists.
- 1 Medical Superintendent.
- 10 Specialists.
- 4 Senior Medical Officers.
- 129 Special Grade Medical Officers, Medical Officers and Assistant Surgeons.
- 14 Assistant Medical Officers.
- 1 Senior Pathologist.
- 4 Pathologists.
- 1 Senior Dental Surgeon.

6	Special Grade Dental Surgeons and Dental Surgeons.	Physiotherapists.	1
2	Senior Sister Tutors.	Senior Radiographer.	1
7	Sister Tutors and Midwifery Tutor.	Radiographers.	2
13	Matrons.	Senior Radiographic Assistant.	1
135	Nursing Sisters.	Radiographic Assistants.	3
1	Male Charge Nurse.	Junior Radiographic Assistants.	7
6	Sister Housekeepers and Housekeepers.	Radiological Technician.	1
10	Assistant Nursing Sisters/Assistant Charge Nurses.	X-ray Mechanic.	1
20	Senior Staff Nurses/Senior Staff Midwives.	Junior Instrument Mechanic.	4
570	Nurses/Midwives.	Foreman Transport.	1
1,596	Student Nurses/Nursing Orderlies.	Motor Driver.	8
1	Chief Male Nurse (Psychiatry).	Head Attendant.	1
6	Charge Nurses (Psychiatry).	Subordinate Staff.	1,876
6	Nursing Sisters (Psychiatry).	Health Inspectors.	21
1	Assistant Charge Nurse (Psychiatry).	Senior Assistant Health Inspector.	7
2	Nurses (Psychiatry).	Assistant Health Inspector.	83
1	Supervisor.	Sanitary Inspector.	34
2	Chief Nursing Attendants.	Health Orderlies and Senior Health Orderlies.	99
5	Senior Nursing Attendants.	Senior Health Visitors.	2
52	Nursing Attendants.	Health Visitors.	21
1	Chief Medical Assistant.	Senior Staff Health Nurse.	1
26	Senior Medical Assistants.	Health Nurse.	81
180	Medical Assistants.	Entomologists.	2
28	Rural Medical Aids.	Senior Malaria Assistants.	3
1	Chief Pharmacist.	Malaria Assistants.	23
3	Pharmacists.	Junior Malaria Assistants.	13
1	Senior Compounder.	Malaria Orderlies.	10
5	Senior Pharmaceutical Assistants.	Junior Sleeping Sickness Assistants.	7
35	Pharmaceutical Assistants.	Sleeping Sickness Orderlies.	8
3	Laboratory Technologists.	Sleeping Sickness Pathologists.	22
6	Senior Laboratory Assistants.		82
47	Laboratory Assistants.	Government Chemist.	1
55	Junior Laboratory Assistants.	Chemists.	3
1	Senior Dental Technician.	Assistant Chemists.	4
2	Dental Technicians.	Senior Chemical Assistants.	4
20	Dental Assistants.	Chemical Assistants.	14
1	Junior Dental Assistant.		
1	Senior Hospital Secretary.		
1	Hospital Secretary.		
1	Hospital Welfare Officer.		
6	Hospital Welfare Assistants.		
3	Stewards.		
14	Hospital Stewards Assistants.		
1	Laundry Manager.		
1	Laundry Foreman.		
3	Medical Instructors.		
5	Wardens.		

1	Teacher.
4	Physiotherapists.
1	Senior Radiographer.
2	Radiographers.
1	Senior Radiographic Assistant.
3	Radiographic Assistants.
7	Junior Radiographic Assistants.
1	Radiological Technician.
1	X-ray Mechanic.
4	Junior Instrument Mechanics.
1	Foreman Transport.
8	Motor Drivers.
1	Head Attendant.
1,876	Subordinate Staff.
21	Health Inspectors.
7	Senior Assistant Health Inspectors.
83	Assistant Health Inspectors.
34	Sanitary Inspectors.
99	Health Orderlies and Senior Health Orderlies.
2	Senior Health Visitors.
21	Health Visitors.
1	Senior Staff Health Nurse.
81	Health Nurses.
2	Entomologists.
3	Senior Malaria Assistants.
23	Malaria Assistants.
13	Junior Malaria Assistants.
10	Malaria Orderlies.
7	Junior Sleeping Sickness Assistants.
8	Sleeping Sickness Orderlies.
25	Sleeping Sickness Patrolmen.

GOVERNMENT CHEMIST

1	Government Chemist.
3	Chemists.
4	Assistant Chemists.
4	Senior Chemical Assistants.
14	Chemical Assistants.

TABLE II
MORBIDITY AND MORTALITY—EUROPEAN OFFICIALS

Total number of European officials in Service (excluding High Commission)—										
Staff List...	...	...	...	...	...	...	...	...	...	2,255
Deaths	...	...	...	...	...	...	...	...	...	5
Invalidings	...	...	...	...	...	...	...	...	...	5
Number admitted to hospitals	...	...	...	...	...	...	...	...	...	260
Number sick in quarters	...	...	...	...	...	...	...	...	...	73
Total number of days off duty	...	...	...	...	...	...	...	...	...	2,210
Average days off per patient	...	...	...	...	...	...	...	...	...	6.63

Causes of Morbidity and Mortality:

(a) Mortality:

Poliomyelitis	...	...	...	...	...	...	1
Gunshot wound (head injuries)	...	...	...	...	...	...	1
Heart Failure	...	...	...	...	...	...	1
Malignant neoplasm	...	...	...	...	...	...	2
Total							5

(b) Morbidity (diseases diagnosed):

Infective and Parasitic Diseases	...	...	...	...	...	...	...	84
Neoplasms	...	...	...	...	...	...	...	6
Allergic, Endocrine System, Metabolic and Nutritional Diseases, and Diseases of the Blood-forming Organs	...	...	...	...	...	...	...	4
Mental, Psychoneurotic and Personality Disorders	...	...	...	...	...	...	...	6
Diseases of the Nervous System and Sense Organs	...	...	...	...	...	...	...	2
Diseases of the Circulatory System	...	...	...	...	...	...	...	11
Diseases of the Respiratory System	...	...	...	...	...	...	...	58
Diseases of the Digestive System	...	...	...	...	...	...	...	54
Diseases of the Genito-Urinary System	...	...	...	...	...	...	...	19
Deliveries, and complications of Pregnancy	...	...	...	...	...	...	...	1
Diseases of the Skin and Cellular Tissues, and Diseases of Bones and Organs of Movement	...	...	...	...	...	...	...	24
Congenital Malformations	...	...	...	...	...	...	...	1
Symptoms, Senility and Ill-defined conditions	...	...	...	...	...	...	...	49
Accidents, Poisoning and Violence	...	...	...	...	...	...	...	14
Total								333

(c) Principle Causes of Morbidity:

Malaria (all forms)	...	...	...	...	...	...	36
Pyrexia of unknown origin	...	...	...	...	...	...	28
Acute respiratory infections	...	...	...	...	...	...	25
Influenza	...	...	...	...	...	...	18
Gastro-enteritis	...	...	...	...	...	...	18

TABLE III
MEDICAL TRAINING
APPROVED MEDICAL AND NURSING TRAINING CENTRES

Category of Students	Training Centre	Training Authority	Length of Course (Years)	Total Students under Training 1960	Students Qualified 1960	Total Qualified in each category 1960
Medical Assistants ...	Dar es Salaam	Government ...	3	84	21	30
Laboratory Assistants ...	Bumbuli ...	Lutheran Mission ...	3	35	9	3
Pharmaceutical Assistants ...	Dar es Salaam	Government ...	3	13	3	3
Dental Assistants ...	Dar es Salaam	Government ...	3	12	3	3
Hospital Steward Assistants ...	Dar es Salaam	Government ...	3	15	3	3
Rural Medical Aids ...	Dar es Salaam	Government ...	2	5	1	1
	Mwanza, Morogoro, Dodoma, Mbeya, Iringa, Bukoba, Lindi ...	Government ...	2	77	28	46
	Minaki ...	U.M.C.A. ...	2	36	14	
	Mnero ...	Benedictine Mission ...	2	25	4	
Assistant Health Inspectors	Dar es Salaam	Government ...	3	38	10	10
Health Nurses ...	Tukuyu ...	Government ...	2	35	15	15
	Tanga ...	Government ...	2	20		
	Dar es Salaam	Government ...	3	211	67	
Nurses ...	Mvumi ...	C.M.S. ...	3	84	25	
	Peramiho ...	Benedictine Mission ...	3	56	15	
	Magila ...	U.M.C.A. ...	3	37	9	
	Lulindi ...	U.M.C.A. ...	3	49	6	
	Sumve ...	White Fathers ...	3	54	13	153
	Kiombi ...	Augustana Lutheran ...	3	45	12	
	Ndolage ...	Church of Sweden ...	3	39	5	
	Kolandoto ...	Africa Inland Mission ...	3	33	1	
	Ndareda ...	Medical Missionaries of Mary ...	3	30	-	
	Shirati ...	Mennonite ...	3	13	-	
Midwives ...	Dar es Salaam	Government ...	1	42	39	
	Mvumi ...	C.M.S. ...	1 or 2	25	17	
	Ndanda ...	Benedictine Mission ...	2	16	1	71
	Magila ...	U.M.C.A. ...	1 or 2	9	8	
	Sumve ...	White Fathers ...	1	7	6	
Village Midwives ...	Korogwe ...	U.M.C.A. ...	2	4	1	
	Newala ...	U.M.C.A. ...	2	10	3	
	Liuli ...	U.M.C.A. ...	2	2	2	
	Kagunguli ...	White Fathers ...	2	9	2	
	Arusha ...	Government ...	1	3	3	27
	Iringa ...	Government ...	1	6	6	
	Tabora ...	Government ...	1	6	1	
	Nzega ...	Government ...	1	12	9	

[illegible]

TABLE IV
GOVERNMENT HOSPITALS AND DISPENSARIES
as at 31st December, 1960

Province	Hospital	No. of Wards	Number and Category of Beds					Grade of Accommodation
			General	Obstetrics	Tuberculosis	Infectious	Mental	
Dar es Salaam	Ocean Road	35	54	15	1	4	1	I
	Princess Margaret	19	464	50	-	-	10	II and IV
Central Province	Dodoma	22	142	16	-	12	-	I, II, III and IV
	Kongwa	6	40	3	90	-	-	II and IV
	Mpwapwa	5	32	-	-	-	-	IV
	Kondoa	10	36	3	-	7	-	IV
	Singida	5	55	-	-	5	-	IV
Eastern Province	Morogoro	16	162	14	-	8	-	I, III and IV
	Bagamoyo	5	32	4	-	3	-	III and IV
	Kilosa	8	75	13	-	12	-	II, III and IV
	Mahenge	10	78	-	-	-	-	III and IV
	Utete	4	35	-	-	-	-	IV
Lake Province	Mwanza	19	184	17	7	12	-	I, II and IV
	Geita	5	52	-	-	8	-	IV
	Maswa	5	52	-	-	8	-	IV
	Musoma	17	84	13	4	-	-	I, II and IV
	Shinyanga	6	64	13	-	4	-	II and IV
	Tarime	2	19	-	-	-	-	IV
	Ukerewe	5	52	-	-	8	-	II, III and IV
	Arusha	20	140	14	-	8	-	I, II, III and IV
	Moshi	19	229	10	-	24	-	I, II, III and IV
	Monduli	5	46	-	12	-	-	IV
Northern Province	Mbulu	5	62	6	36	-	-	IV

TABLE IV—(contd.)
GOVERNMENT HOSPITALS AND DISPENSARIES
as at 31st December, 1960

Province	Hospital	No. of Wards	Number and Category of Beds					Grade of Accommodation
			General	Obste- trics	Tuber- culosis	Infec- tious	Mental	Total
Southern Province	Mtwara ...	6	39	4	15	—	—	58
	Lindi ...	7	77	13	13	—	—	103
	Nachingwea ...	15	48	6	45	4	—	103
	Songea ...	6	49	6	—	1	—	56
	Kilwa ...	5	30	—	—	6	—	36
	Tunduru ...	2	24	—	—	—	—	24
	Newala ...	4	20	—	20	—	—	40
Southern Highlands Province	Mbeya ...	18	99	11	—	4	—	114
	Iringa ...	22	93	16	—	4	—	113
	Tukuyu ...	7	75	6	—	4	—	85
	Njombe ...	4	32	—	—	4	—	36
Tanga Province	Tanga ...	13	284	40	86	—	—	410
	Korogwe ...	7	75	6	24	11	—	116
	Lushoto ...	9	29	4	21	6	—	60
	Muheza ...	7	52	—	46	8	—	106
	Pangani ...	8	19	6	—	1	—	26
	Same ...	3	25	1	—	4	—	30
Western Province	Tabora ...	17	193	17	—	6	—	216
	Kigoma ...	6	56	9	—	—	—	65
	Nzega ...	8	52	40	—	4	—	96
	Kibondo ...	6	55	5	—	8	—	68
	Sumbawanga ...	7	65	12	—	4	—	81
	Kahama ...	5	52	16	—	—	—	68
West Lake Province	Bukoba ...	8	105	14	8	4	—	131
	Biharamulo ...	5	35	4	3	—	—	42
TOTAL—GENERAL HOSPITALS		48	3,872	427	431	206	11	4,947

