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TANGANYIKA

Annual Report
of the
Medical Department
for the year ended 31st December
1951

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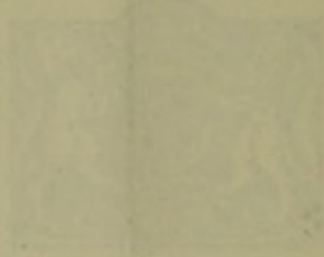
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TANGANYIKA

Annual Report of the Medical Department for the year 1951

PART I

I.—A GENERAL REVIEW

The year 1951 has been one of planning and preparation rather than one in which there have been any marked advances in the scope or quality of the medical services available to the population of Tanganyika. During and since the last World War the chief limitation upon the expansion of these services has been the lack of trained men and women in every field of medicine; this shortage has influenced the development of the Government medical services, mission medical services, and the services provided by commercial and industrial organizations for their employees.

2. Since the end of the war Tanganyika has embarked upon a period of development, the tempo of which is increasing rather than slackening; this development has been undertaken at a time of considerable economic difficulties and in the face of serious shortages of skilled manpower and materials. In common with other departments of Government, the Medical Department has had to cope with a much enlarged demand on all the services which it provides and has met this demand as best it could with the handicaps of inadequate buildings, inadequate facilities, equipment, transport and inadequate staff.

3. The public expects doctors to treat illness, and therefore the first call on the various fields of activity of the department, at this stage, is on the curative services. A study of the volume of curative work undertaken shows that this has increased steadily since the setting up of the British Administration in Tanganyika. This is only to be expected in a country which is still in an early stage of development. But it is not always realized that, during and since the war, this expansion has continued without a parallel increase in staff of the department; indeed, in some years the staff has been less than it was in preceding years. The increased call for curative work has been met partly by increased effort on the part of the staff and partly by curtailment of other services which, although equally important, are not so much in the public eye and which have not the immediate urgency of suffering.

4. From the point of view of the future development of both the curative and preventive services the most pressing problem is the training of African staff. In a country as yet poor, of great areas with primitive communications and with a sparse and scattered population, the future development of all medical services is intimately related to the numbers of locally trained staff of all grades which can be produced, and through whom the efforts of the highly qualified expatriate staff can be more widely utilized. Training of various cadres of African staff has always been carried on in Tanganyika, but since the war staff have not been available to carry out this training on a sufficient scale to keep pace with the expanding needs of the department.

5. During 1951 the supply of Senior Service medical staff began to improve; details of this improvement are tabulated later in this report. With the object of an early expansion of training facilities, much time was devoted during the early part of the year to planning: standards and syllabuses were prepared, and plans were put in hand for extending existing centres, and for the establishment of new training centres. In this work a close liaison has been maintained with the missionary societies who are also expanding their training activities. The territorial medical and nursing training boards lay down the standards required for the various categories and generally co-ordinate the training provided over the whole territory.

6. During the year the Development Plan for the department was reviewed and revised in the light of changed circumstances. This plan is mainly concerned with the provision of buildings. The erection of new hospitals and the replacement of obsolete buildings is planned to meet increased demands for treatment facilities. There are certain special provisions for training establishments, leprosaria and a tuberculosis hospital. Unhappily, the building capacity of the territory is inadequate for the great demand still being made on it, and it has only been possible to undertake a part of the work for which funds were available during the year. New works on which progress was made were the new Korogwe Hospital and the Kibongoto Tuberculosis Hospital, where an extensive rebuilding programme was nearing completion by the end of the year. Work on the extension of the Nursing Training Centre at Mweka was only made possible by the secondment of an officer of the department to supervise building operations.

7. The greatest building effort remained concentrated within areas of maximum demand—and where building operations presented the least difficulty, that is, at urban centres. Whilst this is logical enough when demand outstrips capacity to supply, it is hard on the more remote districts where hospital facilities are often much worse, and where distance and poor communications render it difficult to reach a larger centre with better facilities. The shortcomings of some of the older hospitals have been rendered more obvious where improvement in the staff position has enabled medical officers to be posted to districts which have been for many years without them, and where the hospitals have deteriorated with the passage of years. The potential

capacity of curative facilities in such stations is at present limited by buildings rather than by staff. Nevertheless during 1951 there was some transference of building effort to "outstations", and it is expected that this will continue.

8. The major building project of the department is the replacement of the Sewa Haji Hospital in Dar es Salaam by a 400 bed hospital and training centre, for which the initial plans had to be discarded, largely on account of the cost involved. Towards the end of the year an architect was appointed especially for this work. The future of the Tanga Hospital was also considered and it was decided to rebuild on the present site. A most generous offer of £50,000 for the provision of in-patient accommodation for women and children at Tanga was received from Mr. Christos Galanos during the year.

9. The first complete year of operation of the department under regional decentralization was 1951, and on the whole it has worked satisfactorily. Two factors have affected the efficiency of this system, the first being that the administration is still organized on a provincial basis which means that for one Province in each medical region liaison between the Provincial Commissioner and the Assistant Director of Medical Services has been more difficult. The other has been the serious shortage of competent clerical staff; this has greatly hindered the proper running of the regional offices, and, indeed, of the Department as a whole. The Department has now reached a stage of development at which central control of detailed administration is no longer possible, and the present system affords the best pattern of decentralization for its needs.

10. During the year the post of "District Medical Officer" was brought into being with the object of emphasizing the importance of rural work, which has been much neglected in recent years owing to overriding hospital commitments. Whilst the medical supervision available to rural areas is still quite inadequate, some improvement has been noted during the year. This has mainly taken the form of integration of the Native Authority rural dispensary system throughout Tanganyika. This system, which provides the major part of the curative services available in rural areas, has grown up through the years on a purely local basis. As is only to be expected, great variations in the quality of the service are to be found in different areas. The orderly development of these services over the country as a whole demands that they shall conform broadly to certain common standards and policies. A beginning has been made towards this.

11. Marked progress has also been made within recent years by the missionary medical services, which contribute an important part to the curative and training resources of the Territory. They receive substantial financial assistance from Government. There have been considerable extensions and improvements to a number of mission hospitals, new centres have been opened and more staff has become available. Unfortunately it is not possible in this report to give an indication of the true extent of these services; it is only of recent years that mission hospitals and dispensaries have been requested to render statistical returns of the work done on the same lines as government

institutions, and the keeping of such records is still imperfect in the case of many units. Statistical returns have been received from only a very small number of mission centres and many of these are incomplete.

12. In the field of industrial health there has been progress in the provision of medical facilities for employees. Three fully equipped hospitals were completed and occupied and two others were nearing completion by the end of the year. The number of medical practitioners in full or part-time employment in industry increased.

13. The only major outbreaks of serious communicable disease occurring in 1951 were of plague which was reported from four different areas. The first outbreak in Mwanza District early in the year was small and circumscribed but towards the end of the year there were more extensive outbreaks in Same, Mbulu and Singida Districts. These constituted a serious threat in view of a large and inexplicable rise in the rat population throughout the greater part of the territory. Energetic control measures were at once applied and only local spread occurred. By the end of the year control had been achieved in two of the areas, Same and Mbulu. The dramatic therapeutic value of streptomycin in the treatment of plague was clearly demonstrated by the very low case mortality encountered in these outbreaks in which this drug was extensively used. Serious outbreaks of smallpox were encountered only in the coastal belt of the Eastern and Southern Provinces, and at no time did these give cause for concern. There were sporadic occurrences of this disease elsewhere but none reached significant proportions. The incidence of sleeping sickness showed a further marked decline during the year; the control of population in the infected areas has already been largely re-established, and the risk of any serious epidemic would now seem to be slight.

14. In townships the greater part of the building potential was engaged on low and medium density housing and on commercial and industrial development; though various high density housing schemes were continued and others were begun, the lack of sufficient housing of this type is responsible for much overcrowding and slum development in and around the townships. This is particularly evident among the African population and the poorer sections of the Asian community. In Dar es Salaam and Tanga the housing shortage among Africans is being dealt with by the provision of temporary settlement areas, pending the construction of permanent houses. In Dar es Salaam work was begun on the installation of a main sewage system and extensions were made to water supplies in various townships. The provision of adequate supplies of water still remains a serious problem in several of the larger urban areas.

15. The following brief synopsis is intended to give an indication of the extent of the Government medical services during the year. Services provided by the Native Authorities are not included. A more detailed discussion of the various services together with statistical tables follows in later chapters. Dur-

ing 1951 the authorized expenditure of the Medical Department was £853,295 of which £462,665 was in respect of personal emoluments. The total expenditure represented 8.6 per cent of the territorial budget.

Missions received the sum of £54,776 in the form of grants to assist in both treatment and training. At Government institutions 3,386 general beds were provided, and 1,093 special beds. The latter include maternity, tuberculosis and other infectious diseases, and mental diseases. This represents approximately one general bed per 2,300 of the population, and one bed (all types including general) per 1,740 persons. Of a total of seventy-four Government medical institutions, thirty-three general and special hospitals were staffed by Medical Officers at the end of the year, and thirty-seven were staffed by Nursing Sisters. A total of 1,034,907* outpatients attended at Government medical centres and 82,333* patients were admitted for treatment. Of these inpatients 3,261 deaths were recorded. A total of 4,239,496 first attendances were recorded from Native Authority dispensaries.

II.—STAFF

TABLE I

SENIOR SERVICE STAFF STRENGTHS, VARIOUS CATEGORIES, MEDICAL DEPARTMENT

Category	Establishment at 1.1.51	Strength at 31.12.51
<i>Medical and Nursing Staff:</i>		
Administrative Medical Staff (including M.I.C., C.H.I.)	8	8
Specialist Medical Staff	15	9
General Duty Medical Staff (including S.M.O.) ...	103	65
Nursing	131	102
Sister Tutors	4	4
Dental Surgeons	5	5
<i>Health Staff:</i>		
Health Inspectors	34	31
Health Visitors	18	17
Malaria Officers (including Entomologists) ...	4	4
<i>Technical Staff:</i>		
Pathologists	2	1
Pharmacists	7	6
Laboratory Superintendents... ..	4	3
Radiographers... ..	2	2
Radiological Technician	1	1
Physiotherapists	3	3
Dental Mechanics	3	2
<i>Administrative and Clerical:</i>		
Secretary	1	1
Accountants	2	2
Chief Office Superintendents and Woman Administrative Assistants	7	4
Hospital Superintendents	3	3
Hospital Stewards	4	3

16. As can be seen from Table I preceding, the staff position with regard to the Senior Service improved considerably during 1951 in several categories. The improved recruitment of Medical Officers during the year was influenced by the improvement offered in the conditions of service, which were altered in

*Kibongoto Centre report not yet received.

two respects. Private practice on a limited basis was re-introduced during the year, and a new cadre of Special Grade Medical Officers was also introduced, for which the criterion is the possession of a recognized specialist qualification, subject to the acceptance by the Director of Medical Services of the usefulness of such a qualification in the interest of the service as a whole. The fact that an officer may be appointed to special grade status in this way does not mean that he will be employed whole-time in his particular speciality, though naturally every effort will be made to use his experience to the best advantage. As a result of such appointments it has been possible to arrange for improved surgical facilities in some up-country stations.

17. With regard to Junior Service staff, the main shortage is still that of Makerere trained Assistant Medical Officers and of trained nursing staff, both male and female. The training of nurses has continued during the year, but is at present inadequate for the demand. This is due mainly to lack of accommodation for nurses-in-training, though extensions to the Mweka Training Centre were begun during the year.

18. The serious shortage of clerical assistance continues. The position in the department became worse during the year and was aggravated by the transfer of a number of experienced hospital clerks to the Revenue Department in consequence of a re-organization of hospital accountancy procedure. There is little probability that the position will improve in the near future.

PART II—PUBLIC HEALTH

III.—COMMUNICABLE DISEASES

19. *Introduction.*—In the following paragraphs a brief description of the year's experience in certain of the commoner communicable diseases is given. Where possible this is supported by a statement of the recorded incidence of the disease over the past five years. These figures are drawn entirely from the statistical returns submitted by Government medical institutions, and are not to be taken as the *actual* incidence of these diseases over the territory as a whole. In the case of only three, viz. sleeping sickness, plague and smallpox, is it likely that the recorded figures approximate to the actual incidence of these diseases in the territory.

(A) DIRECT INFECTIONS

Smallpox (Variola)

TABLE II

REPORTED TERRITORIAL INCIDENCE OF SMALLPOX, 1947-1951

		1947	1948	1949	1950	1951
Cases		2,960	1,206	1,045	6,390	855
Deaths		616	209	169	1,345	139
Case mortality per cent...	...	20.7	17.3	16.1	21.04	16.3

20. The history of smallpox in recent years was reviewed in the Annual Report for 1950. During 1951, there was no widespread epidemic, and only one large outbreak of smallpox, originating in Kilwa District. In 1950, there was an epidemic of smallpox in the Southern Province, and the Kilwa outbreak is thought to have come from a focus of infection remaining from this previous epidemic. It is interesting to note that secondary spread from this outbreak was first noticed in the neighbourhood of Dar es Salaam, and that local secondary spread occurred after this. It is thought that this was due to the carriage of infection by the medium of road transport, which, at the time of the outbreak (June), was fairly heavy between Kilwa and Dar es Salaam. Some 33,000 persons were vaccinated in the infected area. Altogether in the Eastern Region about 700,000 vaccinations were performed during the year. The potency of the lymph provided has been very satisfactory.

21. In the Western Region there was a limited outbreak in Maswa District, where, over the past three years, this disease appears to smoulder and break out from time to time, despite vaccination. The Assistant Director of Medical Services reports that chickenpox has been widespread over the Western Region and that "the differential diagnosis from smallpox is not always quite as easy as the text books would have it". Indeed, the co-existence of varicella, variola minor and variola major which has been observed in the Lake Province for several years now is a curious phenomenon, which might well repay special study.

22. In the Northern and Central Regions there were only small local outbreaks and sporadic cases, which were easily brought under control. No serious outbreak occurred in any urban centre or institution. In general the urban populations have a high degree of protection as the result of frequent vaccination campaigns.

Cerebro-spinal Meningitis

TABLE III

REPORTED TERRITORIAL INCIDENCE OF CEREBRO-SPINAL MENINGITIS, GOVERNMENT INSTITUTIONS, 1947—1951

					1947		1948		1949		1950		1951
Cases	...	...	...	...	1,614	...	987	...	507	...	588	...	416
Deaths	...	...	...	...	448	...	380	...	199	...	146	...	128
mortality per cent	...	...	...	...	23.0	...	20.2	...	28.79	...	24.7	...	30.8

23. This disease continues to be endemic over the greater part of the Territory. No serious outbreaks occurred during the year. The case mortality rate remains high. Whether this is due to a more virulent strain of organism, or to the development of some degree of resistance to the sulphonamides or anti-biotic drugs or just to the fact that cases are brought too late for effective treatment, is not known.

Leprosy

24. The total number of cases of leprosy resident and under treatment was :—

Government	...	...	...	1,227
Missions	...	...	...	3,779

25. Increasing use was made of avlo-sulphone during the year, but a number of undesirable reactions under this treatment was noticed. Where there is no resident doctor treatment is sometimes carried out by lay workers lacking the facility of immediate medical supervision and under such circumstances these drug reactions have, on occasion, been very disturbing. All the sulphone group are potentially toxic, but the slightly greater toxicity of avlo-sulphone is more than offset by the fact that it is very much cheaper than sulphetrone; the latter is probably still the most commonly used of this group of drugs in Tanganyika.

26. Whilst there is no doubt that this form of treatment represents a tremendous advance, experience is tending to show that there are a small proportion of cases of leprosy which are resistant to sulphone therapy. The Assistant Director of Medical Services, Eastern Region, reports a tendency to reduce the schedule of dosage as laid down in Medical Department *Bulletin* No. 1 of 1949, in the face of toxic reactions. He points out that these drugs are still being proved, and that unless standard forms of treatment and dosage are maintained over some years it will be very difficult to assess the results.

27. In addition to the projected leprosarium at Makete referred to in the Annual Report for 1950, decisions were taken during the year to build two further leprosaria at Chazi (Eastern Province) and Kolondoto (Lake Province); at Kolondoto work was put in hand by the Water Development Department to provide a water supply. The sum of £19,700 was provided for the maintenance and supply of Government and mission leprosy institutions. Approximately £6,000 was spent on the supply of drugs.

Tuberculosis

TABLE IV

RECORDED INCIDENCE OF PULMONARY AND NON-PULMONARY TUBERCULOSIS, 1947-1951
(GOVERNMENT INSTITUTIONS)

	1947	1948	1949	1950	*1951
<i>Pulmonary Tuberculosis:</i>					
Out-patients	3,257	3,301	4,851	3,544	514
In-patients	938	1,298	1,370	1,534	979
Deaths (In-patients)	226	228	268	291	242
Case mortality (In-patients) per cent	22.9	17.6	19.56	18.97	24.72
<i>Non-pulmonary Tuberculosis:</i>					
Out-patients	1,731	1,710	672	1,193	302
In-patients	296	671	348	391	215
Deaths (In-patients)	19	24	12	24	15
Case mortality (In-patients) per cent	6.4	3.6	3.4	6.1	6.98

*Figures for Kibongoto Tuberculosis Hospital not received for 1951.

28. The work of the Tuberculosis Hospital is dealt with in more detail under paragraphs 126 and 128, page 36. The overall incidence of tuberculosis, as reflected in the annual hospital returns, is on the increase, but only a part of the true incidence is disclosed by these returns. In general the diagnostic facilities available are not sufficient to furnish reliable information as to the incidence of pulmonary tuberculosis, much of which undoubtedly remains undisclosed in the general category of respiratory diseases.

29. Pulmonary tuberculosis is a social disease and is closely related to the housing and living conditions of the people. Unhappily the supply of proper housing in towns and their environs continues to lag behind the ever increasing growth of urban and sub-urban population. Township populations contain a high proportion of youths recently arrived from rural areas, especially in the larger centres. By reason of their relatively low resistance to tuberculosis and the opportunities for the transmission of infection presented by the conditions of their new environment, many contract the disease in a highly progressive form. Their natural reaction, when so overtaken, is to return to their homes, where conditions are such as to encourage the transmission of the disease to other members of the family.

30. Whilst there have been marked advances over the past few years in the treatment of pulmonary tuberculosis, effective treatment still requires long periods of hospitalization and a most thorough follow-up system of after care on discharge from hospital. This treatment cannot yet be effectively supplied at our general hospitals except for a few selected cases. That the

system can be applied with good results in East Africa is shown by the results achieved at Kibongoto. It will be many years before specific anti-tuberculosis measures are fully established in Tanganyika, although the Development Plan includes provision for a new tuberculosis hospital on the lines of Kibongoto. Meanwhile it is of the utmost importance, from its bearing on the tuberculosis problem, that all possible attention be given to the improvement in the housing and living conditions of African communities in urban areas.

Dysenteries and Enteric Fevers

TABLE V

REPORTED INCIDENCE, GOVERNMENT MEDICAL INSTITUTIONS, 1947-1951

	1947	1948	1949	1950	1951
<i>Amoebic Dysentery:</i>					
Out-patients	692	581	838	559	1,261
In-patients	259	254	249	300	423
Deaths (In-patients)	21	18	21	19	11
Case mortality (In-patients) per cent	7.3	7.1	8.4	6.3	2.6
<i>Bacillary Dysentery:</i>					
Out-patients	603	690	780	1,217	2,234
In-patients	151	246	232	315	340
Deaths (In-patients)	16	18	11	10	22
Case mortality (In-patients) per cent	10.6	7.3	4.7	3.2	6.4
<i>Undefined:</i>					
Out-patients	2,395	3,111	3,753	8,021	6,760
In-patients	295	593	490	572	405
Deaths (In-patients)	22	32	31	37	13
Case mortality (In-patients) per cent	7.5	5.4	6.3	6.5	3.2
<i>Enteric Fevers:</i>					
Out-patients	74	183	10	71	13
In-patients	291	282	326	386	460
Deaths (In-patients)	46	34	38	56	67
Case mortality (In-patients) per cent	15.4	12.0	11.6	14.8	14.5

31. During the year work has continued on the isolation of various types of salmonella infection in the Dar es Salaam area at the Medical Laboratory, including some work to elucidate the epidemiology of these infections. Species pathogenic to man have been isolated from the intestines and excrement of the common household lizards, and also from cockroaches. The Senior Pathologist has suggested that these insects may play an important part in transmission by picking up the infection from the drains and sewers in which they harbour. It is apparent that there is a very large reservoir of salmonella species in and around Dar es Salaam.

32. In view of the primitive sanitary conditions prevailing over the greater part of the territory it is surprising that the intestinal infections do not contribute a greater proportion to the total of persons seeking treatment at hospitals. The Assistant Director of Medical Services, Eastern Region, estimates that along the Ngerengere River in Morogoro District alone some 2,000 cases of cholera-like dysentery occurred in a total labour force of about 12,000 men. The source of this infection was almost certainly polluted water derived from the Ngerengere River, and steps are being taken to combat this. The African

population as a whole possesses a high degree of resistance to infection with the salmonellae, a resistance which is presumably engendered by repeated exposure. This may be paid for in mortality in the early years of life which is as yet unexposed owing to the lack of any form of vital statistics.

33. No serious epidemics of this group of diseases were recorded during the year, though there were numerous local outbreaks, usually connected with concentrations of population, of which the Ngerengere river area outbreak was the largest. An interesting episode occurred in the European Hospital, Dar es Salaam, which it was possible to investigate bacteriologically. The organism was *S. typhi-murium*; fourteen patients and eight non-European staff were affected. Three members of the kitchen staff were found to be symptomless excretors of this organism, and one of them had prepared the vehicle, a meat loaf, which also contained the organism.

34. The incidence of the typhoid group of infections remained sporadic as in previous years; no serious outbreak was reported. The Widal test provides a valuable diagnostic check in this group, as the greater part of the population is unprotected by vaccines. Because of the cost chloromycetin is usually used only in the more serious cases; it has proved to be very effective.

Venereal Diseases and Yaws

TABLE VI

REPORTED INCIDENCE, GOVERNMENT MEDICAL INSTITUTIONS, 1947-1951

	1947	1948	1949	1950	1951
<i>Syphilis:</i>					
Out-patients ...	38,897	37,539	36,492	30,792	34,138
In-patients ...	2,364	1,943	1,823	1,726	1,896
<i>Gonorrhoea:</i>					
Out-patients ...	20,059	21,493	17,606	17,197	18,979
In-patients ...	2,414	2,523	2,317	1,840	1,958
<i>Other Venereal Diseases:</i>					
Out-patients ...	2,779	2,787	2,299	2,120	3,055
In-patients ...	317	319	350	193	230
<i>Yaws:</i>					
Out-patients ...	60,052	61,263	61,147	51,703	46,698
In-patients ...	714	685	676	671	604

35. The probability of errors of diagnosis, particularly in relation to syphilis and yaws, is very high and the figures given in the table above should be judged accordingly. Another factor is that treatment by injection for these diseases is very popular with the African population and to obtain the treatment they desire, they are prone to give fictitious histories of previous infection which cannot be disproved. For many years the incidence of venereal disease has been thought to be unduly high in Bukoba District. Population studies have indicated that the Haya tribe is declining in numbers, and it has been suggested that the high incidence of these diseases may be a contributory factor. The East African Medical Survey has begun an investigation of the incidence of venereal disease assisted by officers of this department.

36. In the Eastern Region a small series of studies was undertaken with a view to determining the true incidence of sulphonamide-resistant gonorrhoea. Of 112 cases of gonorrhoea, 86 were cured by sulphonamide therapy, and of the 26 failures, 21 were subsequently cured by penicillin.

(B) VECTOR BORNE INFECTIONS

Plague

TABLE VII

REPORTED TERRITORIAL INCIDENCE, 1947-1951

	1947	1948	1949	1950	1951
Cases	- ...	312 ...	18 ...	- ...	263
Deaths	- ...	178 ...	14 ...	- ...	40
Case mortality per cent ...	- ...	57.05 ...	77.77 ...	- ...	15.21

37. Early in the year a small outbreak occurred in the Nassa area of the Mwanza District; the organism was recovered from one patient. The total number of cases is unknown, but it is surmised that the nineteen persons who sickened and died suddenly in the area before the disease was reported to the medical authorities were victims of plague. Road blocks were set up, and in the affected area all houses were dusted with gammexane. The flooding of the Simiyu River formed an effective barrier between the infected area and Mwanza, and the outbreak remained localised and small in extent.

38. In the latter half of the year there was an epizootic of rats in many parts of the Territory; enormous numbers of these animals were reported, and considerable damage was done to crops.

39. In the middle of November the District Commissioner, Same, reported an outbreak of illness at Suji, in the South Pare mountains, of which sixteen persons were reported to have died within a period of three weeks. Investigations by staff of the department indicated that the disease was plague, and this was shortly confirmed by autopsy.

40. The management of the Hassani Sisal Estate placed their hospital at the disposal of the department, and operations for the control of the outbreak and the treatment of cases were centred here and at Suji and Gonja. In these three areas separate medical teams and treatment centres were established, and streptomycin was used with dramatic results. Up to 30th December, 1951, by which time the outbreak was under control, 155 cases had been treated, of whom eight died.

41. Preventive measures included control of the movement of population, widespread vaccination against plague, rat destruction and flea destruction, the latter by the use of gammexane. At Makanya, the railway station was closed and road traffic was controlled with the co-operation of the Police. Some 45,000 vaccinations with plague vaccine were performed in the area. Extensive cleansing of houses was undertaken, and Messrs. Amboni Sisal Estates Ltd., lent to the department a "Tifa" applicator. The results of rat poisoning with barium carbonate are reported as having been disappointing.

42. At the end of November a report of fourteen deaths and a high mortality in rats was received from Basotu, in Mbulu District close to the Singida boundary. Three deaths had occurred in this area one month earlier, but at the time had been attributed to anthrax. Investigation disclosed that the disease was plague. Basotu lies on the main road from Singida to Mbulu, and is very remote. A temporary treatment centre was established and a treatment and control team assembled on the lines used in Upare. By the end of the year both of these outbreaks were under control.

43. Shortly after recognition of plague at Basotu, cases of this disease were confirmed from Singida District (Central Province) which has a common boundary with Mbulu. Control measures were instituted as for the other outbreaks, but heavy rainfall and bad communications hindered the delivery of supplies. On 15th December, a ward servant at Singida Hospital developed plague. A few days previously he had cleaned out the room occupied by a patient from the infected area of Mbulu District, who was not a case of plague. Presumably this man was carrying an infected flea or some other insect which transmitted the disease to the ward servant. This incident necessitated a further effort in disinfecting and cleaning up the township of Singida. By the end of the year the Singida outbreak was not under control, and thirty-seven cases with six deaths had been reported from the District.

44. These various outbreaks called for the rapid mobilization of staff and supplies in a maximum effort to prevent spread of the disease. With the very heavy rat population existing at the time of the later outbreaks there was a heightened risk of widespread dissemination of plague, particularly from the Upare outbreak which was athwart the railway and the main road. The fact that no such spread occurred may well be a measure of the efficiency of the attack. The greatest assistance in combating the disease was received from commercial organizations, the missions, private individuals, and officers of other Government Departments, particularly the Provincial Administration and the Police. In Singida and Mbulu the departmental staff had to contend with remoteness, poor communications and unpleasant climatic conditions. In all areas they carried out their task with praiseworthy efficiency.

45. The exact origin of these outbreaks is not known; there is a known endemic focus of plague in the west of Singida District, where it may be assumed that a natural reservoir of the disease exists in wild rodents. Whether in fact the disease spread to Upare through animal hosts or whether it was conveyed there through a human agency is not known. If it was by the former route it might be expected that there would have been a noticeable mortality in the rodents carrying the disease, which, in its epidemic form, is usually fatal to the rodent host. No such mortality has been reported. On the other hand, if spread was by human agency and from the Singida area, it is curious and fortunate that no cases occurred in the townships lying on the route. The Nassa area was the origin of the 1937 outbreak of plague which spread to Mwanza Township, and an endemic focus in this area has been postulated.

46. Three conclusions may be drawn from the experiences of the year. The first is that we possess effective weapons for the control, prevention and treatment of plague, if they are quickly and energetically applied to an outbreak. The second is that we know nothing about the natural history of rodent (sylvatic) plague in Tanganyika. Knowledge gained in other countries suggests that the natural reservoirs of this disease are probably circumscribed, and if we could definite them it should be quite possible to attack the source of infection and limit its spread to the human population. The third conclusion is that the link between rodent plague and human plague is defective sanitation and low standards of rural and urban housing. So long as these conditions persist where sylvatic plague remains uncontrolled plague epidemics will periodically recur.

Sleeping Sickness (Human Trypanosomiasis)

TABLE VIII

TERRITORIAL INCIDENCE, 1947-1951
(New Cases Notified)

					1947		1948		1949		1950		1951
Cases	...	...	...	...	653	...	681	...	1,412	...	*974	...	477
Deaths	...	...	...	...	196	...	200	...	371	...	*371	...	331
Case mortality	per cent	...	...	...	30.0	...	29.1	...	26.2	...	38.9	...	74.2

*These figures are a correction on the duplicated 1950 report.

47. The decline in incidence of this disease has continued. Whilst this must be attributed partly to a natural decline from the epidemic peak experienced in 1949, there is no doubt that the re-establishment of control measures has had an important effect. The control of sleeping sickness is achieved by two inter-dependent means, namely the control of human settlement in infected areas, and a constant clinical check on the incidence of the disease in such settlements where the people may be exposed to infection. An interesting example of how this dual control operates was seen in Kasulu and Kibondo Districts. During August and September a sudden increase in the number of notifications was observed; investigation disclosed previously undetected settlement by the people in fly infested bush beyond the margins of the concentrations of human settlement in both areas. This was rapidly dealt with by local re-settlement within the margins of the concentrations and by the end of the year the situation was normal.

48. In June, the newly appointed Sleeping Sickness Specialist arrived in the territory. Much of his time since his arrival has necessarily been taken up in getting acquainted with the problems of the control of this disease in Tanganyika, but at the same time the training of microscopists for field work has been carried on at Tabora, and some investigations have been made into the use of a new drug for the treatment of late and relapsed cases. Resistant cases of *rhodesiense* infection have usually been considered incurable, but initial results of these trials are encouraging, though as yet it is too early to make any definite assessment.