TABLE IV—(contd.)
GOVERNMENT HOSPITALS AND DISPENSARIES
as at 31st December, 1960

Province	Hospital	No. of Wards	Number and Category of Beds					Grade of Accommodation
			General	Obstetrics	Tuberculosis	Infectious	Mental	
Dar es Salaam ...	Infectious Diseases ...	20	-	-	120	40	-	IV
Central Province	Mirembe Mental ...	31	-	-	-	-	618	I, II and IV
	Isanga Mental ...	18	-	-	-	-	212	II and IV
Eastern Province	Chazi Leprosy ...	3	1	1	-	33	-	IV
Northern Province	Kibongoto Tuberculosis	7	-	-	302	-	-	II and IV
Southern Highlands Province ...	Makete Leprosy ...	4	2	-	-	34	-	IV
TOTAL—SPECIAL HOSPITALS ...	6		3	1	422	107	830	
								1,363

(TABLE IV—*contd.*)
GOVERNMENT HOSPITALS AND DISPENSARIES
as at 31st December, 1960

Province	Hospital	No. of Wards	Number and Category of Beds					Grade of Accommodation
			General	Obstetrics	Tuberculosis	Infectious	Mental	Total
Dar es Salaam ...	Ukonga ...	1	12	—	—	—	—	12
Central Province	Manyoni ...	4	18	2	—	2	—	22
	Itigi ...	4	12	—	—	—	—	12
Eastern Province	Kingolwira ...	3	33	—	—	—	—	33
	Mafia ...	4	16	1	—	—	—	18
	Malindi ...	1	10	—	—	—	—	10
	Ruvu ...	2	10	—	—	—	—	10
	Ngudu ...	2	16	—	—	—	—	16
Northern Province	Oldeani ...	8	38	5	22	—	—	65
	Magugu ...	2	10	—	—	—	—	10
Southern Province	Liwale ...	4	22	—	—	—	—	22
Southern Highlands Province	Chunya ...	4	24	—	—	9	—	33
	Malangali ...	4	20	3	—	—	—	23
	Kyela ...	3	20	—	—	2	—	22
Tanga Province	Handeni ...	6	24	—	—	—	—	24
	Usangi ...	5	36	4	—	4	—	44
Western Province	Mpanda ...	2	10	—	—	—	—	10
	Kasulu ...	3	22	—	—	—	—	22
	Kakonko ...	2	16	—	—	—	—	16
West Lake Province	Ngara ...	2	24	—	—	—	—	24
TOTAL—DISPENSARIES ...	20		393	15	23	17	—	448
TERRITORIAL TOTAL ...	74		4,268	443	876	330	841	6,758

TABLE V
IN-PATIENTS—GOVERNMENT GENERAL AND SPECIAL HOSPITALS AND DISPENSARIES
Figures refer to the twelve-month period 1st December, 1959 to 30th November, 1960

PROVINCE	NUMBER ADMITTED DURING THE YEAR							NUMBER DISCHARGED DURING THE YEAR							DEATHS							DAILY AVERAGE IN HOSPITAL						
	African		Asian		European		Total	African		Asian		European		Total	African		Asian		European		Total	African		Asian		European		Total
	M	F	M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F	
Dar es Salaam ...	6,191	6,606	524	496	394	456	14,637	5,942	6,487	506	492	357	470	14,254	165	68	23	9	4	3	272	184.65	151.02	11.80	9.97	8.78	8.90	375.12
Central Province ...	5,594	4,726	31	45	25	27	10,448	5,320	4,545	30	44	27	27	9,993	231	223	1	1	—	—	456	212.50	154.14	2.26	.74	1.12	.52	371.28
Eastern Province ...	7,212	5,182	59	72	89	38	12,652	6,920	5,034	61	70	89	36	12,210	224	153	—	—	1	—	378	236.23	124.66	.66	1.06	1.19	1.34	365.14
Lake Province ...	8,565	8,699	116	167	92	96	17,695	8,190	8,363	169	162	49	96	16,969	387	283	10	3	2	—	685	253.12	189.26	1.29	1.42	.42	1.09	446.60
Northern Province ...	9,621	9,116	108	145	205	343	19,529	8,734	8,364	196	145	205	341	17,895	424	294	2	3	4	1	728	299.39	264.86	3.16	3.29	3.12	5.59	579.32
Southern Province ...	4,573	3,561	29	45	24	27	8,249	4,398	3,441	28	45	25	27	7,964	162	118	2	2	3	1	288	218.38	149.03	0.52	0.69	0.39	0.31	260.23
Southern Highlands Province ...	5,666	6,199	67	132	130	187	12,581	5,472	6,049	63	133	127	185	12,029	175	131	3	1	2	2	314	132.83	134.20	.16	.79	1.28	1.78	271.04
Tanga Province ...	9,645	5,631	126	196	83	110	15,791	9,287	5,426	115	195	83	107	15,213	416	190	10	6	1	—	623	368.24	172.93	4.96	3.08	2.36	2.57	554.14
Western Province ...	6,678	7,261	79	152	38	50	14,258	6,386	7,002	73	144	38	50	13,693	333	283	5	5	—	—	626	232.34	172.99	2.56	4.01	.80	1.60	414.30
West Lake Province ...	1,920	2,124	5	9	2	4	4,064	1,833	2,075	5	9	2	4	3,928	66	53	1	—	—	—	120	63.17	52.38	1.04	.07	—	—	6.03
TOTALS: GENERAL HOSPITALS ...	65,665	59,095	1,144	1,460	1,012	1,338	129,714	62,482	56,786	1,696	1,439	1,002	1,343	124,148	2,583	1,796	57	20	17	7	4,400	2,200.85	1,556.47	28.41	24.94	19.46	23.73	3,853.86
DAR ES SALAM: Infectious Diseases Hospital ...	572	356	6	1	—	—	935	527	327	9	—	—	—	863	35	20	—	—	—	—	55	88.16	42.12	0.77	0.26	—	—	131.31
CENTRAL PROVINCE: Mirembe Hospital ...	427	141	19	9	4	2	602	330	101	15	8	4	2	460	50	21	—	—	1	—	72	401.00	262.66	29.91	10.58	3.75	6.33	654.23
... Ilanga Institution ...	51	5	—	—	—	—	56	33	2	1	—	—	—	36	7	2	—	—	—	—	9	184.25	39.16	4.90	—	—	—	228.31
EASTERN PROVINCE: Chari Leprosy Hospital ...	1,043	382	—	—	—	—	1,425	1,051	380	—	—	—	—	1,431	1	3	—	—	—	—	4	22.05	6.97	—	—	—	—	29.02
NORTHERN PROVINCE: Kibogoto Tuberculosis Hospital ...	664	425	17	6	—	—	1,112	518	360	14	6	—	—	898	27	18	2	—	—	—	47	139.40	89.50	7.50	3.30	—	—	239.70
TANGA PROVINCE: Infectious Diseases Hospital ...	123	—	—	—	—	—	123	121	—	—	—	—	—	121	2	—	—	—	—	—	2	34.83	—	—	—	—	—	34.83
SOUTHERN HIGHLANDS PROVINCE: Makete ...	236	199	—	—	—	—	435	283	200	—	—	—	—	483	3	1	—	—	—	—	4	20.00	14.00	—	—	—	—	34.00
TOTALS: SPECIAL HOSPITALS ...	3,166	1,508	42	16	4	2	4,728	2,863	1,370	39	14	4	2	4,292	125	65	2	—	1	—	193	889.69	394.41	43.08	14.14	3.75	6.33	1,251.40
CENTRAL PROVINCE: ...	934	673	—	—	—	—	1,607	908	668	—	—	—	—	1,576	21	5	—	—	—	—	26	12.89	9.37	—	—	—	—	22.26
EASTERN PROVINCE: ...	1,248	487	—	—	—	—	1,735	1,228	477	—	—	—	—	1,705	19	10	—	—	—	—	29	81.55	36.56	—	—	—	—	118.11
LAKE PROVINCE: ...	394	309	—	—	—	—	704	340	312	—	—	—	—	652	16	29	—	—	—	—	36	49	.06	—	—	—	—	6.15
NORTHERN PROVINCE: ...	1,043	684	1	—	1	—	1,729	1,021	663	1	—	1	—	1,686	31	12	—	—	—	—	43	39.80	22.70	—	—	—	—	62.50
SOUTHERN PROVINCE: ...	273	216	—	—	—	—	489	266	215	—	—	—	—	481	7	1	—	—	—	—	8	0.16	0.20	—	—	—	—	0.36
SOUTHERN HIGHLANDS PROVINCE: ...	1,832	1,637	—	—	—	—	3,469	1,810	1,620	—	—	—	—	3,430	43	28	—	—	—	—	71	20.66	22.30	—	—	—	—	42.96
TANGA PROVINCE: ...	1,235	1,403	—	—	—	—	2,639	1,199	1,567	—	—	—	—	2,566	40	29	—	—	—	—	70	27.59	35.59	—	—	—	—	63.18
WESTERN PROVINCE: ...	642	534	—	—	—	—	1,176	610	506	—	—	—	—	1,116	44	25	—	—	—	—	70	24.67	17.29	—	—	—	—	41.96
WEST LAKE PROVINCE: ...	286	339	—	—	—	—	625	205	310	—	—	—	—	575	21	30	—	—	—	—	51	10.42	16.62	—	—	—	—	27.04
TOTALS: DISPENSARIES ...	7,878	6,273	1	—	1	—	14,153	7,647	6,138	1	—	1	—	13,787	242	180	—	—	—	—	422	217.73	160.69	—	—	—	—	378.42
TERRITORIAL TOTALS ...	70,709	66,876	1,187	1,476	1,017	1,340	148,005	72,992	64,294	1,136	1,453	1,007	1,345	142,227	2,906	2,041	59	30	18	7	5,105	3,308.27	2,111.57	71.49	39.08	23.21	30.06	5,583.68

TABLE VI

OUT-PATIENTS—GOVERNMENT GENERAL AND SPECIAL HOSPITALS AND DISPENSARIES

Figures refer to the twelve month period 1st December, 1959—30th November, 1960

I. GENERAL HOSPITALS

Province	Total Attendances						Total New Cases					
	Males			Females			Males			Females		
	African	Asian	European	African	Asian	European	African	Asian	European	African	Asian	European
Dar es Salaam	435,104	6,021	2,797	272,585	971	2,403	719,981	1,258	2,647	63,690	448	2,200
Central	122,588	1,191	771	99,245	623	463	224,881	828	495	53,678	457	296
Eastern	146,516	1,325	1,159	100,512	964	715	251,191	760	654	44,436	415	439
Lake	286,208	875	675	233,581	577	545	522,461	668	558	84,779	468	462
Northern	239,786	646	3,425	154,815	315	3,444	492,431	525	1,854	60,861	241	2,077
Southern	184,807	1,911	801	125,130	1,247	559	314,455	1,345	492	65,624	927	368
Southern Highlands	151,237	1,328	1,044	131,974	791	856	287,230	790	844	50,446	457	653
Tanga	223,613	1,657	1,343	116,596	767	945	344,921	1,185	935	51,781	576	693
Western	164,076	1,892	934	156,024	1,598	833	325,357	1,391	649	73,446	1,170	599
West Lake	46,296	177	130	31,317	48	89	78,057	162	118	13,943	41	82
TOTAL—GENERAL HOSPITALS	2,000,231	17,023	13,079	1,421,879	7,901	10,852	3,470,965	8,912	9,246	562,679	5,230	7,869
Dar es Salaam: Infectious Diseases Hospital	11,768	24	-	8,528	10	-	20,330	600	-	315	2	-
Eastern Province: Chazi Leprosarium	3,590	23	9	2,051	10	2	5,685	1,736	7	874	6	2
Northern Province: Kibongoto Tuberculosis Hospital	3,680	160	8	2,500	70	6	6,424	989	3	709	5	-
Tanga Province: Infectious Diseases Hospital	12,240	503	-	6,843	10	-	19,596	134	-	63	-	-
Central Province: Miremba Mental Hospital	-	1	-	-	2	1	4	-	-	-	2	1
TOTAL—SPECIAL HOSPITALS	31,278	711	17	19,922	102	9	52,039	3,459	10	1,961	15	3
Central	23,231	55	3	19,036	47	-	42,372	12,007	2	9,309	31	-
Eastern	58,044	40	5	37,383	45	3	95,500	27,282	5	16,524	45	3
Lake	43,755	23	10	38,231	15	5	82,039	11,755	5	10,031	6	2
Northern	34,459	40	139	25,004	17	69	59,728	17,017	106	10,563	9	64
Southern	18,443	-	-	10,569	-	-	29,012	5,952	-	3,283	-	-
Southern Highlands	73,430	4	18	59,972	7	16	133,437	47,458	15	39,359	4	12
Tanga	84,067	1,514	21	102,230	2,206	9	190,647	39,970	11	50,273	135	4
Western	88,088	68	2	85,957	21	-	174,136	40,612	-	35,646	-	-
West Lake	16,518	-	-	14,425	-	-	30,943	9,812	-	8,262	-	-
TOTAL—DISPENSARIES	440,635	1,744	198	392,757	2,358	102	837,824	211,865	144	183,250	230	85
TERRITORIAL TOTAL	2,472,144	19,478	13,294	1,834,588	10,361	10,963	4,360,828	967,479	9,400	747,890	5,475	7,957
												1,747,462