TABLE IX

TERRITORIAL INCIDENCE OF HUMAN TRYPANOSOMIASIS BY PROVINCES AND DISTRICTS, 1949-1951

Province and District				1949		1950		1951	
				Cases	Deaths	Cases	Deaths	Cases	Deaths
<i>Central:</i>									
Kondoa-Irangi	...	...	...	52	133	15	16	1	30
Singida	...	...	...	4	1	7	7	2	-
Manyoni	...	...	...	-	-	-	-	1	-
Totals	...	...	...	56	134	22	23	4	30
<i>Eastern:</i>									
Ulanga	...	...	...	46	20	39	25	33	9
Morogoro	...	...	...	-	-	1	1	-	-
Totals	...	...	...	46	20	40	26	33	9
<i>Lake:</i>									
Biharamulo	...	...	...	48	5	33	5	15	5
Musoma	...	...	...	11	-	69	11	9	1
Mwanza	...	...	...	43	7	28	7	-	-
Geita...	...	...	...	-	-	-	-	18	-
Maswa	...	...	...	-	-	-	-	-	1
Totals	...	...	...	102	12	130	23	42	7
<i>Northern:</i>									
Mbulu	...	...	...	38	5	99	12	39	5
Arusha	...	...	...	-	-	-	-	3	1
Masailand	...	...	...	-	-	-	-	3	2
Totals	...	...	...	38	5	99	12	45	8
<i>Southern:</i>									
Kilwa (Liwale)	...	...	...	1	-	-	-	-	-
Lindi...	...	...	...	-	-	1	-	-	-
Masasi	...	...	...	36	4	4	-	4	1
Tunduru	...	...	...	7	3	7	3	6	2
Ruponda	...	...	...	-	-	27	1	35	2
Totals	...	...	...	44	7	39	4	45	5
<i>Southern Highlands:</i>									
Mbeya	...	...	...	-	-	1	1	-	-
Chunya	...	...	...	29	1	18	1	6	-
Totals	...	...	...	29	1	19	2	6	-
<i>Western:</i>									
Kasulu	...	...	...	-	-	-	-	67	36
Buha	...	...	...	361	98	256	158	-	-
Kibondo	...	...	...	-	-	-	-	92	109
Kahama	...	...	...	230	48	132	59	42	32
Tabora	...	...	...	458	41	202	59	73	68
Kigoma	...	...	...	7	2	10	-	19	7
Nzega	...	...	...	-	-	-	-	1	9
Ufipa	...	...	...	-	-	-	-	-	-
Mpanda	...	...	...	41	3	25	5	8	11
Totals	...	...	...	1,097	192	625	281	302	272
Grand Totals	...	...	...	1,412	371	974	371	477	331

49. About two-thirds of the total cases reported during the year have been from the Western Province, and of these the greater part were from the Districts of Kasulu, Kibondo and Kigoma. The decrease in incidence has been most marked in the Tabora District, and it is reported that the main incidence is from the west, where it borders with Kigoma District. The Lake Province has also shown a decrease though there was a high local incidence in labour employed on the Biharamulo-Nyamirembe road. Special measures were taken to deal with this situation. In the Central Province only four cases were reported. One of these occurred in the Urugu area of Singida District and consideration was given to the movement of the population from this fly-infested area. However, in the absence of further cases, this was not carried out.

50. In the Northern Province three cases occurring in the Arusha District led to discussions on the routing of cattle to the holding grounds near Arusha in order to avoid risk of infection to the drovers. It appears that a satisfactory route has now been found. Towards the end of the year a number of new cases were reported in the vicinity of Njoro, a small village in Mbulu District. Few people are living in this area, and their evacuation is being considered. No cases were reported from the Tanga Province, and only six from the Southern Highlands, all from Chunya District.

51. In the Southern and Eastern Provinces there has been no change of any significance over the past three years, but in view of the development to be expected in certain areas in these Provinces (particularly in the Ulanga District) the position will need careful watching.

52. During the year the system of fourteen days quarantine previously imposed on labour leaving an infected area was dropped. An initial blood examination followed by a later examination on the arrival of the labourer at his place of employment was substituted. The quarantine system was never popular with either the labour or the employers; the new system offers the minimum of inconvenience, and, if properly observed, should provide just as good a safeguard against the spread of sleeping sickness by the migration of labour. The increasing tendency of migrants to use motor transport has also greatly reduced the risk of infection.

Malaria and Blackwater Fever

TABLE X

REPORTED INCIDENCE, GOVERNMENT MEDICAL INSTITUTION, 1947-1951

<i>Malaria :</i>	1947	1948	1949	1950	1951
Out-patients ...	118,738	124,242	129,638	146,245	147,858
In-patients ...	13,962	13,796	11,567	13,498	13,237
Deaths (I.Ps.) ...	264	264	261	340	342
Mortality per cent (I.Ps.) ...	1.9	1.9	2.2	2.5	2.6
<i>Blackwater Fever :</i>					
Out-patients (treated in quarters)	8	-	27	3	6
In-patients ...	38	23	22	34	20
Deaths (I.Ps.) ...	12	5	7	6	5
Mortality per cent (I.Ps.) ...	31.5	21.7	31.8	17.6	25

53. During 1951 the territorial organization for malaria control became more more firmly established with the posting of a medical officer for anti-malarial duties, a malaria field officer and an entomologist. The unit is based with and comes within the organization of the Inter-territorial Malariologist, whose Headquarters were moved from Muheza to Amani during the year. Trained African staff are maintained at the larger urban centres throughout the Territory to execute malaria control measures applied by the local authorities. Training and refresher courses for such staff are carried out at Amani and with the increased European staff available it was possible to provide a much higher degree of supervision and advice to staff working in the field.

54. Generally speaking, the organized control of mosquito breeding is practised only at the larger urban centres in the territory, but as the field staff gradually increases in size it should be possible for control to extend to smaller centres. Although the year was one of heavy rainfall over the greater part of the Territory, which favoured mosquito breeding on a more extensive scale, records from the larger centres indicate that, generally speaking, control was at least maintained at the standards achieved in 1950, and these were often improved on. A great deal remains to be done with regard to urban control, but the present organization is showing positive results which may be expected to improve with the passage of time.

55. As well as carrying out advisory and supervisory duties within the territory, the territorial unit collaborates with the East African Malaria Unit in experimental work. During 1951 field work of this nature included an experiment in control by air-spraying methods in Dar es Salaam, the assessment of the effect of residual insecticide spraying of houses on the incidence of malaria (a long-term experiment begun the previous year and still continuing) and a malaria survey in a rural area prior to the establishment of an experiment in rural control in 1952. Other experimental work was undertaken in connection with the assessment of larvicides and insecticides. Much of this work was financed from inter-territorial funds.

56. No assessment can be made of the influence of malaria in Tanganyika, either socially or economically; some indication of its importance may be gained from the morbidity experience at hospitals, but such records as there are give no indication of the probable mortality experience attributable to malaria. Hospital records indicate that malaria remains the most important specific disease entity affecting the health (using the term in its broadest sense) of the population of Tanganyika.

Relapsing Fever

TABLE XI

REPORTED INCIDENCE, GOVERNMENT MEDICAL INSTITUTIONS, 1947-1951

			1947		1948		1949		1950		1951
Out-patients	...	...	3,605	...	3,004	...	2,552	...	1,929	...	2,002
In-patients	...	...	1,694	...	1,223	...	2,036	...	1,948	...	1,622
Deaths (I.Ps.)	...	...	27	...	33	...	15	...	19	...	24
Mortality per cent	...	...	1.5	...	2.7	...	0.73	...	0.9	...	1.5

57. The incidence of this disease follows a well-defined geographical pattern, being highest in the more arid areas of Lake, Western and Central Provinces and lower in the coastal strip and the highland areas of the Northern and Southern Highlands Provinces. In past years Morogoro was an important centre of this disease, a fact which is probably related to its being a focal point in the migration of labour, of whom large numbers from the Western Province pass through Morogoro each year. The routine application of a dust containing gammexane to houses in the townships of Morogoro, Tabora and Mwanza has been associated with a marked reduction in the reported local incidence of this disease.

58. Aureomycin was used experimentally in the treatment of relapsing fever during the year and the observations are being continued. In relation to the number of cases recorded over the territory as a whole, its use as a routine treatment would be precluded on the grounds of expense, but with increased production the price of this anti-biotic is likely to fall.

(C) HELMINTHIC INFESTATIONS

Schistosomiasis and Ankylostomiasis

TABLE XII

REPORTED INCIDENCE, GOVERNMENT MEDICAL INSTITUTIONS, 1947-1951

	1947	1948	1949	1950	1951
<i>Schistosomiasis:</i>					
Out-patients	9,217 ...	14,036 ...	12,538 ...	11,418 ...	12,682
In-patients	620 ...	723 ...	778 ...	827 ...	907
Deaths (In-patients) ...	10 ...	14 ...	17 ...	10 ...	16
Case mortality (In-patients) per cent	1.6 ...	1.9 ...	2.18 ...	1.2 ...	1.7
<i>Ankylostomiasis:</i>					
Out-patients	23,720 ...	23,544 ...	22,813 ...	23,054 ...	25,899
In-patients	2,633 ...	2,746 ...	2,458 ...	2,874 ...	2,643
Deaths (In-patients) ...	152 ...	131 ...	121 ...	169 ...	86
Case mortality (In-patients) per cent	5.77 ...	4.77 ...	4.9 ...	5.8 ...	3.2

59. Over large parts of the territory the incidence of one or other (and sometimes both) of these infestations is remarkably high, and in some areas approaches one hundred per cent. Moderate infestations with either of these parasites are readily detectable by simple microscopic techniques and as a result there is a tendency to attribute the illness of a patient to this easily demonstrated sign of infestation. This is by no means correct in all cases, and the presence of these parasites is not necessarily related to symptoms which have led the patient to seek medical attention. Indeed, it is questionable as to whether a good deal of harm does not result from the wholesale exhibition of anthelmintic drugs, most of which are toxic. It is quite certain that the "de-worming" of a patient who will return immediately into an environment in which reinfestation is certain is a waste of time and money.

60. It must be stated that, considering the very high rate of infestation found in the population as a whole, serious sequelae are comparatively rare. The African population in general appear to have developed a state of symbiosis (which may be described, perhaps, as a state of 'live and let live') with their various parasites, and only exceptionally is this balance disturbed. This is no argument against attempting to prevent infestation. The records which we possess do not indicate at what expense this symbiosis is attained; as in the case of malarial infection, the burden of adapting the human body to live with such parasites is borne in the early years of life, and may carry a toll of death of which we are at present ignorant.

61. Of other helminth infestations, Taeniasis (*T. saginata*) is stated to be increasing amongst the Wachagga. This tribe is enjoying a period of considerable affluence, and part of their increased wealth is, sensibly enough, being spent on food and in particular, on meat. In the absence of sanitary precautions and thorough cooking of this infected beef, the result has been an increase in the incidence of tapeworm.

62. The true incidence of Filariasis is beginning to emerge as a result of various surveys undertaken in different parts of the territory by the Filariasis Research Unit based on Mwanza. In some areas it is high, but preliminary indications are that the incidence of filarial infestation is considerably higher than its pathological effects, of which hydrocoele, elephantiasis and filarial fever are commonest.

IV.—MATERNITY AND CHILD HEALTH

TABLE XIII

SUMMARY OF MATERNITY WORK REPORTED FOR 1950 AND 1951

Area			Confinements		Ante-natal Attendances					
			1950	1951	1950		1951			
<i>Government and Native Authority</i>										
<i>Centres:</i>										
Central Region	...	...	1,278	...	3,369	...	1,351	...	5,431	
Eastern Region	...	...	200	...	337	...	505	...	717	
Northern Region	...	...	2,534	...	2,935	...	6,967	...	4,569	
Western Region	...	...	3,227	...	4,521	...	5,175	...	7,562	
Dar es Salaam...	...	...	782	...	1,271	...	1,081	...	1,260	
Totals			...	8,021	...	12,433	...	15,079	...	19,539
<i>Mission Centres:</i>										
Central Region	...	...	1,599	...	3,200	...	3,588	...	3,735	
Eastern Region	...	...	1,579	...	1,679	...	2,579	...	2,340	
Northern Region	...	...	2,037	...	1,066	...	4,930	...	3,017	
Western Region	...	...	4,887	...	4,774	...	6,492	...	8,184	
Totals			...	10,102	...	10,719	...	17,589	...	17,276

63. There is a marked tendency for maternity work to develop and increase throughout the territory. The standards of the various centres show great variation, generally in direct relation to the training and quality of the staff available. In most centres in the major townships, which are

maintained by the department, standards are high, but in several places centres have been established in temporary premises which are far from suitable; nevertheless it may be fairly said that their value to the community is steadily increasing.

64. In many centres ante and post natal care and child health work are being increasingly developed. From the point of view of the health of the community, this development is of greater value than mere attendance on routine confinements. Considerable help has been received from the Tanganyika Branch of the British Red Cross in providing extra foodstuffs, particularly milk foods. A centre at Morogoro has been established and maintained by voluntary effort; it works in close collaboration with the Government Hospital.

65. By constant effort in propaganda, many African mothers are gradually coming to appreciate the importance of regular attendance in maintaining the health of their children. The majority still bring them only when they are obviously ill, or expect one visit to suffice for the next six or twelve months. However, the idea of the functions of a child health centre, as opposed to a sick clinic, has been implanted, and here and there results are being achieved. The link between the health centre and the home is slowly being forged through the medium of home visits by health visitors and by African staff, but this work is severely limited by shortage of staff and of suitable transport. The possibilities of bringing about an improvement in domestic hygiene by home visiting are immense, but in the face of traditional conservatism in these matters, as usually upheld by the older women, rapid progress cannot be expected.

66. There is a tendency for routine confinements in institutions to increase at the expense of domiciliary work. There are two main reasons for this, the first being that the African mother, like her British counterpart, finds it more convenient and perhaps even cheaper to have her baby in an institution. Secondly, where trained staff is limited, it is far easier to provide a higher standard of supervision and therefore of work in a single institution as opposed to a number of scattered homes. It is undesirable to encourage this tendency in the present state of development of the medical services, since there is no evidence that normal confinements, even in the primitive African home, are attended with greater risk of complications than in a maternity institution. The chief emphasis should be on ante and post-natal care; institutional confinements are indicated only when abnormality is suspected.

67. This trend away from the home is being resisted by the training of "practical" midwives for domiciliary work. The experiment begun in Bukoba District of taking the traditional "gamp" for a short period of elementary training in aseptic methods and rudimentary hygiene, has proved popular both with the profession and the populace, and upwards of forty of these women have had such training and are practising their trade. It is too early yet to assess whether this has led to any general improvement.

68. The more formal approach to these services is to be found in various stages of development in the larger urban centres. The most highly developed of these is at Dar es Salaam, where a full-time medical officer, European and African midwives and a health visitor are based on a special maternity hospital and clinic. At Tanga a similar pattern exists on a smaller scale, and development on the same lines is proceeding as part of the departmental services in other of the larger towns. In the rural areas efficient centres are to be found such as the Government centre at Nzega, and others established by the missions, but in some areas the native authorities have developed popular services. The biggest hold-up in the development of this work remains the shortage of trained African midwives, due to lack of accommodation for a sufficient number of pupil midwives to be trained.

V.—SCHOOL HEALTH

69. In so far as is possible in the face of other commitments, routine medical examination of children attending Government schools is carried out at least once yearly, and is frequently combined with vaccination against smallpox and, less often, other prophylactic inoculations. Such examinations may be followed by the treatment of children found to be suffering from the commoner parasitic diseases, a measure which is believed to be valuable in the case of boarding schools, but in the absence of attention to the domestic environment, is of less value as far as day schools are concerned. Where conditions are disclosed which are susceptible to treatment, appropriate arrangements are made where possible. The standard of these examinations shows a good deal of variation over the territory as a whole.

70. At schools maintained by the Native Authorities, by missions and by other voluntary agencies, regular medical examination of the children is by no means common, and, where it is practised, is often of a low standard. Many of these schools (particularly primary schools) are sited far from any Government medical institution, but where a dispensary is established within reasonable distance, arrangements are frequently made for some form of routine check at the start of each term or school year; this is usually confined to the examination of urine and faeces for the common parasites.

71. Whilst it is obvious that it will not be possible to establish a comprehensive school medical service for many years, it is felt that more could be done by way of checking the health of school children. The simple measurement of physical growth by periodic weight and height records affords a crude indication of the health of a child, and, when combined with an assessment of mental development as measured by scholastic ability may well provide an indication for fuller investigation where ill-health is suspected. Such measurements could well be applied by the teaching staff and if a system on these lines were more widely practised, in combination with a more effective use of such local medical facilities as are available, including visits of medical staff on tour, it is possible that some improvement might be effected in the general health of school children.