TABLE VII
MATERNITY AND CHILD HEALTH SERVICES

PROVINCE	Ante-Natal Clinics			Child Health Clinics			Total Confinements attended	Deliveries without Complications	Deliveries with Complications	Abortions	Live Births	Still Births	Maternal Deaths	Deaths of Infants	
	No. of Clinics	First attendances	Total attendances	No. of Clinics	First attendances	Total attendances									
A. GOVERNMENT SERVICES	Central	4	2,121	8,869	4	1,519	11,080	810	275	164	1,018	86	28	32	
	Eastern	5	2,323	7,796	5	749	5,222	1,168	190	150	1,282	76	9	28	
	Lake	3	6,191	20,421	3	2,562	14,679	3,330	559	353	3,164	197	16	40	
	Northern	17	6,449	26,183	17	3,447	29,822	2,549	270	107	2,430	119	5	29	
	Southern	7	1,915	11,066	7	2,263	21,731	1,172	127	26	1,144	50	12	30	
	Southern Highlands	6	3,274	11,715	3	1,857	17,509	1,890	396	121	1,796	127	14	53	
	Tanga	12	4,643	20,490	12	5,002	45,474	1,554	219	225	1,458	138	26	49	
	Western	9	5,429	17,595	9	2,946	15,546	3,355	424	168	3,202	164	29	100	
	West Lake	1	1,206	4,645	1	461	3,128	678	255	21	610	68	10	23	
	Dar es Salaam	4	4,977	27,821	4	3,310	26,059	3,261	1,287	65	3,188	155	11	105	
	Total Government Services	68	38,528	156,601	65	24,116	190,250	20,232	16,230	4,002	1,400	19,292	1,180	160	489
B. MISSION SERVICES	Central	9	5,173	17,845	8	2,117	11,060	1,867	529	154	2,347	95	17	71	
	Eastern	8	1,850	6,428	8	1,651	6,169	1,355	187	51	1,284	74	4	30	
	Lake	11	10,723	22,403	9	1,916	6,199	2,727	790	243	2,616	153	24	133	
	Northern	18	5,727	13,964	14	5,773	18,494	3,765	615	203	3,669	96	11	82	
	Southern	27	6,975	30,740	22	7,155	51,591	4,183	838	208	4,016	229	32	114	
	Southern Highlands	7	1,804	6,307	5	1,412	6,777	1,673	388	78	1,630	52	3	41	
	Tanga	15	9,008	43,041	13	6,164	28,545	2,475	570	130	2,367	144	22	65	
	Western	23	8,846	25,815	14	13,582	58,638	3,831	667	199	3,709	151	14	140	
	West Lake	7	3,556	6,980	4	1,292	8,561	732	242	110	686	62	5	31	
	Total Mission Services	125	53,662	173,523	97	41,062	196,034	23,137	18,311	4,826	1,376	22,324	1,056	132	707
	C. NATIVE AUTHORITY SERVICES	Central	34	6,795	29,269	28	5,505	25,271	4,117	152	125	4,182	92	7	87
Eastern		6	801	2,857	6	1,759	7,065	49	7	3	57	1	-	1	
Lake		17	11,611	40,891	17	6,594	38,544	3,537	211	126	3,450	93	9	45	
Northern		11	8,984	22,442	10	3,762	13,258	3,483	78	80	3,431	52	1	32	
Southern		21	5,141	29,992	21	8,132	49,451	1,218	49	51	1,204	17	6	37	
Southern Highlands		14	4,978	26,637	13	4,373	39,529	582	20	16	563	21	1	5	
Tanga		25	10,634	32,088	15	4,095	10,707	3,240	67	52	3,176	78	-	26	
Western		18	6,090	18,737	17	4,204	13,826	2,245	56	41	2,196	56	-	22	
West Lake		14	7,200	30,853	14	4,474	13,074	1,350	304	95	1,344	34	2	46	
Total Native Authority Services		160	62,234	233,766	141	42,898	210,725	19,036	944	589	19,603	444	26	301	
Territorial Total		353	154,424	563,890	303	108,076	597,009	63,349	53,577	9,772	3,365	61,219	2,680	318	1,497

TABLE VIII A
LEPROSARIA (IN-PATIENTS)—GOVERNMENT, NATIVE AUTHORITY AND VOLUNTARY AGENCY

Province	No. of Leprosaria	Leprosy patients admitted during 1960	Discharged	Absconded	Births	Deaths from Leprosy	Deaths from other causes	Leprosy patients resident at 30th November, 1960				Clinical Classification active cases			Cases on Sulphone Therapy				Burnt-out Cases		Non-Lepromatous persons resident 30th Nov. 1960		
								Men	Women	Children	Total	Lepromatous	Tuberculoïd	Mixed	Men	Women	Children	Total	Without deformity	With deformity	Adults	Children	Total
Central	164	43	60	24	...	8	334	200	95	629	412	105	112	334	200	95	629	...	...	3	33	36
Eastern	215	107	52	20	...	5	400	192	76	668	304	196	152	385	165	71	621	...	...	7	28	35
Lake	269	203	110	31	...	10	504	294	267	1,065	349	667	49	489	287	259	1,035	...	...	140	122	262
Northern	5	36	1	...	...	...	5	5	...	10	...	5	3	4	4	...	8	...	...	...	...	...
Southern	401	271	137	56	...	14	662	359	157	1,178	393	710	64	587	311	149	1,047	...	...	...	...	...
S. Highlands	194	56	50	8	...	4	264	157	53	474	244	131	99	248	143	53	444	...	...	316	210	526
Tanga	52	59	1	...	...	1	107	25	3	135	52	23	17	70	19	3	92	...	...	13	32	45
Western	87	56	21	8	...	1	234	132	77	443	323	120	...	234	128	77	439	...	...	...	...	...
West Lake
Dar es Salaam	19	33	...	...	...	...	5	2	...	7	...	5	...	...	2	...	7	...	...	...	...	...
Totals ...	19	1,406	864	432	149	20	43	2,515	1,366	728	4,609	2,079	1,962	496	2,356	1,259	707	4,322	48	121	482	441	923

TABLE VIII B
LEPROSY OUT-PATIENT CLINICS
(INCLUDING GOVERNMENT, NATIVE AUTHORITY AND VOLUNTARY AGENCY CLINICS)

PROVINCE	No. of Clinics	Total Cases under Treatment 1960			New Cases under Treatment 1960			Cases under Sulphone Treatment		
		Lepro-matous	Tuber-culoid	Indeter-minate	Total	Lepro-matous	Tuber-culoid	Indeter-minate	Total	Total
Central	20	350	1,164	248	1,762	48	413	114	575	1,684
Eastern	39	1,473	3,599	1,061	6,133	288	934	374	1,596	5,137
Lake	72	1,097	1,720	728	3,545	423	572	262	1,257	2,915
Northern	2	8	67	12	87	13	19	12	44	84
Southern	49	1,420	5,626	394	7,440	335	1,456	133	1,924	5,582
Southern Highlands	15	49	1,341	128	1,518	5	210	12	227	1,298
Tanga	46	865	2,244	2,880	5,989	119	496	690	1,305	5,428
Western	94	877	4,449	480	5,806	230	930	134	1,294	5,249
West Lake	14	146	204	167	517	17	26	3	46	495
Dar es Salaam	1	118	384	81	583	72	122	15	209	566
Totals	352	6,403	20,798	6,179	33,380	1,550	5,178	1,749	8,477	28,438
										3,181
										31,619

TABLE IX
NATIVE AUTHORITY MEDICAL SERVICES

PROVINCE	No. of Rural Health Centres	Number of Dispensaries		M.A.	R.M.A.	Dresser	Beds	New Cases			Total Attendances		
		Grade A	Grade B					Male	Female	Total	Male	Female	Total
Central...	6	12	55	7	25	65	295	298,984	299,212	598,196	556,093	567,801	1,123,894
Eastern ...	1	37	74	4	33	107	15	367,241	329,075	696,316	691,769	608,716	1,300,485
Lake ...	4	53	71	4	58	116	698	665,209	654,465	1,319,674	1,353,629	1,318,129	2,671,758
Northern ...	3	33	29	5	34	80	138	346,157	337,974	684,131	552,794	542,295	1,095,089
Southern ...	2	25	36	4	23	61	93	220,032	197,512	417,544	441,998	419,942	861,940
S. Highlands ...	1	57	17	1	56	27	-	243,095	247,773	490,868	524,915	558,367	1,083,282
Tanga ...	-	37	16	-	39	28	38	149,206	142,794	292,000	269,929	263,641	533,570
Western ...	2	24	67	2	25	95	282	340,250	351,528	691,778	629,904	669,717	1,299,621
West Lake ...	-	33	16	1	34	49	171	199,021	188,042	387,063	308,644	297,392	606,036
Total ...	19	311	381	28	327	628	1,730	2,829,195	2,748,375	5,577,570	5,329,675	5,246,000	10,575,675

TABLE XA
VOLUNTARY AGENCY HOSPITALS WITH RESIDENT MEDICAL
PRACTITIONERS

AS AT 31ST DECEMBER, 1960

Province and Agency	Hospital	Number of Beds
<i>Central Province:</i>		
Augustana Lutheran	Iambi	50
Augustana Lutheran	Kiomboi	80
Church Missionary Society	Kilimatinde	84
Church Missionary Society	Mvumi	106
Medical Missionaries of Mary	Makiungu	65
<i>Eastern Province:</i>		
Capuchin	Ifakara	178
Church Missionary Society	Berega	50
Danish Lutheran	Lugala	40
Universities Mission to Central Africa	Minaki	120
<i>Lake Province:</i>		
Africa Inland	Baraka (Leprosy)	54
Africa Inland	Kolandoto	92
Maryknoll	Kowak	26
Mennonite	Shirati	104
White Fathers	Bukumbi... ..	92
White Fathers	Kagunguli	123
White Fathers	Sumve	193
<i>Northern Province:</i>		
Lutheran, Northern Area	Machame	80
Lutheran, Northern Area	Nkoaranga	55
Medical Missionaries of Mary	Ndareda	81
Norwegian Lutheran	Haydom	65
<i>Southern Province:</i>		
Benedictine	Ndanda	190
Benedictine	Nyangao	82
Benedictine	Mnero	75
Benedictine	Peramiho	236
Universities Mission to Central Africa	Masasi	102
Universities Mission to Central Africa	Lulindi	120
Universities Mission to Central Africa	Liuli	49
<i>Southern Highlands Province:</i>		
American Baptist	Mbeya (Tuberculosis)	104
Benedictine	Lugarawa	102
Consolata Fathers	Tosamaganga	60
Consolata Fathers	Ulete	39
Swedish Evangelical... ..	Ilembula	120
<i>Tanga Province:</i>		
Lutheran, Usambara	Bumbuli	186
Universities Mission to Central Africa	Kideleko	92
Universities Mission to Central Africa	Magila	125
<i>Western Province:</i>		
Medical Missionaries of Mary	Chala	40
Medical Missionaries of Mary	Kabanga	67
Moravian	Sikonge	146
Seventh Day Adventist	Heri	70
Swedish Free... ..	Nkinga	48
<i>West Lake Province:</i>		
Church Missionary Society	Murgwanza	60
Church of Sweden	Ndolage	120
Church of Sweden	Nyakahanga	60
White Fathers	Kagondo	153
White Fathers	Rubya	62
White Fathers	Rulenge	80
TOTAL ...	46	4,326