72. It is in the smaller primary day schools that the general standards of health are low. The Assistant Director of Medical Services, Western Region, comments that the physique and nutritinal condition of boarders is strikingly better than that of day pupils. The latter are usually younger (normally only middle and secondary schools provide boarding facilities); in many cases they may have a long journey to and from school while the home environment is often bad, both nutritionally and hygienically.

73. During the year the Port Medical Officer assumed responsibility for the supervision of the health of children in the Dar es Salaam schools. In 1951 17 schools were visited and 4,323 children were medically examined. Several striking differences were noticed as between schools and between different racial communities. Actual ill-health was commonest in the Asian school children and the nutritional state among these children was poor compared with the others. An unusually high incidence of asthma was noticed at the European Primary School.

74. No serious outbreak of disease in school was reported during the year. A survey of trachoma in four schools in Masailand, involving 127 Masai children and 102 children of other tribes, showed that amongst the Masai the infection rate varied between 85.3 per cent and 90.9 per cent, whereas for other tribes at three schools the rate varied between 40.0 per cent and 50.0 per cent. At the fourth school there were only five "other tribes", of whom four were infected (80 per cent). At some native schools treatment for schistosomiasis was withheld until teachers and scholars had turned to to cleanse the local sources of water which were the main source of this infection. They were reluctant to do this, preferring perpetual treatment by a form of injection which to Europeans, at any rate, is most unpleasant in its effects! The Assistant Director of Medical Services, Western Region, points out that too much emphasis is placed on the treatment of school children as opposed to prevention. At this impressionable age, they may well become imbued with the "medicine habit".

VI.—HEALTH EDUCATION

75. Systematic lectures on hygiene are included in the school curricular, and, wherever possible, medical staff and rural medical aids are encouraged to give talks on health and hygiene in schools. The subject matter is usually understood, but less often practised. The Assistant Director of Medical Services, Western Region, records a visit to a school at which many of the boys suffered from urinary bilharzia. On questioning them he found that most of them possessed a good knowledge of the life cycle of the parasite and how it was spread. When he asked them if they had stopped urinating in pools to prevent the spread of the disease, there was loud laughter and they replied, "Of course not, everybody urinates in pools!"

76. Over the past few years a number of tribal newsheets have grown up, and from time to time members of the department have written articles on health for publication in these broadsheets. The anti-plague campaigns have resulted in an unusual concentration of medical staff in the infected areas, as well as intensive efforts to improve local environment conditions. Opportunity has been taken to drive home as far as possible the essentials of hygiene on these occasions. The preventive work of the department has been the slowest to recover after the war period, and it is still deficient in sanitary staff of all grades. The demand of the people is for curative services, yet most diseases for which treatment is sought are easily prevented by application of simple sanitary principles.

77. Health education and propaganda involves much hard work with little hope of an early reward. Yet if the African is to be rid of the great burden of disease which he carries he must act for himself. With the increasing attention which is being paid to the education of women, and with the teaching and demonstrations being given at maternity and child health centres, we may be able to influence the habits of the women, who are the most important people from the point of view of the health of the future population. In this respect it should be noted that the sanitary conditions under which many of the Asian community live are deplorable; it is often overlooked that a large part of this important and growing section of the community are pitifully ignorant of the most elementary health measures.

VII.—NUTRITION AND FOOD SUPPLIES

78. Whilst it is generally agreed that the standard of nutrition of the African is lower than is desirable, the classical deficiency diseases are seldom encountered in Tanganyika. On the other hand physical signs indicative of deficiencies in vitamins and other essential food factors are extremely common, and are particularly noticeable in the younger children. Furthermore, groups of Africans, such as labourers or school children, when placed on adequate diets of properly cooked food given at regular intervals will almost invariably show a striking gain in weight and improvement in physique or physical condition as compared with similar groups who have not had improved feeding. Whilst no comparable survey has been carried out in Tanganyika, it is believed that the observations on seasonal weight changes in adult African peasants in the Gambia would be closely paralleled here. In the Gambia it has been found that there is a marked seasonal weight change, body weight being maximal at and after the time of harvest, and then declining to a minimum at about the planting season. The healthy and adequately fed man should, of course, retain an almost constant body weight, with only very slight variations.

79. Generally speaking it is apparent that most Africans in this country, except in the more fertile regions, are existing on a subsistence diet only. Whilst their metabolism is probably adjusted to obtain the maximum benefit

from such a diet, there can be little doubt that the physical development of the children is impaired by such conditions, and that both children and adults have limited physical reserves to tide them over the occasional crisis produced by illness or infestation. And on such diets it is only to be expected that the energy output of the individual is low.

80. It is under conditions such as these that the common parasitic infections may be of great importance. Such an infection may just tip the balance from adequate nutrition to malnutrition. The profound anæmia associated with hookworm infestation is seldom seen in well-to-do Africans, though they may often harbour ankylostomes in considerable numbers; it is seen in the poorer sections of the community, whose nutrition is so poor that they cannot cope with the extra strain.

81. Whilst the African appreciates the pleasure of a full belly as much as any other man, it is unfortunately true that many of them are not yet prepared to exert that extra care or effort which will provide an adequate supply of food the whole year round. It is probably true to say that their physical condition is reduced by the time of the planting season, and that the extra effort involved means a great deal to them; it is also true that bad seasons are common in Tanganyika, and any amount of effort may be defeated in its object by adverse climatic conditions. But it is also true (as is reported from Songea this year) that the African will expend his energies in planting a cash crop such as tobacco or cotton and neglect to plant food, trusting that with his cash yield he will be able to buy enough food to see his family through.

82. Great efforts are being made to improve agricultural practices, with the object of maintaining and improving soil fertility and increasing crop yields. Mechanized methods of cultivation are being introduced on an increasing scale, and the bulk purchase and storage of grains against emergencies is now well established. Nevertheless considerable efforts are still required in the shape of regulations, inspection and exhortation to ensure the production of adequate stocks of foodstuffs.

83. 1951 was a year of good harvests over most of Tanganyika, and there were no serious shortages of food. With the prevailing high prices for agricultural produce, a good deal of money found its way into the hands of the peasant farmers, but there was little to induce them to spend that money, and thus desire to earn more in future years. High prices will fail as an incentive to grow more crops unless articles which are desired by the African are freely available in exchange for the money he has earned by his labours.

84. The supply of sources of animal protein over the territory as a whole remains most unsatisfactory. Here again, high prices are not an incentive; the cattle owner receiving a higher price for each beast sold, sells fewer beasts. The fisherman makes enough in two or three days of work to

satisfy his present needs for some weeks and so less fish are caught. In several areas of the territory, meat or fish are practically unobtainable from one year to the next, and yet the cattle population, properly handled, should be capable of augmenting the supplies of milk or flesh to a considerable degree. The distribution of foodstuffs within the territory is often faulty. Whilst the poor communications and vast distances are against an efficient distribution system, it not infrequently happens that an area short of a particular commodity is unaware of an available surplus elsewhere. Also the supply of fresh green foodstuffs and of milk in some of the rapidly expanding townships is inadequate; this problem is also bound up with the poverty of communications.

85. The foregoing observations have been concerned with the nutritional state of the African population. It has become evident as a result of the medical examination of Asian school children in Dar es Salaam that there are sections of this community whose nutritional state is poor. A high incidence of microcytic anæmia, often very severe, has been observed in Asian women for many years.

VIII.—ENVIRONMENTAL HYGIENE

(A) HOUSING AND TOWN PLANNING

86. The post-war development of this Territory has resulted in a rapid growth of most townships. Unfortunately the building rate has not kept pace with the rising population, and the serious state of overcrowding reported from all major urban areas became worse during 1951. Town plans have now been drawn up for most of the major urban areas, though not all of these have been formally accepted as yet. The need for planning the future development of our towns is obvious; but the volume of work demanded of the town planning and surveying staff has necessarily delayed the making available of land to prospective builders. The standard of plans for new buildings submitted to the local authorities often leaves much to be desired, and this, too, results in considerable delay whilst plans are being altered to comply with the regulations.

87. Generally speaking most of the building effort has gone into commercial and industrial buildings and into low density housing. Serious shortages of all types of housing are to be found in all townships except Kongwa, which became a gazetted township during 1951. The most serious shortages are to be found in medium and high density housing, normally occupied by Asian and African communities. Both groups are suffering severely from the present high cost of building, in that very few individuals can afford to build themselves a house at prevailing costs. For example, at Tanga, the second largest town in the country, only six houses were completed by African owners during the whole year. Further factors

increasing the difficulty of building have been the over-all shortages of skilled and semi-skilled building operatives and the general shortage of building materials though there was a considerable improvement in supplies towards the end of the year.

88. The serious need for more housing in the high density areas of towns led to the setting up of a committee to study the problem; as a result of their recommendations Government is making increased provision for high and medium density housing for its officers. The development of several new housing areas in Dar es Salaam began during the year. At the time of writing, it appears doubtful whether existing schemes will even keep pace with the rate of expansion, let alone overtake the accumulated shortages of the past six years. One interesting development in housing is reported from Mwanza where a speculative builder has begun work on a housing estate primarily designed for Asian tenants, rather on the lines of private housing estates which were common in Britain in the years between the wars. The demand is so great that one would have thought that there were promising commercial possibilities in such development, but it is seldom encountered except on a small scale in Tanganyika. Development on such lines would seem a possible answer to what is now a social problem of the greatest importance, and it is understood that private housing estates have proved most successful in Rhodesia. But the demand for building of all sorts is still so pressing that presumably builders are able to get all the work they want without embarking on "speculative" building.

89. An unfortunate aspect of the growth of the towns and of the inability of the poorer African to find the capital necessary to build according to the standards required within townships and municipalities has been the rapid growth of "shanty" towns just outside the boundaries where restrictions do not exist. Not only are these hovels highly insanitary, but their existence leads to undesirable social conditions which can only have a bad influence on the social development of our urban communities.

90. Urban development in Britain during the nineteenth century is paralleled to a smaller extent by that prevailing in larger towns of this territory to-day. There is first hand evidence in Britain of the social consequences of uncontrolled slum development and overcrowding. At this time when economic considerations are necessarily paramount, it is pertinent to consider the enormous cost in money and social upheaval during the past thirty years in solving the slum problem in Great Britain. At present the problem in Tanganyika is relatively small; but, if the present trend continues without check, it will be much larger and incomparably more difficult to solve in a few years' time.

(B) WATER SUPPLIES

91. The growth of the towns outlined in the preceding paragraphs has many cases meant a great strain on the essential services, which have had to cope with demands far in excess of those for which they were designed. This has often been the case in regard to water supplies; alternative sources for extra water have sometimes been hard to find locally, and the difficulty of obtaining plant and piping has also been a serious hindrance to expansion. At Dar es Salaam the bringing into service of new sources has produced an adequate supply for the time being, after years of shortage. But present supplies are limited and will not be sufficient if development continues; the main drainage and sewerage system now being installed will cause a sharp increase in demand when it begins to operate. Supplies in certain of the new development areas of the Municipality have been inadequate, due to shortage of piping, and supplies in the Oyster Bay area are of a hardness which causes considerable domestic inconvenience. Consideration is being given to bringing water from the Ruvu river to the town; if this is done supplies should suffice for many years to come.

92. At Tabora, the completion and use of the new dam has resulted in supplies being sufficient at present, though here again the reserve against potential demand is slight. Work was done at Arusha during the year to augment and improve the local supply. At Mwanza and Bukoba, existing installations were unable to cope with the increased demand; at Mwanza new plant was installed and operated during the year. Tanga faces serious shortages, both of water sources and plant, and the eventual remedy would appear to be the utilisation of distant sources. At Lindi, work progressed on installation of a new supply line which is expected to operate in 1952. At Mvomoni, the impounded supply is adequate, but much of the domestic water in the commercial and high-density areas is drawn from insanitary wells. A piped supply was completed at Kilosa; at Iringa the present plant is working at maximum capacity. Neither Musoma nor Shinyanga possess main supplies, but work was continued on installing a supply at Shinyanga.

93. Since the war, small supplies have been installed at several minor settlements. These usually comprise a small pumping station at the source (frequently a dam) in combination with a filtration and chlorination plant. These are a welcome improvement on previous supplies which were usually highly insanitary and, in dry years, by no means certain. Kondoa is fortunate in possessing a magnificent natural spring, but the domestic supply taken from this is liable to pollution and does not always work satisfactorily.

(C) FOOD HYGIENE

94. The standards of food hygiene generally leave much to be desired, and much time and effort on the part of the health staff is devoted to their improvement. Increasing attention is paid to the structural condition and cleanliness of premises where food is prepared, handled and sold. Action

under the Food and Drugs Ordinance has to be taken when all other approaches fail to produce the desired results. It does not necessarily follow that because the premises are hygienic, the products prepared therein are pure. Standards of supervision by employers over food handlers are frequently poor and insanitary handling of food is extremely difficult to control where willing co-operation is lacking. Marked improvement can only be expected when the general public demands a higher standard of cleanliness from the suppliers.

95. Similar criticisms are applicable to many of the hotels in Tanganyika which have been the subject of unfavourable public comment during the past year. Control over hotels is vested in local Hotel Boards, which vary greatly in the extent to which they are prepared to apply their powers and the diligence with which they enforce their requirements. Hotel Boards are empowered under the Hotels Ordinance to revoke or refuse a licence to operate as a hotel where standards fall short of the prescribed requirements. This power has been invoked on occasion but it is reported that the improvements which resulted have seldom been maintained.

96. Another constant source of complaint is the adulteration of fresh milk supplies. There are few properly organised dairies in the country and the bulk of the fresh milk sold is purveyed by itinerant vendors, the control of whom is a major problem to most urban authorities. Legal proof of adulteration requires a chemical analysis of the milk; this can only be performed at Dar es Salaam, and the period which must elapse between despatch of samples and the receipt of the report is often considerable in the case of the more distant townships. The purveyor usually takes advantage of this to abscond, and it often proves impossible to trace him.

97. Steady improvement has been made in the standard of public buildings connected with the food trade. These have taken the form of new abattoirs or improvements to existing abattoirs and markets. Nevertheless there are still some towns and many minor settlements in which such buildings are still unsuitable or inadequate for the use to which they are put.

98. Many of these defects can be traced to the expansion of the towns, in which the demand has out-grown the local supply. When a particular commodity is in short supply, the natural tendency is to take what is available without question. When supplies become more abundant and when public opinion demands improved standards, improvements will come quickly enough but until then, progress can only be slow.

(D) URBAN SANITATION

99. Major problems in urban sanitation are the disposal of sewage, surface water and storm water. During the year work commenced on the installation of the new main drainage system at Dar es Salaam. In the towns sewage disposal in the commercial and high density areas is generally by means of

pit latrines, cesspits or buckets, all of which are frequent sources of nuisances. Cesspits in particular are seldom emptied until they have been overflowing for long periods, and the equipment available for emptying cesspits is generally inadequate to the demands made on it. Sullage water is usually discharged to a soakaway, but often the failure to provide grease traps leads to the rapid exhaustion of the absorbent power, with resulting overflow and pollution. In several towns the subsoil water level rises very high during the rains, with resultant flooding of pit latrines and soakaways. Few towns have an adequate system of storm water drainage over their entire area; consequently flooding is common in the low-lying parts during the rains, which affects pit latrines, soakaways and sometimes cesspits.