TABLE XB
VOLUNTARY AGENCY MEDICAL SERVICES

Province	Number of Hospitals and Dispensaries	Beds	In-Patients admissions	Out-Patients	
				New Cases	Total Attendances
I.—HOSPITALS WITH DOCTORS					
Central	5	385	10,689	47,411	96,886
Eastern	4	388	6,268	46,068	163,764
Lake(a)	7	684	8,455	48,057	170,772
Northern	4	281	8,277	34,521	64,139
Southern	7	854	13,817	60,498	458,423
Southern Highlands(a)	5	425	9,162	25,533	80,210
Tanga	3	403	5,901	22,216	87,452
Western	5	371	6,317	25,784	74,214
West Lake	6	535	8,052	33,856	56,375
TOTALS.—Hospitals ...	46	4,326	76,938	343,944	1,252,235
II.—DISPENSARIES WITH OVER TWENTY BEDS					
Central(a)	5	131	2,132	12,865	30,892
Eastern	2	99	1,478	17,303	76,005
Lake	1	35	691	6,529	13,208
Northern	9	311	9,734	54,013	193,485
Southern	15	899	15,872	100,280	444,088
Southern Highlands	10	458	11,551	51,011	202,705
Tanga	6	365	6,967	28,615	95,452
Western(a)	9	390	4,359	50,831	176,652
TOTALS.—Dispensaries with over Twenty Beds ...	57	2,688	52,784	321,447	1,232,487
III.—OTHER DISPENSARIES AND CLINICS					
Central(a)	10	123	972	9,742	22,132
Eastern	32	43	1,036	103,250	335,300
Lake	15	35	670	57,251	197,162
Northern	8	47	755	21,725	45,795
Southern	28	82	4,730	76,880	438,568
Southern Highlands	27	16	1,181	127,704	320,851
Tanga	21	66	2,639	62,411	152,948
Western	30	66	959	133,750	251,003
West Lake	2	20	513	7,158	13,574
TOTALS.—Other Dispensaries and Clinics ...	173	498	13,455	599,871	1,777,333
TERRITORIAL TOTALS ...	276	7,512	143,177	1,265,262	4,262,055

(a) Complete patient records from some units not available.

TABLE
LACEDEN THERMIST WITH STATION YONGA VASTUJOV
SARAHIE XHAP
VOLUNTARY MEDICAL SERVICES

Province	Number of Hospitals and Dispensaries	Beds	Patients admitted	Patients discharged
Central	1	382	10,829	10,829
Eastern	4	388	6,258	6,258
Lake (a)	7	684	8,452	8,452
Northern	4	381	8,777	8,777
Southern	7	824	13,817	13,817
Southern Highlands	3	422	8,162	8,162
Tanga	3	402	12,801	12,801
Western	2	371	6,317	6,317
West Lake	6	222	8,022	8,022
TOTALS—Hospitals	46	4,326	76,936	76,936
Central (a)	2	121	2,122	2,122
Eastern	2	99	1,476	1,476
Lake	1	32	691	691
Northern	9	311	9,734	9,734
Southern	12	899	12,822	12,822
Southern Highlands	10	422	11,224	11,224
Tanga	6	362	4,662	4,662
Western (a)	9	320	4,729	4,729
TOTALS—Dispensaries with over Twenty Beds	57	2,662	22,781	22,781
Central (a)	10	121	972	972
Eastern	32	457	1,402	1,402
Lake	12	197	1,227	1,227
Northern	8	121	1,227	1,227
Southern	28	82	4,707	4,707
Southern Highlands	27	16	1,184	1,184
Tanga	21	68	2,629	2,629
Western	30	66	1,122	1,122
West Lake	2	20	811	811
TOTALS—Other Dispensaries and Clinics	173	498	12,422	12,422
Territorial Totals	206	7,512	142,177	142,177
(a) Complete patient records from some hospitals not available				
Central	46	4,326	76,936	76,936
Eastern	76	8,022	68,452	68,452
Lake	141	13,817	8,162	8,162
Northern	67	8,777	10,829	10,829
Southern	84	10,829	13,817	13,817
Southern Highlands	69	8,162	12,801	12,801
Tanga	121	6,317	8,022	8,022
Western	69	4,729	2,122	2,122
West Lake	68	2,122	1,476	1,476
TOTALS	51	46	62,4	62,4

Morbidity and Mortality

MORBIDITY AND MORTALITY EXPERIENCE

Diseases occurring in the main hospitals in Tanganyika are listed in accordance with the International Statistical Classification of Diseases and Causes of Death, and the statistics from which conclusions concerning morbidity and mortality are drawn are based upon returns of diseases submitted by those government and voluntary agency hospitals which have resident doctors. Table XI shows the analysis of statistics in respect of in-patients treated in those hospitals, and Table XII gives similar details regarding out-patients. The morbidity and mortality resulting from each of the disease groups are set out diagrammatically in Figure I, and are expressed as a percentage of the total in-patient admissions and out-patient attendances as recorded in Tables XI and XII. Figure II shows a more detailed analysis of the Infective and Parasitic Diseases which form the largest disease group.

The total diseases diagnosed in patients attending those hospitals, including in-patients and out-patients, rose from 1,910,960 in 1959 to 2,097,944, and the total deaths in hospitals fell slightly from 6,842 in 1959 to 6,775 in 1960. The morbidity shown as a percentage of these totals is of a very similar pattern to that of previous years.

The Infective and Parasitic group remains clearly the predominant group, though there is a slight reduction in comparison with last year.

There was little significant change in the other large groups, namely Group VIII—Respiratory Diseases, Group IX—Digestive Diseases, Groups XII and XIII—Diseases of the Skin, Bone, etc., and Group XVII—Accidents, etc. Groups III and IV, which include the nutritional diseases, show an upward trend in comparison with last year and closer examination of the statistics shows an increase in the frequency of diagnosis of kwashiorkor, vitamin deficiencies and hypochromic anaemia. The mortality statistics and diagram (Figure II) also show little variation from previous years.

The large disease groups are Group I—Infective and Parasitic Diseases, Group VIII—Respiratory Diseases and Group X—Digestive Diseases, and the relative importance of these groups as the main cause of mortality remains the same.

With regard to Figure II, the more detailed breakdown of helminthic disorders, which was introduced last year, has been continued this year, with the result that it has been possible to make a closer comparison of elements within the helminthic group than heretofore. Taken together, these disorders are second only to malaria as the most significant component of the Infective and Parasitic Group, followed in order by the venereal diseases and dysenteric disorders. The morbidity percentages within this group closely resemble those of last year, the most important rises being in respect of some of the relatively small groups, in particular smallpox and meningitis, which diseases were more prevalent in 1960.

The commonest causes of hospital deaths during 1960 were as follows:—

Pneumonia (all forms)	859
Tuberculosis (all forms)	379
Complications of pregnancy and childbirth	307
Gastro-enteritis (all ages)	297
Tetanus	294
Defective nutrition	230
Pyrexia of unknown origin	225
Malaria (all forms)	218
Meningitis	176

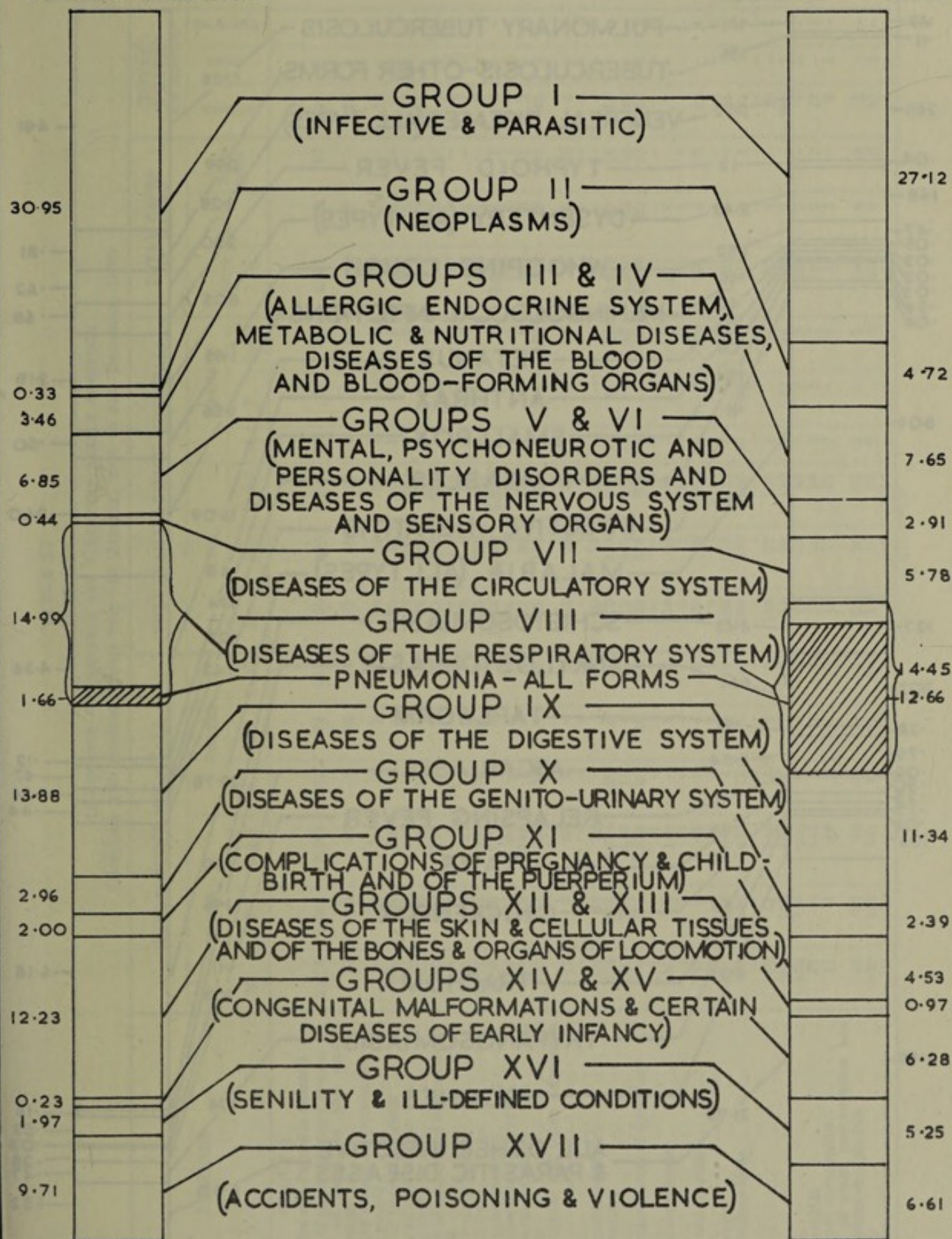
Generally speaking this order of priority resembles that of previous years, but it may be significant that malaria, though still an important cause of death, shows a considerable reduction compared with previous years.