100. New buildings constructed in townships where piped water supplies are available have for some years been required to provide adequate systems of sewage disposal in the form of septic tanks, except in the case of African houses, but in some townships there is as yet no main water supply. A considerable amount of conversion of Government quarters to water-borne systems has been done over the past few years, and very few such houses remain on the bucket system where there is a piped water supply. Whilst the standards of sewage disposal in the more recent buildings are satisfactory, there still remain large numbers of older houses in every township where the system is insanitary. The problem of providing a satisfactory system for the majority of African inhabitants still remains. They cannot afford a water-borne system, even where the water is available. The pit latrine has obvious disadvantages, but up to the present it remains the only practical solution. The borehole latrine is preferable to the ordinary pit, and Africans are being encouraged and assisted to install this type.

101. Refuse disposal is carried out on an organized basis in all townships and is generally fairly satisfactory. Householders are required to provide proper dustbins with lids, but the supply of such receptacles for blocks of tenements or flats is often inadequate, and nuisances result. Another risk to the health of urban communities arises from the common failure to build ratproof stores and of holding large stocks of rat-attractive materials in shops and living-rooms. Proper storage space in towns for rat-attractive materials is usually totally inadequate.

102. In all townships, malaria control is carried out on lines laid down by the Malariologist and under the supervision of the local Health Office staff. In Morogoro, Tabora and Mwanza, special measures are taken against the relapsing fever tick (*O. moubata*), with good results. The gammexane dusting of houses by which this control is established is highly popular with the inhabitants, as it kills the other insects, such as bedbugs and fleas, with which so many of these houses are infested.

103. The work of urban health offices is handicapped by the lack of trained African sanitary inspectors. Training ceased during the war and owing to staff shortages has not yet been resumed. Many of these most useful men

are now approaching retiring age. On the other hand the number of European health inspectors in the Department increased in 1951, though the establishment was not filled. As a result of this, it was possible to strengthen the health supervision available in some areas, with beneficial results.

(E) RURAL SANITATION

104. For a number of years now staff shortages have prevented the posting of health inspectors for full-time work in rural areas. Such work as has been carried on has been done by African sanitary inspectors, with a minimum of supervision and advice and has been confined mainly to supervision of minor settlements and other concentrations of population, some malaria control and the investigation of reported outbreaks of infectious disease. Such European staff as has been available has been fully employed in urban areas, where a close watch on sanitary conditions has been necessary. However, towards the end of the year, it was possible to post a health inspector to each of the predominantly rural areas of Rungwe, Songea and Singida. In the latter district, his time since arrival has been fully occupied with anti-plague work. As mentioned before, opportunity was taken on the various plague control operations to carry out both propaganda and practical work with the object of improving hygiene standards in the rural areas affected. It seems unlikely that the staff position will allow of this work being followed up by return visits to these areas. Much can be achieved in rural areas provided that the spur of European enthusiasm and advice is frequently applied. Thus considerable progress in methods of conservancy and the protection of water supplies is reported from Bukoba, where for much of the year it has been possible to provide a medical officer purely for work in the rural areas. But over the country as a whole it must be admitted that little progress has been made in rural sanitation.

IX.—INDUSTRIAL HEALTH

(A) THE HOUSING OF LABOUR

105. Steady progress was made in 1951 by most of the larger employers in improving the conditions of housing for their labour forces. Despite the present high costs it is gratifying to note the tendency to construct in permanent materials. Although the initial cost of permanent buildings is high maintenance costs are so much lower by comparison with temporary building that in the long run they are more economical. Building supplies have been somewhat freer during the year, and the main obstacle in building has been the shortage of semi-skilled and skilled labour. Both the Public Works Department (in connection with road labour) and the Railway Administration have carried on with their programme of new housing. For the latter, 20 quarters were begun during the year, of which fifty-nine had been completed by the end of the year.

106. The standard of housing now being provided by some of the larger employers is good and well in advance of minimum legal requirements; nevertheless a great deal still remains to be done in the way of improvements to housing over the territory as a whole. Most of the smaller concerns find the capital cost of building good, permanent quarters is too great. It is interesting to note a tendency to increase the proportion of quarters built for married men accompanied by their families. They are much more stable than the "bachelor" labourers, and should provide the nucleus of a permanent labour force.

(B) THE HEALTH OF LABOUR

107. A large part of the unskilled labouring population migrates annually from the "labour supplying" areas to the "employing" areas. Whilst it is now slightly more common for a whole family to emigrate and to settle permanently, there is always a large movement to and from employment. Nowadays some form of transport is almost invariably used, only a very small proportion proceeding by foot; during the year even air transport was used from the Southern Province. The main routes used now have an organized system of transit camps, at most of which there is some degree of medical surveillance. No serious outbreaks of disease have been attributed to the movement of labour during the year. Mechanized transport reduces the risk of infection from sleeping sickness; many of the main labour routes traverse infected areas, which would take some days to cross on foot but which are passed in a few hours by lorry. As mentioned above, the substitution of a system of medical surveillance in place of the previous quarantine required for persons coming from sleeping sickness areas was made during the year. This has worked satisfactorily.

108. The migrant labourer usually seeks employment as a result of some economic stress, and in consequence his physical condition on arrival is seldom good. At the same time he has to adapt himself to a new environment. It is usually recognized that a "conditioning" period is required for new arrivals to adapt themselves to the strange conditions before they are able to perform a full task. At the same time the almost continuous influx of newcomers to the average size labour camp results in the constant introduction of new strains of disease to that community. As far as is known, no definite system of quarantine for new entrants is employed in Tanganyika; it is interesting to speculate whether such a system would improve the health in labour concentrations, but it would be extremely difficult to organize on an effective basis.

109. Concentrations of labour are particularly exposed to the dysenteric diseases, especially where the sanitation is defective or the water supply unprotected. Whilst there were many small sporadic outbreaks of this group of diseases, there were no serious epidemics during the year. The incidence of a choleraic form of dysentery in labour housed along the Ngerengere River was again observed during 1951, but not in such serious intensity as in previous

years. This river is heavily polluted, and investigations were continued with the object of advising employers using the river as a source of water as to suitable means of purification. Progress in the provision of piped supplies of water to labour lines continued during the year.

110. Three new fully equipped hospitals were under construction during the year, and two existing industrial hospitals were rehoused in permanent buildings. The standards of medical care provided continue to improve, but the shortage of trained auxiliary medical staff seriously limits the development of dispensary facilities in the smaller concerns. For the same reason the degree of sanitary supervision is often inadequate.

111. The statutory medical examination of attested recruits continued on the same lines as previously. The overall shortage of labour has led to a tendency to accept labourers volunteering for periods of work of less than six months; in such cases no formal attestation is required, and while many of these labourers are medically examined prior to acceptance, there is no legal obligation to accept the result of such an examination. Despite the demand for labour, it would appear that the physical standards laid down have been adhered to in practice.

(C) INDUSTRIAL DISEASES

112. Only anthrax was notified during the year under the Second Schedule of the Workmen's Compensation Ordinance. With one exception, the other diseases notifiable under this Ordinance are all associated with a much higher degree of industrialization than has yet been reached in Tanganyika. This exception is silicosis in relation particularly to the mining industry. No further field investigations into this disease were carried out in 1951, pending a decision as to a comprehensive study of the problems presented in Tanganyika and Uganda by the dust diseases. With large mining developments projected in the near future the importance of such a study is obvious.

(D) THE FEEDING OF LABOUR

113. During 1951 the supply of foodstuffs was adequate, and such shortages as occurred were due rather to failures in the distribution system than to any definite shortage. Considerable difficulty is experienced in several areas over the supply of meat or fish in the ration scale. The supply of meat to labour forces on the Tanga line has often been unsatisfactory in the past, but progress was made during the year on the construction of the new chilled meat factory near Arusha. When this begins to operate, adequate supplies should be readily available for this part of the country.

114. Few employers have any system of issuing cooked rations; the issue of dry rations is probably inevitable where the worker is accompanied by his wife, but for "bachelor" labour it is a most wasteful system. As yet there is nothing in Tanganyika to compare with the kitchens and restaurants provided

on the Copperbelt and on the Rand, and such communal feeding systems as exist are very crude. Despite the fact that initially the workers usually object strongly to the introduction of communal feeding, employers who have persevered are impressed with the benefits, both in economy in foodstuffs and increased output in work. It is unfortunate that the African does not set a proper value on good food; he will often prefer to accept Shs. 15/- in cash in lieu of a ration which he could not buy for less than Shs. 25/- to Shs. 30/-. Consequently, there is little demand from the employee for the improvement of rations, and it is only a comparatively few enlightened employers who appreciate the importance of proper feeding. It is to be hoped that the present shortage of labour will direct the attention of employers more towards the efficiency of the individual labourer, who must be in good physical shape to be capable of hard work.

X.—INTERNATIONAL AND PORT HEALTH

115. During 1951 Tanganyika was recognized as falling within the endemic zone of yellow fever in Africa. This permitted the relaxation of health restrictions applied to travellers arriving from the endemic zone.

116. An agreement was also reached with the Governments of the Belgian Congo and Ruanda-Urundi whereby frontier health formalities were simplified, and the movement of people between these countries was thereby facilitated. Control now rests on the prompt notification by the respective Governments of the occurrence of any of the "Convention" diseases, or any other disease of inter-territorial importance. At a time when restrictions on the free movement of travellers across frontiers seem to increase each year, it is gratifying to record measures taken with the object of making inter-territorial movement easier.

117. Another innovation was the setting up of a separate port health organization in Dar es Salaam where previously this work had been undertaken by the Municipal Medical Officer of Health. A full time medical officer and two health inspectors were posted for this work. The volume of movement through the port and airport of Dar es Salaam continues to increase, and with the completion of the deep water berths (which will not be for another two or three years) a much stricter control on the sanitation and hygiene of the port area will be required.

118. At the other ports and sanitary aerodromes there was little change in the system of control during the year. At Tabora airport, dwellings within the peripheral area were evacuated, and routine mosquito control measures were revised and improved. The trapping and examination of rats continued at the principal seaports and by courtesy of the East African Medical Survey Laboratory, routine examination of trapped rats was extended to the lake port of Mwanza. All specimens examined were negative for plague.

XI.—PRISON HEALTH

119. A very considerable programme of new building and extensions and improvements to existing prisons has been carried out since the war and as a result of this the standard of accommodation in prisons generally has improved. Despite the enlargement of the prison system, overcrowding is frequently met with but there were no serious outbreaks of communicable disease. Small outbreaks of enteric fever were reported from Dodoma and Lindi and the occurrence of ten cases of pulmonary tuberculosis at Moshi led to an investigation of all inmates by a member of the staff of the Tuberculosis Hospital at Kibongoto. The conclusion reached was that infection had been acquired outside the prison. One patient died during treatment and the remainder had their sentences commuted.

120. With one exception the nutritional state of prisoners was reported to be satisfactory. The exception was at Kingolwira, where forty-four cases of pellagra were discovered. All responded well to treatment. The Assistant Director of Medical Services, Eastern Region, is of the opinion that too much reliance is placed on maize meal as the staple article of diet at Kingolwira and has advised that groundnuts should be grown there and used to supplement the diet. He also comments that the diet here and at other prisons in the Eastern Region is very often deficient in red palm oil or ghee, other oils being substituted which contain no vitamin A.

121. This department is responsible for the medical inspection of gaols and of prisoners. In certain cases full-time medical staff is provided for the prison, but generally treatment is carried out from the local hospital, to which sick prisoners in need of in-patient attention are removed. The growth of hospitals has not been so rapid as the growth of the prisons, and in some cases prison wards in hospitals have not been large enough to cope with the demands made on them. This was particularly the case at Tabora Hospital where an outbreak of venereal disease amongst the boys at the Tabora Approved School greatly strained both the hospital accommodation and the capacity of the prison staff to provide supervision. No unusual mortality was experienced by prisoners. The Assistant Director of Medical Services, Western Region, calculated the mortality of prison inmates in that region as being less than one per 1,000 of the prison population.

PART III—CURATIVE SERVICES

XII.—HOSPITALS

122. *Dar es Salaam Group*.—This comprises the Sewa Haji, European, Maternity and Infectious Diseases Hospitals, and is the principal diagnostic and treatment centre for the Territory. These hospitals are administered by a Board of Management, of which the Superintendent of Hospitals is the chief executive officer. New wards were built during the year at the Infectious Diseases hospital. The building of a new maternity wing at the European hospital began towards the end of the year and will be completed in 1952. The name "European" conferred on this hospital by long usage is a misnomer, for whilst the accommodation is primarily for Europeans, other races are also accommodated.

123. The accommodation at the Sewa Haji Hospital has for many years been inadequate and obsolete, and it is intended that it will be replaced by a new 400 bed unit. One of the main problems in connection with this hospital is that of dealing efficiently with the large numbers of out-patients with which the existing accommodation cannot efficiently cope. It is the only Government centre for the treatment of African out-patients within the municipality of Dar es Salaam. During the year, the decision was taken to build satellite "dispensaries" for out-patient treatment at various localities in the municipality, and this will be the first phase in the replacement of the hospital. It should do much to improve the services rendered to the African population in Dar es Salaam which are acknowledged to be inadequate at present.

124. The standard of nursing within the Group has been improved during the year, by an increase in the staff of nursing sisters, and by reducing the frequency of posting sisters from the Group: this making for more continuity. This has been particularly noticeable in the work of the Maternity Hospital, where domiciliary and clinic work is carried out with the assistance of the District Health Visitor.

125. The Red Cross continues to make a notable contribution to the welfare of the patients in the various hospitals comprising the Group. In addition to providing welfare amenities in the form of libraries and canteen services, occupational therapy and hydrotherapy are also carried out, and assistance is given in many other ways. This help is recorded with gratitude. As well, Asian Red Cross Nursing Aids have been employed at the European hospital. Within the Group are included radiological and physiotherapy departments; these have functioned satisfactorily during the year, though shortage of staff necessitated a temporary closure of the physiotherapy department during the year. The maintenance of radiological equipment in efficient working order under the local climatic conditions requires constant vigilance. The appointment of a radiological technician has resulted in a marked improvement in the efficiency of maintenance.

126. *Special Hospitals.*—Two special hospitals exist, which together with the Dar es Salaam Group, operate outside the Regional system under the administrative charge of the Specialist in charge. Kibongoto Tuberculosis Hospital is situated on the lower slopes of Mount Kilimanjaro, and has been practically rebuilt during the year. Previously, much of the in-patient accommodation was in temporary grass buildings, but with the completion of the building programme in 1952 these will have been replaced by permanent wards, with in-patient accommodation for over 200 patients, together with administrative buildings, theatre, X-ray rooms and workshop for occupational therapy.

127. In 1951 a total of 1,581 persons were admitted to this hospital. Of these, 832 were suffering from tuberculosis; 425 patients suffering from pulmonary tuberculosis, and 153 suffering from other forms of this disease were discharged in the course of the year. One hundred and six deaths from tuberculosis occurred in the hospital, 105 of these were due to the pulmonary form. At the end of the year 254 cases of all types of tuberculosis remained under treatment in hospital. The origin of the tuberculosis patients treated in the hospital is shown in the following table:—

TABLE XIV
ORIGIN OF TUBERCULOSIS CASES TREATED AT KIBONGOTO, 1951

Tribe, Area or Race								No. of Patients
<i>Africans:</i>								
Wachagga	...	...	...	...	...	...	...	399
Other tribes, Northern Province	...	...	...	...	...	...	...	103
Tanga Province	...	...	...	...	...	...	...	109
Remainder of Tanganyika	...	...	...	...	...	...	...	76
Kenya	...	...	...	...	...	...	...	50
Other East and Central African Territories	...	...	...	...	...	...	...	13
<i>Non-Africans</i>								
...	...	...	...	...	...	...	...	82

128. A number of satellite dispensaries are supervised from Kibongoto Hospital. Whilst these afford general medical treatment, they are also equipped to provide special treatment for tuberculosis. They are important to the work of the hospital, as through them it is possible for cases discharged from the hospital to continue treatment and observation. Contacts of cases can be traced and examined, so that infection can be discovered in the early stages when treatment is likely to be most effective. Experience at Kibongoto has shown that a system of this sort is effective in the control and prevention of a chronic disease such as pulmonary tuberculosis. Tuberculin surveys in the Kilimanjaro area show that the infection rates in school children of various age groups have declined over the past ten years. This is an indication that tuberculosis is declining in this area.