ALL DISEASES

FIGURE I

MORBIDITY AS
PERCENTAGE
OF TOTAL DEATHS

MORTALITY AS
PERCENTAGE
OF TOTAL DEATHS



INFECTIVE & PARASITIC DISEASES

FIGURE II

MORBIDITY AS
PERCENTAGE
OF GROUP
TOTAL CASES

MORTALITY AS
PERCENTAGE
OF GROUP
TOTAL DEATHS

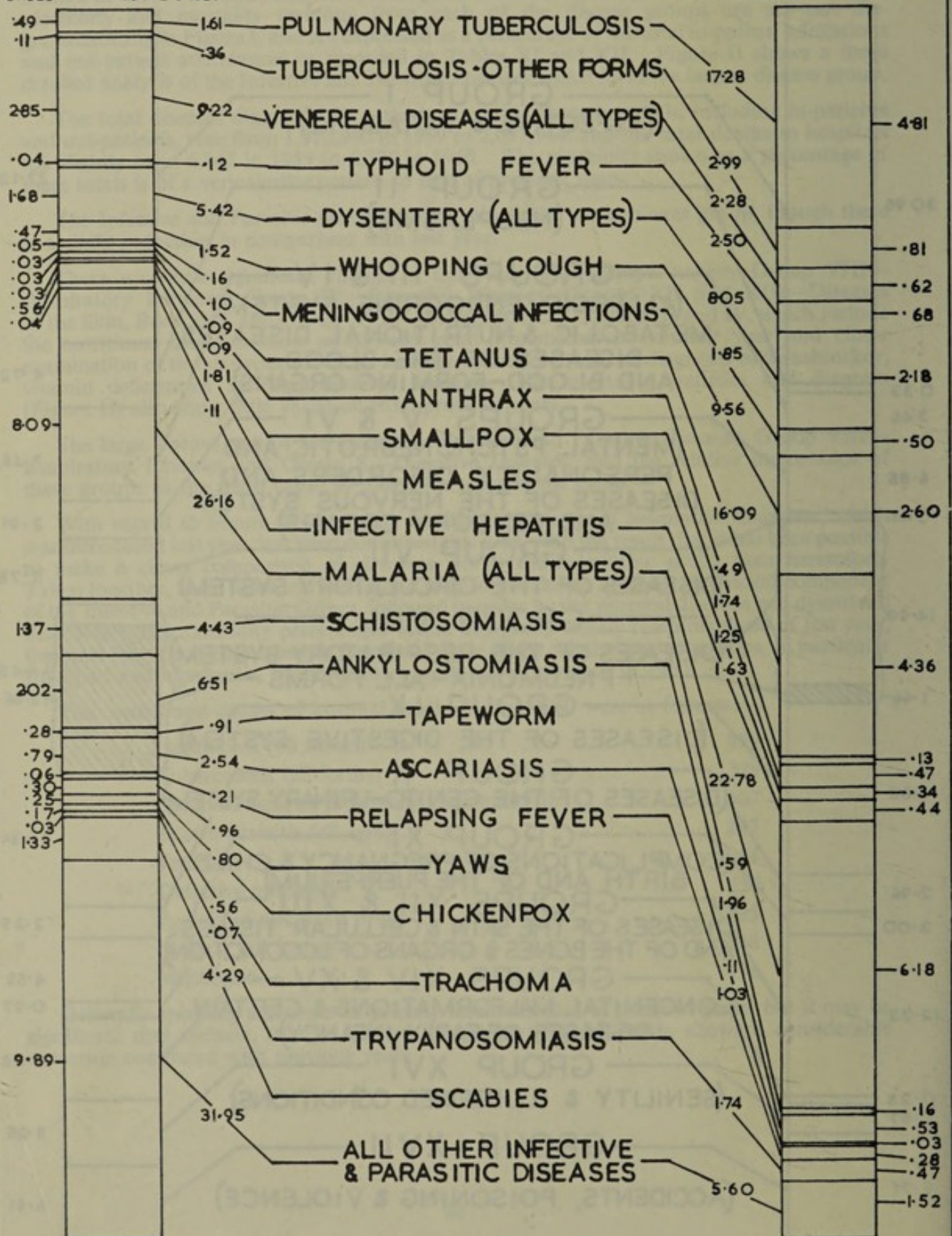


TABLE XI
DISEASESIN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS
(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS						VOLUNTARY AGENCY HOSPITALS						TOTAL CASES BY RACES				TOTAL DEATHS BY RACES				TERRITORIAL TOTALS	Percent- age Morbidity	Percent- age Mortality			
	CASES			DEATHS			CASES			DEATHS			African	Asian	Euro- pean	African	Asian	European								
	M	F	Total	M	F	Total	M	F	Total	M	F	Total														
GROUP I																										
<i>Infective and Parasitic Diseases</i>																										
Tuberculosis of the respiratory system ...																										
Tuberculosis of meninges and central nervous system ...																										
Tuberculosis of intestines, peritoneum and mesenteric glands ...																										
Tuberculosis of bones and joints ...																										
Tuberculosis, all other forms ...																										
Congenital Syphilis ...																										
Early syphilis (Primary and Secondary)...																										
Tuberculous ...																										
General paralysis of insane ...																										
All other syphilis ...																										
Gonorrhoea, genito-urinary ...																										
Gonococcal infection of the eye ...																										
Other gonococcal infections ...																										
Typhoid fever ...																										
Paratyphoid fever and other Salmonella infections ...																										
Cholera ...																										
Brucellosis (undulant fever) ...																										
Bacillary dysentery ...																										
Amoebiasis ...																										
Other unspecified forms of dysentery ...																										
Scarlet fever...																										
Streptococcal sore throat ...																										
Erysipelas ...																										
Septicaemia and pyaemia ...																										
Diphtheria ...																										
Whooping cough ...																										
Meningococcal infections ...																										
Plague ...																										
Leprosy ...																										
Tetanus ...																										
Anthrax ...																										
Acute poliomyelitis ...																										
Acute infections encephalitis ...																										
Late effects of acute poliomyelitis and acute infections encephalitis ...																										
Varicella major ...																										
Varicella minor ...																										

TABLE XI—(contd.)

DISEASES

IN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS				VOLUNTARY AGENCY HOSPITALS				TOTAL CASES BY RACES				TOTAL DEATHS BY RACES			TERRITORIAL TOTALS		Percent-age Morbidity
	CASES			DEATHS			CASES			DEATHS			African	Asian	European	Cases	Deaths	
	M	F	Total	M	F	Total	M	F	Total	M	F	Total						
Measles	736	688	1,424	6	7	13	384	451	835	5	5	10	2,232	20	2,259	23	0-339	
Yellow fever	378	136	514	18	5	23	104	115	219	1	6	7	697	10	733	30	0-442	
Infectious hepatitis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rabies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Louse-borne epidemic typhus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Flea-borne endemic typhus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tick-borne typhus	8	3	11	-	-	-	2	8	10	-	-	-	18	-	-	-	-	
Mite-borne typhus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Typus unspecified and other rickettsial diseases	11	6	17	-	-	-	4	1	5	-	-	-	18	2	21	-	0-009	
Vivax malaria (benign tertian)	698	523	1,221	10	2	12	578	601	1,179	7	2	9	2,338	52	2,400	21	0-009	
Malariae malaria (quartan)	61	60	121	-	1	1	128	187	315	2	3	5	414	13	436	6	0-983	
Falciparum malaria (malignant tertian)	2,823	2,021	4,844	64	38	102	2,789	3,197	5,986	35	52	87	10,514	132	10,830	189	4-434	
Blackwater fever	2	1	3	-	-	-	3	2	5	1	1	2	8	8	8	2	0-003	
Other and unspecified forms of malaria	3,365	2,194	5,559	58	41	99	1,961	2,420	4,381	44	58	102	9,663	107	9,940	201	4-070	
Schistosomiasis vesical (S. Laematobium)	598	256	854	4	1	5	1,415	1,052	2,467	1	1	2	3,309	8	3,321	7	1-360	
Schistosomiasis intestinal (S. Mansonii)	227	118	345	2	-	2	173	133	306	1	-	1	641	4	651	3	0-267	
Schistosomiasis pulmonary (S. japonicum)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other and unspecified schistosomiasis	71	29	100	1	-	1	12	17	29	-	-	-	126	1	129	1	0-053	
Hydatid disease	7	6	13	-	-	-	2	5	7	-	-	-	20	-	20	-	0-008	
Filaria (bancrofti)	123	17	140	-	-	-	102	37	139	-	-	-	278	-	279	-	0-114	
Onchocerciasis	3	4	7	-	-	-	-	-	-	-	-	-	6	-	6	-	0-003	
Other filariasis	81	6	87	1	1	2	13	4	17	-	-	-	104	-	104	2	0-043	
Ankylostomiasis	1,837	1,280	3,117	14	11	25	2,366	2,571	4,937	5	6	11	7,992	38	8,054	36	3-297	
Tapeworm and other cestode infestations	283	140	423	-	-	-	372	410	782	-	-	-	1,184	8	1,205	-	0-493	
Ascariasis	566	407	973	-	-	-	714	912	1,626	2	-	2	2,553	11	2,599	2	1-064	
Guinea worm (dracunculosis)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0-070	
Other diseases due to helminths	220	97	317	1	-	1	128	122	250	1	-	1	557	9	567	1	0-232	
Lymphogranuloma venereum	11	6	17	1	-	1	9	3	12	1	-	1	28	1	29	2	0-012	
Granuloma inguinale, venereal	11	1	12	-	-	-	5	-	5	-	-	-	17	-	17	-	0-007	
Chancroid and other unspecified venereal diseases	29	8	37	2	-	2	3	6	9	-	-	-	46	-	46	2	0-019	
Food poisoning infection and intoxication	111	107	218	4	7	11	16	17	33	-	3	3	248	2	251	14	0-103	
Relapsing fever, louse-borne	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Relapsing fever, tick-borne	190	144	334	7	4	11	83	216	299	4	4	8	627	4	633	19	0-259	
Leptospirosis icterohaemorrhagica (Weil's disease)	2	1	3	-	-	-	2	-	2	1	-	1	5	-	5	1	0-002	
Yaws	55	25	80	-	-	-	119	88	207	-	-	-	286	-	287	-	0-118	
Chickenpox	219	99	318	-	-	-	48	26	74	-	-	-	387	2	392	-	0-160	
Mumps	51	23	74	-	-	-	26	15	41	-	-	-	113	-	115	-	0-047	
Dengue	-	1	1	-	-	-	16	17	33	-	-	-	33	-	34	-	0-014	
Trachoma	76	46	122	-	-	-	136	152	288	-	-	-	408	2	410	-	0-168	

TABLE XI—(contd.)

DISEASES

IN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS						VOLUNTARY AGENCY HOSPITALS						TOTAL CASES BY RACES				TOTAL DEATHS BY RACES			TERRI- TORIAL TOTALS		Percent- age Morbidity	Percent- age Mortality	
	CASES			DEATHS			CASES			DEATHS			African	Asian	Euro- pean	African	Asian	European	Cases	Deaths				
	M	F	Total	M	F	Total	M	F	Total	M	F	Total												
Sandfly fever	—	1	1	—	—	—	—	—	14	—	—	—	15	—	—	—	—	—	—	15	—	—	0-006	—
Leishmaniasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trypanosomiasis gambiense	11	4	15	4	—	4	2	—	3	—	—	—	19	—	—	—	—	—	—	20	4	0-008	0-055	
Trypanosomiasis rhodesiensis	221	55	276	13	2	15	55	4	73	4	—	4	349	—	—	—	—	—	—	349	19	0-143	0-280	
Other and unspecified trypanosomiasis	57	20	77	5	1	6	7	—	14	1	—	2	90	—	—	—	—	—	—	91	8	0-037	0-118	
Dermatophytosis	21	7	28	—	—	—	46	—	93	—	—	—	113	6	—	—	—	—	—	121	—	0-050	—	
Scabies	201	144	345	—	—	—	299	—	646	—	—	—	945	41	5	—	—	—	—	991	—	0-406	—	
All other diseases classified as infective and parasitic	191	134	325	2	1	3	215	2	360	2	2	4	658	19	8	7	—	—	—	685	7	0-280	0-103	
GROUP II																								
Neoplasms																								
Malignant neoplasm of buccal cavity and pharynx	12	9	21	—	2	2	21	3	30	3	—	3	49	2	—	—	—	—	—	51	5	0-021	0-074	
Malignant neoplasm of oesophagus	5	1	6	2	—	2	7	—	14	—	—	1	19	—	—	—	—	—	—	20	5	0-008	0-074	
Malignant neoplasm of stomach	30	26	56	13	2	15	49	12	70	12	5	17	122	1	3	31	1	—	—	126	32	0-052	0-472	
Malignant neoplasm of intestine, except rectum	9	13	22	2	2	4	23	3	39	3	7	10	60	1	—	14	—	—	—	61	14	0-025	0-206	
Malignant neoplasm of rectum	3	3	6	1	1	2	9	—	18	—	—	1	24	—	—	3	—	—	—	24	3	0-010	0-044	
Malignant neoplasm of larynx	3	2	5	2	—	2	1	—	5	—	—	—	10	—	—	2	—	—	—	10	2	0-004	0-030	
Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	11	2	13	3	1	4	20	5	25	3	3	6	36	2	—	10	—	—	—	38	10	0-016	0-147	
Malignant neoplasm of breast	—	37	37	—	—	—	—	—	36	—	—	1	67	3	3	1	—	—	—	73	1	0-030	0-015	
Malignant neoplasm of cervix uteri	—	131	131	—	8	8	—	—	111	—	9	9	235	6	1	17	—	—	—	242	17	0-099	0-251	
Malignant neoplasm of other and unspecified parts of uterus	—	60	60	—	7	7	—	—	65	—	—	1	121	4	—	8	—	—	—	125	8	0-051	0-118	
Malignant neoplasm of prostate	56	—	56	17	—	17	67	10	67	10	—	10	120	3	—	25	2	—	—	123	27	0-050	0-398	
Malignant neoplasm of skin	66	37	103	3	—	3	19	—	35	—	—	—	136	—	2	3	—	—	—	138	3	0-057	0-044	
Malignant neoplasm of bone and connective tissue	50	31	81	5	8	13	31	26	57	1	1	2	136	1	1	15	—	—	—	138	15	0-057	0-221	
Malignant neoplasm of liver and biliary passages	124	46	170	35	11	46	87	43	130	17	7	24	286	9	5	68	—	2	—	300	70	0-123	1-032	
Malignant neoplasm of all other and unspecified sites	144	114	258	16	18	34	85	13	166	13	13	26	410	9	5	54	4	2	—	424	60	0-174	0-885	
Leukaemia and leukaemia	27	15	42	5	3	8	14	4	30	4	2	6	68	4	—	13	1	—	—	72	14	0-029	0-206	
Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	35	11	46	3	1	4	14	10	24	4	2	6	67	3	—	10	—	—	—	70	10	0-029	0-147	
Benign neoplasms and neoplasms of unspecified nature	385	748	1,133	5	10	15	168	699	857	2	7	9	1,010	50	30	24	—	—	—	1,990	24	0-815	0-354	

Territorial Totals—Group I. Cases 71,850. Deaths 1,835.
Group II. Cases 4,025. Deaths 320.

TABLE XI—(contd.)

DISEASES

IN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS						VOLUNTARY AGENCY HOSPITALS						TOTAL CASES BY RACES				TOTAL DEATHS BY RACES				TERRITORIAL TOTALS		Percent- age Morbidity	Percent- age Mortality	
	CASES			DEATHS			CASES			DEATHS			African	Asian	Euro- pean	African	Asian	European	Cases	Deaths					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total													
GROUPS III & IV																									
<i>Allergic, Endocrine system, Metabolic and Nutritional Diseases, and Diseases of the Blood, and Blood-Forming Organs</i>																									
Nontoxic goitre	10	50	60	—	1	1	14	83	97	—	2	2	149	3	5	3	3	—	—	157	3	0-044	0-044		
Thyrotoxicosis with or without goitre	3	13	16	—	—	—	3	12	15	—	—	—	24	5	2	—	—	—	—	31	—	0-013	—		
Diabetes mellitus	150	50	200	19	4	23	74	25	99	6	2	8	241	46	12	28	3	—	—	299	81	0-122	0-457		
Beriberi	39	9	48	2	2	4	25	24	49	—	1	1	95	1	1	5	—	—	—	97	5	0-040	0-074		
Pellagra	53	32	85	1	1	2	27	21	48	—	2	2	131	15	—	3	—	—	—	133	3	0-054	0-044		
Scurvy	20	13	33	4	2	6	65	79	144	1	1	1	162	3	—	7	—	—	—	177	7	0-072	0-103		
Kwashiorkor	460	460	920	55	57	112	303	305	608	19	15	34	1,523	3	2	146	—	—	—	1,528	146	0-625	2-153		
Other deficiency states	379	324	703	21	25	46	614	744	1,358	12	11	23	2,021	36	4	69	—	—	—	2,061	69	0-844	1-018		
Pernicious and other hyperchromic anaemias	137	139	276	16	15	31	46	106	152	4	6	10	421	3	2	41	—	—	—	428	41	0-175	0-605		
Iron deficiency anaemias (hypochromic)	546	530	1,126	17	16	33	1,220	1,940	3,160	17	26	43	4,226	58	4	76	—	—	—	4,286	76	1-755	1-121		
Other specified and unspecified anaemias	507	623	1,130	42	32	74	716	1,094	1,810	11	17	28	2,872	63	5	101	1	—	—	2,940	102	1-504	1-504		
Asthma	588	379	967	8	2	10	238	176	414	4	3	7	1,311	47	23	17	—	—	—	1,381	17	0-565	0-251		
Other allergic disorders, endocrine, metabolic and blood diseases	175	140	315	6	6	12	197	217	414	4	3	7	661	47	21	18	1	—	—	729	19	0-298	0-230		
GROUP V																									
<i>Mental, Psychoneurotic and Personality Diseases</i>																									
Psychoses	74	60	134	—	1	1	57	78	135	—	1	1	259	1	9	2	—	—	—	269	2	0-110	0-030		
Psychoneuroses and disorders of personality	98	100	198	1	1	2	81	113	194	—	—	—	363	10	19	2	—	—	—	392	2	0-160	0-030		
Mental deficiency	153	75	228	3	3	6	15	14	29	—	—	—	240	17	—	6	—	—	—	257	6	0-105	0-038		
GROUP VI																									
<i>Diseases of the Nervous System and Sense Organs</i>																									
Vascular lesions affecting central nervous system	87	32	119	24	7	31	59	30	89	9	4	13	192	8	8	42	1	1	—	208	44	0-085	0-645		
Nonmeningococcal meningitis	192	89	281	46	19	65	82	76	158	20	13	33	429	7	3	98	—	—	—	439	98	0-180	1-445		
Multiple sclerosis	8	6	14	—	1	1	2	4	6	—	—	—	18	2	—	1	—	—	—	20	1	0-008	0-013		
Epilepsy	146	96	242	6	1	7	34	26	60	1	—	1	290	8	4	8	—	—	—	302	8	0-114	0-114		
Inflammatory diseases of eye	643	392	1,035	—	1	1	870	955	1,825	—	—	—	2,800	50	10	1	—	—	—	2,860	1	1-171	0-015		
Cataract	140	43	183	—	—	—	275	111	386	—	—	—	551	15	3	—	—	—	—	569	1	0-233	0-015		
Glaucoma	17	6	23	—	—	—	27	13	40	—	—	—	61	2	—	—	—	—	—	63	—	0-026	—		
Otitis externa	77	51	128	—	—	—	61	63	129	—	—	—	249	7	1	—	—	—	—	257	—	0-105	—		

Territorial Totals—Groups III & IV, Cases 14,247, Deaths 519.
Group V, Cases 918, Deaths 10.

TABLE XI—(contd.)

DISEASES

IN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS
(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS				VOLUNTARY AGENCY HOSPITALS				TOTAL CASES BY RACES				TOTAL DEATHS BY RACES			TERRI- TORIAL TOTALS		Percent- age Morbid- ity	Percent- age Mortali- ty
	CASES		DEATHS		CASES		DEATHS		African	Asian	Euro- pean	African	Asian	European	Cases	Deaths			
	M	F	Total	M	F	Total	M	F									Total		
Otitis media and mastoiditis	148	125	273	2	3	5	213	153	366	2	—	2	7	—	639	7	0.262	0.100	
Other inflammatory diseases of ear	60	33	93	—	1	1	79	89	168	—	—	—	1	—	261	1	0.107	0.010	
All other diseases and conditions of eye	342	216	558	1	2	3	348	458	806	2	—	2	5	—	1,364	5	0.558	0.070	
All other diseases of the nervous system and sense organs	257	203	460	8	7	15	223	166	389	4	3	7	22	—	849	22	0.348	0.320	
GROUP VII																			
<i>Diseases of the Circulatory System</i>																			
Rheumatic fever	132	67	199	1	—	1	45	35	80	—	—	—	1	—	273	1	0.114	0.010	
Chronic rheumatic heart disease	46	50	96	8	9	17	69	53	122	6	2	8	24	—	213	25	0.089	0.360	
Arteriosclerotic and degenerative heart disease	31	27	58	7	5	12	93	98	191	14	13	27	35	2	249	39	0.102	0.570	
Other diseases of the heart	442	322	764	93	66	159	249	268	517	35	26	61	214	5	1,281	220	0.524	3.240	
Hypertension with heart disease	118	72	190	11	12	23	57	35	92	10	3	13	32	4	282	36	0.115	0.530	
Hypertension without mention of heart	67	31	98	3	1	4	30	40	70	1	—	1	9	—	168	5	0.069	0.070	
Diseases of arteries	37	17	54	8	5	13	26	20	46	—	1	1	14	—	100	14	0.041	0.200	
Other diseases of circulatory system	249	135	384	28	12	40	174	152	326	10	2	12	50	1	710	52	0.291	0.760	
GROUP VIII																			
<i>Diseases of the Respiratory System</i>																			
Acute upper respiratory infections	422	278	700	11	2	13	449	529	978	9	3	12	24	1	1,678	25	0.687	0.360	
Influenza	63	87	150	—	—	—	189	283	472	1	1	2	2	—	622	2	0.255	0.030	
Lobar pneumonia	3,023	1,961	4,984	99	77	176	1,005	1,113	2,208	52	44	96	272	—	7,192	272	2.945	4.010	
Bronchopneumonia	2,144	2,094	4,238	172	212	384	1,138	1,075	2,213	74	71	145	522	6	6,451	529	2.641	7.800	
Primary, atypical, other and unspecified pneumonia	550	276	826	16	11	27	165	170	335	16	15	31	57	1	1,161	58	0.475	0.850	
Acute bronchitis	1,318	1,026	2,344	8	8	16	595	738	1,333	10	4	14	30	—	3,677	30	1.505	0.440	
Bronchitis, chronic and unqualified	824	689	1,513	9	2	11	244	306	550	1	—	1	12	—	2,063	12	0.845	0.170	
Hypertrophy of tonsils and adenoids	280	203	483	1	—	1	103	116	219	—	—	—	1	—	702	1	0.287	0.010	
Empyema and abscess of lung	83	28	111	7	1	8	41	23	64	3	5	8	16	—	175	16	0.072	0.230	
Pleurisy (other than tuberculous)	117	52	169	1	—	1	85	74	159	2	—	—	1	—	328	1	0.134	0.010	
Pneumoconiosis	16	19	35	1	—	1	25	11	36	3	—	3	3	—	71	4	0.031	0.050	
All other respiratory diseases	532	311	843	7	9	16	437	398	835	10	4	14	29	1	1,678	30	0.687	0.440	
GROUP IX																			
<i>Diseases of the Digestive System</i>																			
Dental Caries	118	92	210	—	—	—	201	217	418	1	—	1	1	—	628	1	0.257	0.010	

Territorial Totals—Group VI. Cases 7,831. Deaths 187.
Group VII. Cases 3,287. Deaths 392.
Group VIII. Cases 25,802. Deaths 980.