129. The other special hospital is the Mental Hospital at Dodoma. The main administrative change at this hospital was the transfer of further criminal lunatics to the neighbouring Broadmoor Institution which was opened towards the end of 1950. In effect this did not greatly increase the capacity of the hospital, as certain of the accommodation in the Broadmoor Institution

had previously been available to the hospital. The total number of persons remaining in hospital on 31st December, 1951, was 249, compared with 214 on 31st December, 1950, an increase of thirty-five persons. By the end of the year accommodation, particularly for females, was insufficient for the demands being made for admissions. Over the last seven years, the trend has been for the number of patients to increase by between thirty and forty each year, and it will be necessary to provide extra ward space accordingly.

130. Efforts to recruit a psychiatric specialist to take charge of this hospital during the year were unsuccessful, and difficulty was experienced in recruiting trained mental nursing staff, particularly females. These staff difficulties caused some curtailment in special forms of treatment. A second mental hospital previously maintained by the department at Lutindi in the Tanga Province was handed over to the Lutheran Mission in November. In future they will continue to run this hospital.

131. A farm is run in conjunction with the Dodoma Hospital; and good results are reported from the cultivation of vegetables, and by the end of the year many acres had been sown to staple crops. During the year, a poultry unit was started on this farm, and is reported to be progressing favourably.

132. *Leprosaria*.—Two institutions for the treatment of leprosy are maintained by the Government, at Chazi in the Morogoro District, and Makete in the Rungwe District. At both institutions trained staff are employed by arrangement with the British Empire Leprosy Relief Association. It is proposed to extend the accommodation and facilities at both of these leprosaria, and financial provision has been made for this under the Development Plan. It is also proposed to extend the existing leprosarium at Kolondoto in Shinyanga District, which is run by the Africa Inland Mission, and work on the installation of a water supply here was begun late in the year. At Makete two staff quarters were built during 1951, and a crèche, built with funds given by the Red Cross, was almost completed by the end of the year.

133. *Central Region*.—Medical officers are stationed at the following hospitals in this region: in the Central Province at Dodoma (two) and Singida (one), the latter being re-opened during the year as a Medical Officer station; and in the Southern Highlands Province at Mbeya (two), Iringa (two) and Tukuyu (one). Major building works during the year included the building of a small emergency European ward at Dodoma, an Asian block, an African ward of twenty beds, and a new out-patient department at Iringa; the final completion of the new theatre block and a new Asian block at Mbeya. Tukuyu hospital is in a dilapidated condition, but its replacement by a completely new unit has been approved and awaits the builders.

134. Smaller hospitals in this region are at Kondoa-Irangi, where a nursing sister was posted for the latter part of the year, and Mpwapwa in the Central Province, and at Chunya in the Southern Highlands. At the latter hospital it was possible for a medical officer to visit from Mbeya on regular days.

135. Mission hospitals with resident registered medical staff are maintained at Mvumi (Church Missionary Society), Kiomboi and Iambi (Augustana Lutherans), all in the Central Province. The Overseas Food Corporation hospital at Kongwa is a well-equipped centre, and afforded treatment for many "non-entitled" persons, i.e. persons for whom the Corporation is not required to provide medical facilities. During the year a medical officer was employed by the Tanganyika Wattle Estates in Njombe District, and an arrangement was made whereby this doctor's services were available to Government on a part-time basis.

136. *Eastern Region.*—As explained above, the Dar es Salaam group of hospitals does not come under the administration of the Assistant Director of Medical Services, Eastern Region, although geographically situated within that region. Medical officers are stationed at Morogoro and Kilosa hospitals in the Eastern Province, and at Lindi and Songea in the Southern Province. No major new construction was carried out at any of these hospitals during 1951, but a piped water supply was installed at Kilosa hospital during the year. At Lindi the hospital water supply remained intermittent and uncertain, and was a serious handicap to the efficient running of the hospital. Various structural alterations were undertaken at this hospital, the most important being to provide accommodation for European midwifery.

137. During 1951, the posting of a second medical officer to Morogoro allowed of improved attention being given to the hospital, and this is notably the chief reason for a marked increase in the number of patients treated. Smaller hospital units are maintained at Mahenge, Utete, Bagamoyo and Mafia in the Eastern Province, and at Kilwa, Mikindani, Tunduru and Liwale in the Southern Province. At Kingolwira a member of the medical staff is posted at the prison hospital. The Assistant Director of Medical Services comments on the great difficulty of supplying the authorized hospital diet; some of the articles included in this are virtually unobtainable in parts of the Southern Province, and in the more remote stations there is constant difficulty in obtaining the full variety of foodstuffs.

138. In the Eastern Province, mission hospitals with resident medical staff are maintained at Minaki (Universities Mission to Central Africa), Kwirowa and Ifakara (Capuchin). In the Southern Province, the Benedictines have hospitals at Ndanda, Mnero and Peramiho, and the Universities Mission to Central Africa at Lulindi and Masasi, whilst their hospital at Liuli receives part-time attendance from a doctor. The hospital at Peramiho has been extended during the year, and that Masasi has been rebuilt on a new site. Mnero is now a recognized nursing training unit, and has been expanded to the standards required.

139. Only two industrial hospitals in the Region provide important facilities for non-entitled patients. At Nachingwea, the Overseas Food Corporation hospital moved into new permanent buildings towards the end of the year. At Mtwara the contractors for the port works have established a

small general hospital which it is proposed will be taken over by Government on completion of the port works in 1952. The area around Masasi in the Southern Province has the distinction of possessing the heaviest density of hospital facilities in any part of the Territory; within a radius of thirty miles of Masasi itself, there are no fewer than five general hospitals, with a total of 417 beds, and no less than ten doctors. Four of these hospitals are run by missions, and the remaining one is industrial.

140. *Northern Region*.—The largest hospital in this region is at Tanga, where a surgical specialist is stationed, and where, for most of the year, a medical specialist was also posted. The hospitals here comprise a group similar to but smaller than the Dar es Salaam group, composed of African and non-African general hospitals sited adjacently, a maternity and child welfare clinic and an infectious diseases hospital, the whole being administered by a hospitals superintendent. The new operating theatre block in the African section was brought into use in January, extensive renovations were made to the "European" section, and the construction of a new dental/ophthalmic block was almost complete by the end of the year. A medical officer posted to the Lushoto District in the Tanga Province took charge of the district hospital during the year.

141. Construction of the new Korogwe hospital continued, and this unit should be completed during 1952. Subsidiary Government hospitals in the Tanga Province were maintained at Muheza, Korogwe, Pangani and Usangi.

142. In the Northern Province, medical officers are in charge at Moshi, Arusha and Monduli, and during the year a medical officer was posted to Mbulu. Fairly extensive additions to the Moshi hospital were completed or in hand during the year, comprising a new Asian ward, a new African female ward, an isolation block, and extensions to the out-patient block comprising an X-ray dark room, operating theatre and sterilizing room. A new in-patient block was built by the Masai Native Authority at Monduli hospital. A subsidiary hospital is maintained at Oldeani.

143. In the Tanga Province, mission hospitals are established at Kideleko and Magila (Universities Mission to Central Africa), and at Bumbuli and Gonja (Lutheran). The latter hospital has just been completed. A new ward at Magila was approaching completion at the end of the year. In the Northern Province, Machame hospital is maintained by the Lutheran Mission. Ndareda Hospital, in Mbulu District, is run by the Pallotine Fathers; here a temporary ward was completed during the year, and construction of a new permanent ward was begun. Full operating theatre equipment was received during the year.

144. The Region comprises some of the major "employing" areas of the Territory, and a number of industrial hospitals are provided by the larger estates. Resident practitioners are in charge of the hospitals at Mazinde, Toronto, Amboni, and Hassani estates. The hospital facilities at the latter

were freely placed at the disposal of the department during the outbreak of plague in the Same District. At other estates in the Tanga Province, hospitals are provided under the visiting supervision of medical practitioners. In the Northern Province, a new hospital at Lucy Estate was under construction during the year.

145. *Western Region*.—Government maintains hospitals staffed by medical officers at Tabora and Kigoma in the Western Province and at Mwanza, Bukoba and Musoma in the Lake Province. Three new replacement wards at Mwanza were completed and occupied during the year, and a new mortuary was completed to replace the old one, which was unsuitably sited close to the wards. At Bukoba the provision of covered ways between the wards was completed early in the year, and electric light for emergency use was installed in the theatre, maternity ward, and duty room by the medical officer himself, the current being led from the X-ray generator. At Musoma a kitchen was built for the non-African wing; previously food for patients in this wing was prepared in the sisters own kitchen. At Kigoma extensive redecoration and re-organization of the existing accommodation has much improved the hospital.

146. Subsidiary hospitals exist at Kahama, Nzega, Kasulu and Sumbawanga in the Western Province. It had been hoped to commence the building of a new hospital at Nzega, and funds were available for this, but it only proved possible to clear the site, and no building was done. In the Lake Province there are subsidiary hospitals at Shinyanga, Shanwa and Biharamulo.

147. In the Western Province there are the following mission hospitals; Sikonge (Moravian), Manyovu (Seventh Day Adventists) and Kabaga (White Fathers—Medical Missionaries of Mary). The latter station was opened during the year, using an old school built in permanent materials as their hospital, until the new buildings which are under construction are completed. A new hospital is being built at Manyovu; in the meantime the work here is being carried out in temporary buildings. At Sikonge, temporary wards are gradually being replaced with permanent buildings.

148. In the Lake Province the Africa Inland Mission maintains a hospital and leprosarium at Kolondoto, where it is proposed to build a Government leprosarium in conjunction with the existing facilities. The Mennonite Mission in North Mara District has a hospital at Shirati, and a smaller unit with a resident practitioner at Nyarero in the same district. Ndolage Hospital (Church of Sweden), in Bukoba District, has been largely rebuilt and re-equipped during the year. Kagondo Hospital (White Fathers), in this District, has been without a resident practitioner during the year. A medical practitioner took up residence at Kagunguli (Ukerewe Island) during the year and is at present working in the small dispensary maintained there by the White Fathers. It is planned to build a hospital here. At Sumve the White Fathers maintain a hospital which is the only recognized grant-earning mission training centre in the Region.

149. At Geita, the Geita Gold Mining Company receives a grant from Government for the services rendered at their hospital to the local population. Other industrial hospitals are maintained by Williamson Diamonds, Limited, Urawira Minerals and the Overseas Food Corporation at Urambo. At the latter place the new permanent hospital buildings are expected to be ready for occupation early in 1952.

XIII.—DISPENSARY SERVICES

TABLE XV

Region	No. of N.A. and Government Dispensaries						Total Number of First Attendances Recorded		
	*1950			1951			*1950		1951
<i>Central :</i>									
Central Province...	...	...	39	...	41	...	349,306	...	384,662
Southern Highlands	...	...	53	...	54	...	662,294	...	735,521
<i>Eastern :</i>									
Eastern Province	...	...	70	...	79	...	241,253	...	550,351
Southern Province	...	...	27	...	30	...	116,115	...	189,295
<i>Northern :</i>									
Tanga Province ...	...	...	34	...	38	...	216,005	...	230,552
Northern Province	...	...	46	...	51	...	345,625	...	399,236
<i>Western :</i>									
Lake Province ...	...	...	104	...	109	...	1,281,769	...	1,559,132
Western Province	...	...	55	...	60	...	392,881	...	668,587
Totals		...	428	...	462	...	3,655,248	...	4,717,336

*Figures do not include seventeen dispensaries (paragraph 151).

150. The rural dispensary services represent the main source of "Western" methods of medical treatment available to the population in general. The greater part of the services indicated in the table above have been provided by the local native authorities, and have developed very much on their own lines within districts. In most cases it has not been possible in past years for this department to take any active part in the supervision and direction of these services, and as a result the widest possible variations are to be found in the calibre and quality of the service provided in different areas—from the tax clerk in Masailand who is provided with a box of simple remedies in his office to the well-equipped permanent dispensaries to be found in the Western Region.

151. Included in the above table are seventeen Government "bedded dispensaries" under the charge of medical assistants. At one time, such institutions were termed "hospitals", but now this term is used only for institutions which have resident registered or licensed medical practitioners. These government "bedded dispensaries" conform to normal departmental regulations, and are under fairly close supervision; and the comments which follow are not intended to apply to them but rather to the much greater numbers of Native Authority dispensaries.

152. Since the end of the war efforts have been made to give a closer degree of professional supervision to rural dispensaries and to attempt to achieve some degree of uniformity over the service as a whole. Shortage of medical staff coupled with the fact that many of the dispensaries are remote and inaccessible, has stultified attempts to give closer supervision until 1951, when the improvement in the strength of medical officers did allow of some extension in supervision being made. Nevertheless the fact remains that the majority of these dispensaries operate without adequate professional supervision and will continue to do so for some years yet. The achievement of some degree of uniformity in these services presents serious problems, as the financial resources of the many different native authorities vary so widely. They influence such important points as pay and conditions of service, standards of buildings, equipment and supplies and other matters which are vital to the establishment of common standards.

153. During the year agreement was reached in regard to the introduction of a standard salary scale for all certificated staff employed in these services and this will be introduced in 1952. This should do something to remove a major difficulty in the past, which was to attract and retain men of suitable calibre for training for this work. It will also facilitate transfer of staff between different areas whenever this is desirable.

154. Standard lists of drugs and equipment have also been drawn up, and are gradually being introduced over the Territory. A major step in this campaign was taken during the year when control of that dangerous weapon the syringe, was established. As a relic of the great yaws campaigns of the 1920's, syringes and potentially dangerous drugs were to be found in most of these dispensaries, and in many cases they were being freely used by totally untrained staff. Syringes and injectable drugs are now issued only to individuals who possess a certificate of competence issued by the local Assistant Director of Medical Services, which specifies the class of injection which that individual is competent to give. The predilection of the African for injection has made this an unpopular restriction on the whole, but there can be no doubt as to its wisdom.

155. It is desirable that some semblance of order and supervision shall be established over existing dispensaries before further expansion takes place and in accordance with this policy the establishment of new dispensaries is restricted to places where there is serious need of such a service. Existing units can only serve a part of the total population of Tanganyika, and the potential development in this field is immense. Unless certain minimum standards can be achieved and maintained, the value to the community served is negligible, whilst the cost may be considerable. It has been shown many times that the full value of local services of this nature is attained only when they are adequately supervised by professional staff and when the man in charge has undergone a proper course of training in his work.

156. It should be noted that these dispensaries provide only simple forms of treatment at the present time. Maternity and child welfare services have been established at some rural centres, but at present insufficient emphasis is being placed on preventive measures. The establishment of both curative and preventive services is necessary if the rural dispensary or health centre is to make a really useful contribution to the health of the local community.

XV.—SPECIALIST SERVICES

(A) MEDICAL

157. A second medical specialist was appointed during the year, and was stationed at Tanga. At the close of the year he transferred to Dar es Salaam for the period of vacation leave of the other specialist.

158. Chloroquine has been tried fairly extensively during the year on cases of malaria, but has been found to produce toxic symptoms which are disturbing to the patient. Paludrine prophylaxis at a dose of 100mgm. daily is found to be efficient though by no means completely effective in preventing infection with malaria; no serious complications of malaria have been seen in persons taking this drug regularly and in adequate dosage.

159. The mortality recorded in tetanus remains high; treatment with anti-tetanus serum is expensive and, in established cases, ineffective; efforts have been made to find a suitable sedative for controlling the spasms in this disease.

160. Cirrhosis of the liver with ascites is a fairly common cause of admission to hospital in the Dar es Salaam area and efforts were made during the year to try and discover the aetiology of this condition, but so far little success has resulted.

161. Streptomycin was extensively used against plague for the first time in this Territory, with a marked reduction in the case mortality rate.

162. The volume of radiological work has steadily increased; radiographers are stationed at Dar es Salaam and Tanga, and during the latter half of the year a medical officer (special grade) was put in charge of the radiological department Dar es Salaam. From time to time there have been severe shortages of X-ray films.

(B) SURGICAL

163. During the year several graded medical officers with surgical qualifications were appointed. These have been posted to the larger hospitals where fairly adequate facilities exist for surgical treatment, with the result that there has been a considerable increase in the scope and quality of surgical work at these centres. There is a very large field for surgery over the Territory as a whole, and the amount of work must be expected to increase in future years.

164. From funds provided by the generosity of certain private individuals and by Government, 150 mgms. of radium were purchased. These supplies had not arrived by the end of the year, but are expected early in 1952.

165. Much of the surgical work is of a routine nature, of which operation for the cure of hernia and hydrocoele are the most numerous.

There is a considerable volume of accident surgery, with fractures and dislocations being the commonest injuries requiring surgical treatment.

(C) OPHTHALMIC

166. One Ophthalmologist is posted to the Dar es Salaam group but makes frequent visits to other large centres in the Territory. The volume of work is increasing rapidly, and during the year 8,156 cases were seen in Dar es Salaam and 624 cases on tour. Operative work is carried out on two afternoons in the week at the Sewa Haji hospital.

167. Aureomycin was tried out extensively in the treatment of trachoma but results were reported to be disappointing. It is effective against secondary infection imposed on the original virus infection, and thus assists in clearing up the associated symptoms but the effective treatment of this disease, which is the most important single cause of blindness in the territory, is still lengthy requiring from one year to eighteen months of regular treatment.

168. With the expanding school population of all races, refractions and the prescription of glasses are assuming increasing importance. During the year arrangements were made for the supply of glasses at government expense to school children whose parents could not afford to pay the cost.

(D) DENTAL

169. The Senior Dental Surgeon proceeded on vacation and study leave during the latter part of the year; one dental surgeon returned from vacation leave in May and one arrived on first appointment in September. Government dental units were maintained at Dar es Salaam and Tanga and, in addition, an increasing number of visits to the main centres throughout the territory was made. In addition various local arrangements were made whereby persons entitled to free dental treatment or treatment at reduced rates could utilize the services of local non-government dental practitioners.

170. The system of daily dental clinics for Africans was continued at Dar es Salaam and Tanga, and services were supplied to schools in these areas. The demand for treatment by Africans is increasing rapidly, and the present service is not adequate to cope with this demand.

171. During 1951, 13,271 dental attendances were made by the government service, 620 X-rays were taken, 431 dentures were made and 212 were repaired. Nineteen cases of jaw injury were attended.

(E) MENTAL

172. In November the Lutindi Mental hospital was taken over from Government by the Lutheran Mission; the only government centre for mental treatment is now at Dodoma.

173. The absence of a psychiatrist in combination with the shortage of trained European nursing staff led to some reduction in the amount of special treatment undertaken at this hospital.

174. There were 214 admissions to the hospital, of which 143 were men and 71 women. Of the 145 persons discharged from hospital, 105 were discharged cured, 22 were improved on discharge, 5 were found not to be insane and 13 were transferred to the Broadmoor Institution. Thirty-six deaths amongst patients occurred during the year. The classification of patients by race and sex resident on 31st December, 1951, was as follows:—

	Race			Male		Female
European	...	...	...	3	...	4
Asian	...	...	...	10	...	7
African	...	...	...	149	...	76
Total all Races				162	...	87

175. The following were the commoner diseases found in patients admitted during the year:—

				Cases	
Simple schizophrenia	...	...	...	14	} All types 38 cases
Katatonic schizophrenia	...	...	...	8	
Hebephrenic schizophrenia	...	...	...	7	
Paranoic schizophrenia	...	...	...	9	
Epilepsy	...	...	...	21	
Manic depressive states	...	...	...	19	
Acute mania	...	...	...	17	
Recurrent mania	...	...	...	16	
Senile dementia	...	...	...	15	
Confusional states	...	...	...	15	
Mental deficiency	...	...	...	14	

176. Occupational therapy and recreation was organized for suitable patients, and scholastic instruction was given. As mentioned previously, agriculture forms an important part of the occupational therapy provided at this hospital. With the installation of a "booster" pump and storage tank the water supply to the hospital is now satisfactory.

PART IV.—ANCILLARY AND RELATED SERVICES

XVI.—LABORATORY SERVICES

177. The Report of the Senior Pathologist for 1951 will be published separately and for full details of the work of the Laboratory Services during this year, it should be consulted. A brief summary of these services is inserted in this report.

178. The laboratory services of the department are based on the Headquarters Laboratory, situated in Dar es Salaam, which is under the charge of the Senior Pathologist. This is the only Government pathological laboratory at which a complete range of pathological investigations can be undertaken, and it is also the training centre in pathology. During the year further progress was made with the general repairs and reconditioning of this building, in which all available space is now utilized.

179. Smaller laboratories under the charge of laboratory assistants are maintained at twelve of the most important centres in the Territory; at these centres simple serology, blood counts, and the simpler qualitative biochemical examinations can be performed in addition to the routine parasitology undertaken by direct microscopy. Microscopists are stationed at almost all government hospitals for the routine examination of blood, faeces and urine for parasites. Darkground microscopical examinations can only be undertaken in Dar es Salaam at the present time.

180. The headquarters laboratory is also the territorial centre for the storage and supply of vaccines and sera. Vaccine lymph is obtained from the Kenya Lymph Institute, and during the year 1,721,060 doses were issued. Some stations in the Territory on a direct line of communication with Nairobi receive their supplies direct from the Institute (such supplies are included in the total issue given above). £5,438 were expended on the purchase of vaccines and sera in 1951.

181. Epidemiological work carried out during the year included the examination of samples of water, foodstuffs and some veterinary bacteriology, as well as the routine examination of rats trapped in the port of Dar es Salaam. Special investigations were undertaken into an outbreak of food poisoning in the European Hospital, Dar es Salaam, and in the same plague outbreak. Investigations continued on the isolation of *Salmonella* types in Dar es Salaam, and included investigations into the epidemiology of human salmonellosis. A study was also made into the immunological relationships between ascariasis and ankylostomiasis.

182. During the year the Senior Pathologist visited the stations of Mbeya, Tukuyu, Iringa, Chunya, Dodoma and Tanga. As was mentioned in the 1950 report, the laboratory services in general are overloaded by the immense amount of work involved in the routine microscopical examination of blood, urine and faeces with the result that much of the work is inaccurate and valueless. This state of affairs will only be remedied when sufficient trained staff becomes available. Meanwhile restraint should be exercised in the submission of specimens for routine examination.

XVII.—MEDICAL TRAINING

TABLE XVI

NUMBER OF STUDENTS IN TRAINING IN VARIOUS CATEGORIES, AND NUMBERS SUCCESSFULLY COMPLETING TRAINING. 1951—GOVERNMENT CENTRES ONLY

Category	No. in Training		No. Completing		No. Failing	
	M.	F.	M.	F.	M.	F.
<i>Dar es Salaam Centre:</i>						
Medical Assistants	38	—	12	—	3	—
Laboratory Assistants	10	—	3	—	1	—
Pharmaceutical Assistants	10	—	3	—	1	—
Assistant Hospital Stewards... ..	6	—	—	—	—	—
<i>Mwanza Centre:</i>						
Rural Medical Aids II	20	—	6	—	4	—
<i>Mweka Nursing Training Centre:</i>						
Nurses	73	41	14	6	4	—
<i>Dar es Salaam:</i>						
Midwives	—	8	—	2	—	—

(A) DAR ES SALAAM TRAINING CENTRE

183. As well as training medical assistants, this centre also produces men trained in the technical work of certain of the ancillary services. A medical officer is in charge of this centre, assisted by a medical instructor; towards the end of the year a warden was appointed in charge of the students' hostel. Additional buildings at this hostel were completed during the year. All students undergo a three-year course of training. Instruction is given by various members of the medical staff, and includes lectures, demonstrations, ward rounds and practical work. Categories other than medical assistants receive specialized training in that particular section in which their future work will lie.

(B) MWANZA TRAINING CENTRE

184. This centre trains men for work in the rural dispensaries, and candidates successfully completing the two-year training course are classified as Rural Medical Aids. Hostel accommodation is provided at the centre, which is under the charge of a medical officer, assisted by a head teacher and an assistant teacher, both of whom are medical assistants. During the year plans were made for the extension of this centre, which it is hoped will take place in 1952.

(C) MWEKA NURSING TRAINING CENTRE

185. Nursing training is carried out by Government on the "block" system, whereby male nursing students undergo a period of intensive theoretical training at Mweka, for a period of some three months in each year, then returning to hospitals in various parts of the country for a period of practical work under the supervision of Nursing Sisters for the remainder of the year. The total training period is for three years. Female students remain resident at Mweka or Tanga and carry out their practical work at Moshi or Tanga hospitals. Mweka was chosen as the centre for this training because of the impossibility of finding adequate hostel accommodation for the students anywhere else in the territory. During the year extensions were made to the buildings at Mweka, under the supervision of a senior health inspector; the programme of work on these buildings will be completed in 1952. A second sister tutor was posted to Mweka during the year. Particular attention is paid to the organization of hostel life, and amongst the recreational facilities provided for the students are cooking lessons, singing and dancing lessons, netball, badminton and "Guides".

(D) MIDWIFERY TRAINING

186. The training of midwives is undertaken in conjunction with the work of the Maternity Hospital at Dar es Salaam, and a residential hostel under the charge of a nursing sister is provided here. Instruction is given in both infant welfare and midwifery, and students sit the Territorial Examination.

187. Territorial standards for certificates of proficiency in nursing and midwifery have now been in force for several years, and examinations are conducted annually for candidates from both the Mission and Government training centres. As has already been mentioned it was only during 1951 that planning began with a view to the production and revision of syllabuses for the training of other categories of assistant medical staff, and a Territorial Training Board for these categories was set up. The new syllabuses and training regulations will be introduced in 1952.

188. It is noted with pleasure that the missions are now taking a more active part in medical training; under the grants-in-aid regulations specific grants are made to mission centres whose facilities reach the required standards. During the year arrangements were completed for the opening of an assistant health inspectors' Training School at Kongwa in 1952; students will sit the Overseas Certificate of the Royal Sanitary Institute. The production of African assistant health inspectors will help to fill an increasing need for such staff in the health services.

XVIII.—MISSION MEDICAL SERVICES

TABLE XVII

MISSION MEDICAL SERVICES, 1951

Category	No.	No. of Beds
With resident doctor(s)	28	1,829
Without resident doctor(s) but with over 20 beds	43	2,001
Dispensaries	101	260
(Fifty-nine maternity and child health clinics are also maintained by missions, many of which are attached to existing hospitals or dispensaries).		

189. As can be seen from the above table the various missionary societies play an important part in the provision of medical facilities in the Territory, and their activities have been extended considerably during 1951. Thus the number of centres with resident practitioners has increased by seven during 1951, and the number of beds available by 148. It is unfortunate that many missions have failed to submit adequate statistics of the work done during the year. Such accurate statistics as are available present so incomplete a picture of the total amount of work which has been performed that it has been decided not to include them in this report.

190. During 1951 government grants-in-aid to missionary societies for medical work totalled £54,776. In addition certain native authorities give financial or other forms of assistance to missions for medical work carried on in their areas. Missions are also permitted to buy medical stores through the government organization, and receive free supplies of drugs used for the treatment of leprosy. Grants payable are assessed each year by the Missionary Medical Committee, on which each of the main societies is represented, and are payable in respect of medical work and for medical training. The distribution of grants for 1951 is shown by the following table :—

TABLE XVIII

GRANTS-IN-AID TO MISSIONS, 1951

Society	Grants for Medical Work £	Grants for Training £	Total £
Universities Mission to Central Africa	17,193	1,150	18,343
Lutheran Missions	11,445	270	11,715
Benedictine Missions	6,965	500	7,465
Church Missionary Society	4,885	1,040	5,925
White Fathers Mission	2,730	250	2,980
Moravian Mission	2,093	—	2,093
Africa Inland Mission	1,800	—	1,800
Capuchin Mission	1,395	—	1,395
Mennonite Mission	1,260	—	1,260
Pallotine Fathers	1,125	—	1,125
Seventh Day Adventist Mission	675	—	675
Totals	51,566	3,210	54,776

191. The Mission hospitals are widely distributed over the Territory, and each hospital usually acts as the centre for a number of satellite dispensaries or other institutions spread around it. It had been hoped in 1950 that mission practitioners would be able to undertake the medical supervision of native authority rural dispensaries in certain areas. This is still being done in some places, but most practitioners found that they had not time to give to this extra service.

TABLE XIX

DISTRIBUTION OF MISSION HOSPITALS WITH RESIDENT DOCTORS

Province	No. of Hospitals
<i>Central Region:</i>	
Central	2
Southern Highlands	2
<i>Eastern Region:</i>	
Eastern	3
Southern	6
<i>Northern Region:</i>	
Northern	2
Tanga	4
<i>Western Region:</i>	
Lake	6
Western	3

192. During 1951 resident doctors were appointed to Kagunguli (Ukerewe) and Ifakara; both these stations were previously in the charge of registered nurses. A doctor was also appointed to Kabanga (Kasulu) where a new hospital is building. The qualified and certificated staff employed by missionary societies is shown in the following table:—

TABLE XX

QUALIFIED AND CERTIFICATED MISSION MEDICAL STAFF, 1951

Category	Number
Medical practitioners, registered	33
Medical practitioners, licensed	1
Dental surgeon, registered	1
State Registered Nurses	156
African Medical Assistants	40
African Certificated Nurses	57

193. As mentioned previously, the missions are playing an increasing part in medical training, and during the year two additional centres were approved for the training of nurses and one for the training of midwives.

TABLE XXI

APPROVED MISSION MEDICAL TRAINING CENTRES, 1951

Category	Place	Society
Medical Assistants	Bumbuli ...	Lutheran
	Minaki ...	U.M.C.A.
Nurses	Minaki ...	U.M.C.A.
	Lulindi ...	U.M.C.A.
	Magila ...	U.M.C.A.
	Mnero ...	Benedictine
	Mvumi ...	C.M.S.
	Sumve ...	White Fathers
Midwives	Mvumi ...	C.M.S.
	Magila ...	U.M.C.A.
	Ndanda ...	Benedictine
	Sumve ...	White Fathers

194. A considerable amount of new building has been undertaken during 1951 by the missions, some of which has been mentioned under the description of hospital services earlier in this report. Generally speaking much more construction is now being done in permanent materials, which are not only more satisfactory but cheaper in the long run, as the adequate maintenance of temporary structures is very costly.

XIX.—RESEARCH

195. No section of the department is specifically concerned with research work as such. The staff of the Malaria Section are engaged upon a number of investigations into various aspects of malaria control, but this work is carried out in collaboration with and under the control of the Inter-territorial Malariologist. Details have been given earlier in this report, paragraphs 53 to 56. Under the Senior Pathologist investigations have been continued into the problems of human salmonellosis in Dar es Salaam; full details will be found in the separate report on the Laboratory Services for 1951. A small study was also made into the immunological relationships between ascaris and hookworm infestations.