TABLE XI—(contd.)
DISEASESIN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS
(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS						VOLUNTARY AGENCY HOSPITALS						TOTAL CASES BY RACES			TOTAL DEATHS BY RACES			TERRI- TORIAL TOTALS		Percent- age Morbidity	Percent- age Mortality				
	CASES			DEATHS			CASES			DEATHS			African	Asian	Euro- pean	African	Asian	European	Cases	Deaths						
	M	F	Total	M	F	Total	M	F	Total	M	F	Total														
All other diseases of teeth and supporting structures	132	99	231	2	—	2	157	168	325	—	1	1	3	—	—	13	3	—	523	20	13	3	556	3	0.228	0.04
Ulcer of stomach	107	31	138	6	1	7	107	68	175	3	1	4	11	—	—	11	11	—	291	11	11	11	313	11	0.128	0.16
Ulcer of duodenum	85	13	98	2	1	3	90	42	132	1	3	4	15	—	—	10	7	—	205	15	10	7	230	7	0.094	0.10
Gastritis and duodenitis	221	158	379	2	2	4	192	21	367	7	—	—	700	—	—	4	4	—	700	21	746	4	746	4	0.305	0.05
Appendicitis	243	145	388	5	2	7	118	89	207	3	1	4	106	—	—	78	7	—	411	106	78	7	595	11	0.244	0.16
Intestinal obstruction and hernia... ..	2,560	223	2,783	118	19	137	1,076	231	1,307	57	15	72	3,969	—	—	36	208	—	3,969	85	36	208	4,090	209	1.075	3.08
Gastro-enteritis and colitis:—																										
(a) between 4 weeks and 2 years	812	709	1,521	54	50	104	680	594	1,274	36	32	68	2,751	—	—	18	169	—	2,751	26	18	169	2,795	172	1.144	2.53
(b) ages 2 years and over	1,263	951	2,214	70	37	107	366	452	818	9	9	18	2,949	—	—	51	123	—	2,949	32	51	123	3,032	125	1.241	1.84
Chronic enteritis and ulcerative colitis	54	33	87	2	5	7	39	40	79	1	—	1	157	—	—	6	8	—	157	6	3	8	166	8	0.068	0.11
Cirrhosis of the liver	304	129	433	55	17	72	120	76	196	12	9	21	618	—	—	9	2	—	618	9	2	91	629	93	0.258	1.37
Cholelithiasis and cholecystitis	35	43	78	1	2	3	33	36	69	1	1	2	112	—	—	15	5	—	112	15	20	5	147	5	0.060	0.07
Other diseases of the digestive system	2,275	1,948	4,223	54	38	92	748	722	1,470	19	9	28	5,412	—	—	112	116	—	5,412	169	112	116	5,693	120	2.331	1.77
GROUP X																										
<i>Diseases of the Genito-Urinary System</i>																										
Acute nephritis	74	60	134	5	6	11	82	78	160	1	6	7	290	—	—	2	18	—	290	2	2	18	294	18	0.120	0.26
Chronic, other and unspecified nephritis	110	61	171	15	7	22	110	87	197	8	2	10	343	—	—	21	29	—	343	21	4	29	368	32	0.151	0.47
Infections of kidney (other than tubercu- lous)	51	31	82	4	1	5	104	96	200	1	—	1	261	—	—	11	6	—	261	11	10	6	282	6	0.115	0.08
Calculus of urinary system	39	4	43	2	—	2	50	63	113	1	—	1	143	—	—	9	3	—	143	9	4	3	156	3	0.064	0.04
Hyperplasia of prostate	214	—	214	16	—	16	143	—	143	4	4	8	349	—	—	4	19	—	349	4	4	19	357	20	0.295	0.20
Diseases of breast	—	195	195	—	—	—	—	160	160	—	1	1	347	—	—	4	1	—	347	4	4	1	355	1	0.145	0.015
Hydrocele	1,249	—	1,249	3	—	3	666	—	666	1	—	1	1,894	—	—	18	4	—	1,894	18	3	4	1,915	4	0.784	0.059
Disorders of menstruation	—	895	895	—	3	3	—	919	919	—	1	1	1,715	—	—	70	3	—	1,715	70	29	3	1,814	4	0.743	0.059
All other diseases of the genito-urinary system	1,781	2,237	4,018	33	23	56	1,220	2,313	3,533	13	5	18	7,184	—	—	192	70	—	7,184	192	175	70	7,551	74	0.092	1.091
GROUP XI																										
<i>Deliveries and Complications of Pregnancy, Childbirth and the Puerperium</i>																										
Sepsis of pregnancy, childbirth and the puerperium	—	253	253	—	6	6	—	298	298	—	8	8	544	—	—	7	14	—	544	7	—	14	551	14	0.226	0.206
Toxaemias of pregnancy and the puerpe- rium	—	302	302	—	17	17	—	122	122	—	1	1	407	—	—	11	18	—	407	11	6	18	424	18	0.174	0.265
Haemorrhage of pregnancy and childbirth	—	276	276	—	16	16	—	444	444	—	13	13	694	—	—	15	28	—	694	15	11	28	720	29	0.295	0.498

Territorial Totals—Group IX. Cases 19,620. Deaths 769.
Group X. Cases 13,092. Deaths 162.

TABLE XI—(contd.)

DISEASES

IN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS				VOLUNTARY AGENCY HOSPITALS				TOTAL CASES BY RACES			TOTAL DEATHS BY RACES			TERRI- TORIAL TOTALS		Percent- age Morbidity	Percent- age Mortal- ity	
	CASES		DEATHS		CASES		DEATHS		African	Asian	Euro- pean	African	Asian	European	Cases	Deaths			
	M	F	Total	M	F	Total	M	F											Total
Abortion, without mention of sepsis or toxæmia	—	1,853	1,853	—	3	3	—	—	882	882	—	2,581	97	57	—	2,735	3	1-120	0-044
Abortion with sepsis	—	329	329	—	4	4	—	3	122	122	—	433	11	7	—	451	7	0-185	0-108
Other complications of pregnancy, child- birth and the puerperium	—	3,877	3,877	—	—	167	—	48	2,770	2,770	48	6,401	154	92	3	6,647	215	2-721	3-171
Delivery without complications	—	14,935	14,935	—	17	17	—	4	7,290	7,290	4	21,322	583	320	—	22,225	21	9-099	0-310
GROUPS XII AND XIII																			
<i>Diseases of the Skin and Cellular Tissues, and Diseases of the Bones and Organs of Movement</i>																			
Infections of skin and subcutaneous tissue	2,255	1,064	3,319	12	13	25	812	—	717	1,529	4	4,732	60	56	—	4,848	29	1-985	0-425
Arthritis and spondylitis	580	238	818	1	—	1	275	—	198	473	—	1,265	14	12	—	1,291	1	0-529	0-015
Muscular rheumatism and rheumatism unspecified	438	242	680	—	1	1	303	—	312	615	2	1,271	7	17	—	1,295	3	0-530	0-044
Osteomyelitis and periostitis	334	141	475	3	1	4	115	—	93	208	2	673	8	2	—	683	6	0-280	0-088
Ankylosis and acquired musculo-skeletal deformities	54	34	88	1	—	1	48	—	24	72	—	151	2	7	—	160	1	0-066	0-015
Chronic ulcer of skin (includes tropical ulcer)	1,134	466	1,600	—	2	2	543	—	363	906	—	2,480	11	15	—	2,506	2	1-026	0-036
All other skin diseases	462	227	689	1	2	3	355	—	241	596	—	1,226	43	16	—	1,285	3	0-526	0-044
All other diseases of the musculo-skeletal system	1,000	535	1,535	11	8	19	271	1	245	516	1	1,956	58	37	—	2,051	21	0-840	0-310
GROUP XIV																			
<i>Congenital Malformations</i>																			
Spina bifida and meningocele	10	9	19	1	—	1	9	—	4	13	—	29	3	—	—	32	3	0-013	0-044
Congenital malformations of circulatory system	12	6	18	3	2	5	6	4	6	12	2	29	1	—	—	30	11	0-012	0-162
All other congenital malformations	63	67	130	6	7	13	54	3	74	128	3	244	12	2	—	258	19	0-106	0-280
GROUP XV																			
<i>Certain Diseases of Early Infancy</i>																			
Birth injuries	7	16	23	6	2	8	22	14	48	26	12	68	2	1	—	71	34	0-029	0-501
Postnatal asphyxia and atelectasis	—	24	24	—	3	3	53	14	103	20	6	127	—	—	—	127	23	0-052	0-339
Diarrhoea of newborn (under 4 weeks)	79	37	116	5	3	8	44	2	29	73	2	185	—	—	—	189	10	0-077	0-147
Ophthalmia neonatorum	14	10	24	—	—	—	21	—	22	43	—	67	—	—	—	67	—	0-027	—

Territorial Totals—Group XI, Cases 33,753, Deaths 307, Groups XII and XIII, Cases 14,119, Deaths 66, Group XIV, Cases 320, Deaths 33.

TABLE XI—(contd).
DISEASESIN-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS
(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS						VOLUNTARY AGENCY HOSPITALS						TOTAL CASES BY RACES				TOTAL DEATHS BY RACES			TERRITORIAL TOTALS		Percent- age Morbidity	Percent- age Mortality		
	CASES			DEATHS			CASES			DEATHS			African	Asian	Euro- pean	African	Asian	European	Cases	Deaths					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total													
Other infections of newborn	17	16	33	4	3	7	31	5	24	55	6	11	86	2	—	—	18	—	—	—	88	18	0-036	0-26	
Haemolytic disease of newborn	—	5	5	—	1	1	6	3	—	6	—	3	10	1	—	—	4	—	—	—	11	4	0-005	0-00	
All other defined diseases of early infancy...	45	41	86	8	4	12	36	10	59	95	19	29	177	4	—	—	40	1	—	—	181	41	0-074	0-60	
Ill-defined diseases peculiar to early infancy, and immaturity (all types)	139	129	268	28	32	60	234	191	319	553	112	203	796	20	5	—	260	3	—	—	821	263	0-336	3-87	
GROUP XVI																									
<i>Symptoms, Senility and Ill-defined Conditions</i>																									
Senility without mention of psychosis	117	65	182	21	6	27	93	10	109	202	2	12	356	18	10	—	38	—	1	—	384	39	0-157	0-57	
Pyrexia of unknown origin	3,391	2,455	5,846	95	81	176	1,070	28	1,201	2,271	21	49	7,964	73	80	—	224	1	—	—	8,117	225	3-323	3-31	
Observation without need for further medi- cal care	553	737	1,290	5	2	7	541	4	823	1,364	2	6	2,512	100	42	—	13	—	—	—	2,654	13	1-086	0-19	
All other ill-defined causes of morbidity...	804	602	1,406	9	8	17	396	32	450	846	30	62	2,059	78	115	—	74	5	—	—	2,252	79	0-922	1-16	
GROUP XVII																									
<i>Accidents, Poisoning and Violence</i>																									
Fracture of skull	301	39	340	52	13	65	43	5	8	51	—	5	360	17	14	—	68	2	—	—	391	70	0-160	1-03	
Fracture of spine and trunk	316	41	357	19	1	20	46	5	18	64	1	6	395	9	17	—	26	—	—	—	421	26	0-172	0-38	
Fracture of limbs	3,472	1,139	4,611	32	6	38	378	1	172	550	1	2	4,940	144	77	4	32	4	4	4	5,161	40	2-113	0-59	
Dislocation without fracture	431	127	558	—	1	1	66	—	39	105	—	—	652	6	5	—	1	—	—	—	663	1	0-271	0-01	
Sprains and strains of joints and adjacent muscles	664	188	852	—	1	1	160	—	85	245	—	—	1,051	27	19	—	1	—	—	—	1,097	1	0-449	0-01	
Head injury (excluding fracture)...	533	144	677	21	6	27	132	2	40	172	2	2	801	30	18	—	27	2	—	—	849	29	0-348	0-42	
Internal injury of chest, abdomen and pelvis	156	25	181	28	2	30	34	7	16	50	2	9	222	8	1	—	37	2	—	—	231	39	0-095	0-57	
Laceration and open wounds	3,684	825	4,509	30	11	41	643	3	261	904	3	3	5,312	62	39	—	44	—	—	—	5,413	44	2-126	0-65	
Superficial injury, contusion and crushing with intact skin surface	1,216	451	1,667	7	2	9	265	2	99	364	2	2	1,965	37	29	—	11	—	—	—	2,031	11	0-832	0-16	
Effects of foreign body entering orifice	179	75	254	—	—	—	69	—	40	109	—	—	350	4	9	—	—	—	—	—	363	—	0-149	—	
Burns	675	477	1,152	40	35	75	183	8	127	310	8	16	1,436	23	3	—	86	5	—	—	1,462	91	0-599	1-34	
Effects of poisons	338	203	541	10	7	17	148	31	156	304	26	57	808	26	11	—	73	1	—	—	845	74	0-346	1-09	
All other and unspecified effects of external causes	765	331	1,096	12	6	18	236	2	162	398	2	4	1,434	32	28	—	21	—	1	—	1,494	22	0-612	0-32	
Totals	74,739	68,083	142,822	2,590	1,850	4,440	43,420	1,108	58,001	101,421	2,335	2,335	236,664	4,550	3,029	6,035	100	49	244,243	6,775	100-000	100-000	100-000	100-000	

Territorial Totals—Group XV. Cases 1,555. Deaths 393.
Group XVI. Cases 13,407. Deaths 356.
Group XVII. Cases 20,421. Deaths 448.

TABLE XII

DISEASES

OUT-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS			VOLUNTARY AGENCY HOSPITALS			Total African	Total Asian	Total European	Territorial Total	Group Total	Percentage Morbidity
	Males		Total	Males		Total						
	Females	Females		Females	Females							
GROUP I												
Infective and Parasitic Diseases (and influenza, all types meningitis and eye diseases)												
Tuberculosis of the respiratory system	2,655	1,434	4,089	794	545	1,339	5,364	51	13	5,428		0.293
Other tuberculous diseases	427	306	733	126	98	224	932	23	2	957		0.052
Syphilis	5,616	4,110	9,726	992	1,436	2,428	12,127	22	5	12,154		0.652
Gonorrhoea	22,342	7,473	29,815	3,829	3,690	7,519	37,218	93	23	37,334		2.014
Other venereal diseases	2,727	1,500	4,227	74	104	178	4,346	53	6	4,405		0.238
Fever of uncertain origin	92,055	71,748	163,803	7,746	9,151	16,897	178,827	1,457	416	180,700		9.748
Bacillary dysentery	4,422	3,314	7,736	630	568	1,198	8,748	70	116	8,934		0.482
Amoebiasis	306	212	518	680	797	1,477	1,867	24	104	1,995		0.108
Other dysenteries	7,892	6,212	14,104	2,353	2,542	4,895	18,652	174	173	18,999		1.025
Diphtheria	5	2	7	1	1	2	8	—	1	9		—
Whooping Cough	2,558	2,400	4,958	1,549	1,679	3,228	8,036	134	16	8,186		0.442
Meningitis	52	34	86	21	17	38	121	2	1	124		0.007
Plague	—	—	—	—	—	—	—	—	—	—		—
Leprosy	1,102	723	1,825	1,220	1,356	2,576	4,395	4	2	4,401		0.237
Tetanus	18	12	30	4	11	15	44	1	—	45		0.002
Anthrax	155	93	248	9	7	16	261	2	1	264		0.014
Relapsing fever	159	138	297	234	201	435	731	—	1	732		0.040
Yaws	3,014	1,750	4,764	600	599	1,199	5,958	4	1	5,963		0.322
Acute Poliomyelitis and its effects	57	39	96	21	14	35	124	4	3	131		0.007
Smallpox:—												
(a) Variola Major	—	—	—	—	—	—	—	—	—	—		—
(b) Variola Minor	24	10	34	20	8	28	61	1	—	62		0.003
Measles	3,797	3,775	7,572	985	937	1,922	9,355	60	79	9,494		0.512
Chickenpox	2,520	1,925	4,445	188	156	344	4,672	23	94	4,789		0.258
Mumps	759	477	1,236	139	151	290	1,498	22	6	1,526		0.082
Yellow Fever	—	—	—	—	—	—	—	—	—	—		—
Rabies	—	—	—	—	—	—	—	—	—	—		—
Trachoma	1,046	990	2,036	571	609	1,180	3,191	23	2	3,216		0.173
Typhus and other rickettsial diseases	20	41	61	5	3	8	48	7	14	69		0.004
Malaria:—												
(a) Benign Tertian	1,381	1,218	2,599	4,952	4,940	9,892	12,131	259	101	12,491		0.674
(b) Quartan	2	4	6	114	155	269	264	9	2	275		0.015
(c) Subtertian	19,268	15,426	34,694	16,433	7,696	24,129	57,920	702	201	58,823		3.173
(d) Unclassified	30,096	23,792	53,888	10,071	10,700	20,771	73,738	677	244	74,659		4.028
Blackwater Fever	—	—	—	—	—	—	—	—	—	—		—
Trypanosomiasis	17	4	21	5	1	6	27	—	—	27		0.001
Schistosomiasis:—												
(a) Vesical (haematobium)	10,529	5,075	15,604	3,490	2,822	6,312	21,871	22	23	21,916		1.182
(b) Intestinal (mansoni)	1,040	751	1,791	463	500	963	2,706	10	38	2,754		0.149
Tapeworm	1,851	968	2,819	996	870	1,866	4,644	8	33	4,685		0.253
Phylariasis (bancrofti)	250	87	337	61	21	82	412	6	1	419		0.023
Onchocerciasis	3	1	4	2	11	13	15	1	—	17		0.001

TABLE XII—(contd.)

DISEASES

OUT-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS			VOLUNTARY AGENCY HOSPITALS			Total African	Total Asian	Total European	Territorial Total	Group Total	Percentage Morbidity
	Males	Females	Total	Males	Females	Total						
GROUP II												
<i>Neoplasms</i>												
Ankylostomiasis ...	9,669	9,232	18,901	6,933	8,400	15,333	34,143	61	30	34,234		1,847
Ascariasis ...	4,379	4,126	8,505	2,462	2,918	5,380	13,745	40	100	13,885		0,749
Guinea Worm (dracunculosis) ...	—	—	—	—	—	—	—	—	—	—		—
Tinea ...	2,711	1,349	4,060	381	405	786	4,717	72	57	4,846		0,261
Scabies ...	10,482	8,695	19,177	4,154	3,520	7,674	26,754	62	35	26,851		1,449
All other infective parasitic diseases ...	4,162	4,078	8,242	1,727	1,728	3,455	11,232	202	261	11,695	577,494	0,631
GROUP III												
<i>Neoplasms</i>												
Malignant neoplasms ...	74	36	110	81	95	176	273	8	5	286		0,016
Non-malignant neoplasms ...	263	337	600	124	373	497	1,060	25	12	1,097		0,059
Unspecified ...	638	504	1,142	112	254	366	1,462	22	24	1,508	2,891	0,081
GROUP IV												
<i>Allergic, Endocrine system, Metabolic and Nutritional Diseases</i>												
Asthma ...	3,392	2,060	5,452	620	356	976	5,979	363	86	6,428		0,347
Diabetes ...	177	95	272	64	24	88	237	97	26	360		0,018
Vitamin deficiency states ...	4,863	4,305	9,168	3,520	4,139	7,659	16,532	233	62	16,827		0,909
Kwashiorkor ...	1,374	1,089	2,463	403	420	823	3,270	10	6	3,286		0,177
Other allergic, endocrine system, metabolic and nutritional diseases	6,299	4,092	10,391	1,247	1,291	2,538	12,020	534	375	12,929	39,830	0,697
GROUP V												
<i>Diseases of the Blood and Blood-Forming Organs</i>												
All diseases of the blood and blood-forming organs ...	4,438	4,951	9,389	3,527	5,601	9,128	17,930	419	168	18,517	18,517	0,990
GROUPS V AND VI												
<i>Mental, Psychoneurotic and Personality Diseases, and Diseases of the Nervous System and Sense Organs</i>												
Mental disorders ...	180	141	321	93	79	172	374	31	88	493		0,027
Cerebral haemorrhage ...	15	9	24	5	4	9	18	5	10	33		0,002
Epilepsy ...	185	70	255	174	62	236	456	21	14	491		0,026
Other diseases of nervous system ...	7,607	6,477	14,084	632	524	1,156	14,652	250	338	15,240		0,822
Inflammatory and other diseases of eye and annexe except trachoma	34,161	29,990	64,151	10,835	11,366	22,201	85,146	735	471	86,352		4,658
Diseases of ear and mastoid ...	13,899	11,508	25,407	3,512	3,357	6,869	30,919	473	884	32,276	134,885	1,741
GROUP VII												
<i>Diseases of the Circulatory System</i>												
Heart disease ...	596	494	1,090	983	894	1,877	2,706	160	101	2,967		0,160
Other circulatory diseases ...	1,280	1,008	2,288	385	427	812	2,553	247	300	3,100	6 (07)	0,167

TABLE XII—(contd.)

DISEASES

OUT-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS

(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS			VOLUNTARY AGENCY HOSPITALS			Total African	Total Asian	Total European	Territorial Total	Group Total	Percentage Morbidity
	Males	Females	Total	Males	Females	Total						
GROUP VIII												
<i>Diseases of the Respiratory System</i>												
Pneumonia	8,485	7,422	15,907	1,971	2,088	4,059	19,821	106	39	19,966	288,590	1.077
Other diseases of respiratory system	125,610	103,150	228,760	19,828	20,036	39,864	262,431	3,488	2,705	268,624		14.491
GROUP IX												
<i>Diseases of the Digestive System</i>												
Diseases of teeth and supporting structures:—												
(a) Caries	15,806	12,708	28,514	2,621	2,565	5,186	32,718	548	434	33,700		1.818
(b) Other conditions	5,788	3,907	9,695	1,562	1,586	3,148	12,408	264	171	12,843		0.693
Appendicitis	62	52	114	62	46	108	163	27	32	222		0.012
Intestinal obstruction and hernia	2,755	548	3,303	681	257	938	4,173	42	26	4,241		0.229
Gastro-enteritis:—												
(a) Between 4 weeks and 2 years	9,293	9,030	18,323	1,636	1,693	3,329	21,321	208	123	21,652		1.168
(b) 2 years and over	15,690	12,492	28,182	1,129	1,184	2,313	29,828	232	385	30,495		1.645
Cirrhosis of the liver	200	115	315	58	40	98	392	15	6	413		0.022
Other diseases of liver and bile passages	2,016	1,450	3,466	342	358	700	3,914	108	144	4,166		0.225
Other diseases of digestive system	68,698	76,416	145,114	8,479	10,297	18,776	161,586	1,078	1,226	163,890	271,622	8.841
GROUP X												
<i>Diseases of the Genito-Urinary System</i>												
Nephritis	115	100	215	96	115	211	379	24	23	426	48,987	0.023
Other diseases of genito-urinary system	19,505	17,761	37,266	3,549	7,746	11,295	46,944	791	826	48,561		2.620
GROUP XI												
<i>Complications of Pregnancy Childbirth and the Puerperium</i>												
Toxaemias of pregnancy	—	1,100	1,100	—	137	137	1,179	27	31	1,237	8,261	0.067
Abortion	—	864	864	—	410	410	1,220	23	31	1,274		0.069
Other conditions of the puerperal state	—	4,181	4,181	—	1,569	1,569	5,471	137	142	5,750		0.310
GROUPS XII AND XIII												
<i>Diseases of the Skin and Cellular Tissue, and Diseases of Bones and Organs of Locomotion</i>												
Ulcers	55,828	25,848	81,686	8,528	5,782	14,310	95,519	253	224	95,996	242,468	5.179
Rheumatic Conditions	28,610	24,927	53,537	2,777	2,435	5,212	57,663	640	446	58,749		3.169
Other diseases of bones, skin and musculo-skeletal system	45,083	31,924	77,007	5,585	5,131	10,716	83,920	1,670	2,133	87,723		4.732

TABLE XII—(contd.)
DISEASES
OUT-PATIENTS—GOVERNMENT AND VOLUNTARY AGENCY HOSPITALS
(Hospitals with resident doctors only—1st January, 1960 to 31st December, 1960)

DISEASES	GOVERNMENT HOSPITALS			VOLUNTARY AGENCY HOSPITALS			Total African	Total Asian	Total European	Territorial Total	Group Total	Percentage Morbidity
	Males	Females	Total	Males	Females	Total						
GROUPS XIV AND XV												
<i>Congenital Malformations and certain Diseases of Early Infancy</i>												
Diarrhoea of the new-born	416	474	890	159	146	305	1,162	28	5	1,195		0.064
Ophthalmia neonatorum	121	108	229	23	17	40	268	1	—	269		0.015
Immaturity	10	17	27	40	45	85	110	1	1	112		0.006
All other malformations and diseases of early infancy	482	495	977	164	160	324	1,258	27	16	1,301	2,877	0.070
GROUP XVI												
<i>Senility and Ill-Defined Conditions</i>												
Senility	690	493	1,183	85	63	148	1,298	11	22	1,331		0.072
All other ill-defined causes of morbidity	12,187	9,702	21,889	1,939	2,701	4,640	25,404	497	628	26,529	27,860	1.431
GROUP XVII												
<i>Accidents, Poisoning and Violence</i>												
Fractures and dislocations	4,041	1,558	5,599	442	316	758	5,869	219	269	6,357		0.343
Injuries by animals and insects	2,013	1,169	3,182	901	558	1,459	4,389	75	177	4,641		0.250
Other wounds and superficial injuries (excluding burns)	41,733	17,040	58,773	7,449	4,252	11,701	69,272	551	651	70,474		3.802
Burns and scalds	4,185	3,383	7,568	702	568	1,270	8,673	91	74	8,838		0.477
Poisons	239	94	333	25	19	44	355	10	12	377		0.020
All other injuries from external causes	17,377	7,042	24,419	6,019	1,900	7,919	31,818	205	315	32,338		1.745
Examinations	18,758	8,382	27,140	13,890	19,297	33,187	56,434	1,798	2,095	60,327	183,352	3.254
Totals	834,815	634,642	1,469,457	192,094	192,150	384,244	1,813,850	21,263	18,588	1,853,701	1,853,701	