196. Individual officers frequently carry out small scale investigations, which are usually limited to therapeutics, such as the assessment of new drugs or other new methods of treatment. Much of this work is done under conditions which do not favour scientific investigation and in the absence of facilities for biochemical and other pathological investigations; these are nowadays almost essential if the results are to be accepted for publication in reputable scientific journals. Mention has already been made of certain investigations of this nature which have been undertaken during the year; these include the assessment of the value of aureomycin in the treatment of trachoma and of relapsing fever, and of certain new synthetic drugs in the treatment of chronic *rhodesiense* sleeping sickness. The use of streptomycin and P.A.S. in the treatment of tuberculosis continued, and the former drug was also used against plague.

197. An interesting study is reported from Bukoba, where Dr. Balslev (Senior) has been carrying out a series of serological investigations among patients attending Ndolage Hospital in an attempt to ascertain the incidence of syphilis. Some 2,000 patients have been examined, but the results obtained have still to be analysed.

198. There are various bodies engaged on research work in Tanganyika, wholly or partly of medical significance. The Filariasis Research Unit and the East African Medical Survey have their headquarters at Mwanza, and come under the High Commission for administrative purposes. For details of the work carried out by these units reference should be made to the annual reports of the Director, which are published by the High Commission. Part of their work has been a detailed medical survey of the population of Ukara Island,

which has been in progress throughout the year, and in the course of which much curative work of benefit to the population of the island has been performed. Towards the end of the year, the Medical Survey Unit undertook to carry out investigations into venereal diseases in Bukoba District; this is a necessary part of a plan to combat these diseases which is being undertaken by Government. Close liaison exists between these units and this department, and acknowledgment is due for the facilities and advice freely given by the Director and his staff to this department whenever required. Among other research organizations whose work is not so directly connected with medical services should be mentioned the East African Tsetse and Trypanosomiasis Research Organization, which has a large research station at Old Shinyanga. It is understood that the subsidiary station at Tinde for trypanosomiasis research was closed during the year. The Colonial Insecticide Research Unit continued to carry out operations in Tanganyika.

XX.—MEDICAL SUPPLIES

199. Drug supplies have been adequate during the year, but the world shortage of sulphur caused a sharp reduction in supplies of sulphonamide drugs. Much larger supplies of penicillin were ordered as a replacement, and these had begun to arrive by the latter part of the year. The supply of sulphonamides improved towards the end of the year, and is continuing by monthly shipments. There was no serious shortage of any other drugs, but the newer anti-biotic drugs are still extremely expensive and can only be provided in limited amounts. There exists among some sections of the population a feeling that every ailment should be immediately treated with a new (and expensive) "wonder-drug"; even if this department could ignore the expense involved, it is far better to keep these powerful specifics for the treatment of serious conditions. It is not generally realized that the individual patient may become sensitive to certain of these drugs, so that if used again they may produce serious allergic symptoms. And likewise the individual infecting organism may become resistant to such drugs through familiarity of contact, and thus in time the specific effect urgently required at a time of serious illness may be found to be blunted and ineffective.

200. The supply of dressings has been the subject of serious delays which have affected local supplies, but towards the end of the year, large consignments were received which has eased the position. The price of dressings still remains very high. Considerable delays are also experienced in the supply of articles of equipment of all sorts; many orders placed in 1950 were still outstanding at the end of the year. In view of the prevailing shortage of steel improvement is unlikely in the near future.

201. The manufacture of a wide range of pharmaceutical preparations was carried on at the Pharmaceutical Laboratory, but difficulty was experienced with the boiler, which is now worn out. During the year the building of the new Medical Store as a part of the Government Stores organization

progressed, and it is expected that the Medical Stores will move during 1952 from the railway warehouse, which has housed them since the beginning of the war. The new buildings should make for much greater ease of working than is possible under the present makeshift conditions which have persisted for eleven years.

202. During 1951 a new edition of the Official Price List was brought out. The Pharmacist paid visits to stations at Morogoro, Tanga Province, Dodoma and the Southern Highlands Province during the year. The following table indicates the volume of work handled by the stores :—

TABLE XXII

MEDICAL STORES, RECEIPTS, ISSUES, STOCK, ETC., 1949 TO 1951

Category	1949			1950			1951		
	£	s.	cts.	£	s.	cts.	£	s.	cts.
Stores received	138,960	17	23	164,729	12	07	239,157	8	77
Stores issued	116,742	2	55	138,308	5	95	160,332	13	51
Value of stock in hand at 31st December	90,972	9	80	117,393	15	92	196,218	11	18
Value of galenicals manufactured ...	8,534	11	8	8,788	6	45	8,696	4	53

			1949		1950		1951	
No. of packages despatched by:								
Rail...	...	...	4,972	...	6,071	...	6,521	
Post	...	...	2,174	...	1,627	...	3,324	
Air and local	...	...	2,442	...	3,088	...	2,716	
Totals	...	...	9,588	...	10,786	...	12,561	
Issue Vouchers made	...	...	7,362	...	7,780	...	8,975	

APPENDIX I

NEWLY-APPOINTED OFFICERS ARRIVED DURING 1951

Name	Appointment	Date of Arrival	Remarks
P. Merson ...	Senior Medical Officer ...	2. 3.51	On transfer from Zanzibar
P. Foster ...	Senior Medical Officer ...	30.11.51	On transfer from Gold Coast
R. Moors ...	Assistant Pharmacist ...	18.12.51	—
Miss M. C. McConchie ...	Assistant Pharmacist ...	28.12.51	—
S. Meredith ...	Medical Specialist ...	26. 3.51	On transfer from Northern Rhodesia
Michie ...	Medical Officer ...	14. 8.51	On transfer from Gibraltar
V. G. Smart ...	Medical Officer ...	14. 1.51	—
S. Oakey ...	Medical Officer ...	4. 2.51	—
F. Hutchison ...	Medical Officer ...	27. 2.51	—
W. Magill ...	Medical Officer ...	27. 2.51	—
J. Schuppler ...	Medical Officer ...	6. 3.51	On contract
Sekanina ...	Medical Officer ...	18. 2.51	On contract
I. O'Hare ...	Medical Officer ...	6. 4.51	—
Miss N. T. O'Brien ...	Medical Officer ...	6. 4.51	—
E. Hurman ...	Medical Officer ...	16. 5.51	—
V. G. L. Allan ...	Medical Officer ...	18. 5.51	—
W. Kucharski ...	Medical Officer ...	7. 6.51	On contract
Johnstone ...	Special Grade M.O. ...	21. 9.51	—
G. McGuire ...	Special Grade M.O. ...	6.10.51	—
Watson-Cook ...	Medical Officer ...	18. 9.51	On contract
J. Erskine ...	Medical Officer ...	30.10.51	—
G. W. A. Lommerse ...	Medical Officer ...	5.12.51	—
Miss M. C. Calder ...	Sister Housekeeper ...	5. 6.51	—
Miss B. C. Gill ...	Physiotherapist ...	30.10.51	—
H. Weston ...	Steward ...	22. 9.51	—
W. Muir ...	Health Inspector ...	4. 2.51	—
J. Page ...	Health Inspector ...	25. 2.51	—
P. Murphy ...	Health Inspector ...	27. 6.51	—
Urquhart ...	Health Inspector ...	10. 7.51	—
C. Phenix ...	Health Inspector ...	14. 8.51	—
F. Shaw ...	Health Inspector ...	7. 8.51	—
A. Westley ...	Health Inspector ...	18. 8.51	—
C. Baker ...	Health Inspector ...	6.10.51	—
K. Inman ...	Health Inspector ...	7.11.51	—
B. Mullin ...	Health Inspector ...	29.11.51	—
V. E. Buxton ...	Health Inspector ...	29.11.51	—
Miss M. B. Muir ...	Dental Surgeon ...	24. 9.51	On agreement
G. Christie ...	Entomologist ...	18. 2.51	—
T. Shute ...	Malaria Field Officer ...	3. 2.51	—
Andrew ...	Male Mental Nurse ...	29.12.51	—
I. Apted ...	Specialist, Sleep-Sickness	7. 6.51	On transfer from Sierra Leone
C. Hemes ...	Laboratory Supt. ...	27. 8.51	—
K. Duffin ...	Radiological Technician	7.11.51	—
Gale ...	Radiographer ...	1. 8.51	—
Mrs. D. E. R. Street ...	Sister Tutor ...	4.11.51	—
Miss R. M. L. Canney ...	Nutrition Officer ...	26. 4.51	—

28 Nursing Sisters and 2 Health Visitors arrived for duty during the year.

APPENDIX II
PROMOTIONS AND APPOINTMENTS

Name	From	To	Effective
A. F. Fowler	Medical Officer	S.M.O.	1. 3.5
Miss B. G. Schofield, M.B.E.	Matron, Grade I	M.I.C.	19. 7.5
J. P. P. Mackey	Pathologist	Sen. Path.	9. 9.5

APPENDIX III
ACTING APPOINTMENTS AND REVERSIONS

Name	Substantive Appointment	Acting Appointment	Effective Date	Date of Reversion
W. T. Thom ...	M.O.	S.M.O.	7. 6.50	—
Col. A. V. Lopes ...	M.O.	S.M.O.	4.11.50	—
G. A. McGregor ...	S.M.O.	R.A.D.M.S.	1. 7.50	12. 1.5
do.	S.M.O.	D.D.M.S.	25. 7.51	—
Miss B. G. Schofield M.B.E.	Matron Grade I	M.I.C.	19. 1.51	18. 7.5
H. T. Laycock ...	M.O.	Surgical Specialist...	10. 5.51	7.11.5
A. G. Farr, M.B.E.	M.O.	Specialist I. Health	28. 7.51	—
H. P. Britten ...	Dental Surgeon ...	Senior Dental Surgeon	5. 9.51	—
L. G. Lennox ...	Male Mental Nurse	Chief Mental Nurse	1.10.51	—

APPENDIX IV
RETIREMENTS, TRANSFERS, ETC.

Name	Appointment	Date of leaving Tanganyika	Remarks
C. McNeilly	Special Grade Medical Officer	30. 4.51	Resignation.
L. Lister	Medical Officer	22. 7.51	Leave pending retirement.
N. Emmerson	Medical Officer	18. 6.51	Leave pending resignation.
H. Bassett	Medical Officer	30.10.51	Resignation.
A. Skan	Senior Pathologist	9. 3.51	Leave pending retirement.
G. Quinn	Asst. Pharmacist	11. 2.51	Leave pending resignation.
Miss M. B. Craig, M.B.E.	M.I.C.	19. 1.51	Leave pending retirement.
Miss H. E. McNamara ...	W.M.O.	10. 6.51	Resignation.
Mackay	Chief Male Mental Nurse	1.10.51	Leave pending retirement.
Mrs. C. Mackay	Female Mental Nurse ...	1.10.51	do.
Miss L. E. Salter	Matron, Grade II	5. 3.51	Transfer to Uganda.
Miss G. B. Killick	Nursing Sister	19. 4.51	Transfer to Nigeria.

Ten Nursing Sisters and Health Visitors left the Service during the year.

APPENDIX V
HONOURS

G. Farr	Special Grade Medical Officer ...	M.B.E.
Aidi Kayanda	Head Orderly	King's Certificate of Honour and Badge.

APPENDIX VI.—NUMBER OF HOSPITAL BEDS AS AT 31ST DECEMBER, 1951

Government General and Special Hospitals, Maternity and Child Health Units and Bedded Dispensaries

MEDICAL REGION	Number of Wards	NUMBER AND CATEGORY OF BEDS							ALLOCATIONS		No. of beds included in columns (a) and (b) which are interchangeable between European and Asian or African Patients	
		General	Obstetrics	Tuber- culosis	Infectious	Mental	Total	European (a)	Asian	African (b)		
CENTRAL :												
Central Province ...	61	217	13	—	23	249	502	9	26	467	4	6
Southern Highlands Province	67	310	22	3	14	—	349	25	7	317	5	—*
EASTERN :												
Eastern Province ...	46	431	35	—	14	—	480	9	6	465	9	53
Southern Province ...	29	221	6	6	12	—	245	5	6	234	—	18
NORTHERN :												
Northern Province ...	76	413	27	254	14	—	708	25	182	501	—	5
Tanga Province ...	72	593	28	4	26	—	651	18	10	623	—	10
WESTERN :												
Lake Province ...	76	543	43	25	21	—	632	11	18	603	8	2
Western Province ...	47	354	65	—	—	—	419	11	8	400	—	*
DAR ES SALAAM ...	84	304	50	47	92	—	493	45	55	393	13	13
Totals ...	558	3,386	289	339	216	249	4,479	158	318	4,003	39	107

*Asians accepted if willing to stay in African Wards.

APPENDIX VII
SMALLPOX 1946—1951

PROVINCIAL INCIDENCE

	1946	1947	1948	1949	1950	1951
<i>Central :</i>						
Cases... ..	1,725 ...	489 ...	364 ...	22 ...	5 ...	—
Deaths	285 ...	73 ...	58 ...	— ...	— ...	—
Mortality per cent	16.5 ...	14.9 ...	15.9 ...	— ...	— ...	—
<i>Eastern :</i>						
Cases... ..	440 ...	42 ...	24 ...	— ...	90 ...	152
Deaths	39 ...	8 ...	1 ...	— ...	11 ...	11
Mortality per cent	8.8 ...	19.0 ...	4.2 ...	— ...	12.2 ...	7.2
<i>Lake :</i>						
Cases... ..	1,987 ...	921 ...	162 ...	82 ...	56 ...	73
Deaths	497 ...	220 ...	15 ...	9 ...	16 ...	13
Mortality per cent	25.1 ...	23.8 ...	9.3 ...	10.97 ...	28.6 ...	17.8
<i>Western :</i>						
Cases... ..	4,055 ...	386 ...	72 ...	49 ...	— ...	—
Deaths	477 ...	30 ...	15 ...	2 ...	— ...	—
Mortality per cent	11.7 ...	7.8 ...	20.3 ...	4.08 ...	— ...	—
<i>Southern :</i>						
Cases... ..	2,546 ...	237 ...	399 ...	612 ...	6,158 ...	618
Deaths	160 ...	30 ...	84 ...	123 ...	1,309 ...	115
Mortality percent	6.28 ...	12.7 ...	21.1 ...	20.1 ...	21.35 ...	18.6
<i>Southern Highlands :</i>						
Cases... ..	1,692 ...	832 ...	111 ...	155 ...	47 ...	6
Deaths	426 ...	243 ...	28 ...	8 ...	7 ...	—
Mortality per cent	25.17 ...	29.2 ...	25.2 ...	5.16 ...	14.9 ...	—
<i>Anga :</i>						
Cases... ..	97 ...	51 ...	3 ...	3 ...	19 ...	2
Deaths	18 ...	10 ...	— ...	1 ...	1 ...	—
Mortality per cent	18.5 ...	19.6 ...	— ...	33.3 ...	5.30 ...	—
<i>Northern :</i>						
Cases... ..	129 ...	22 ...	69 ...	122 ...	15 ...	4
Deaths	33 ...	2 ...	8 ...	24 ...	1 ...	—
Mortality per cent	25.5 ...	10.0 ...	11.6 ...	19.67 ...	6.66 ...	—

APPENDIX VIII

DISEASES

IN-PATIENTS AND OUT-PATIENTS, GOVERNMENT HOSPITALS

	Cases In-Patients			Deaths			Out-Patients			Total in and out-patients	Group Totals		Percentage of Grand Total Cases	Percentage of Total deaths
	Males	Females	Total	Males	Females	Total	Males	Females	Total		Cases	Deaths		
GROUP I														
Infective and Parasitic Diseases														
Typhoid and Paratyphoid fevers	370	90	460	58	9	67	8	5	13	473				
Plague	10	4	14	1	—	1	—	—	—	14				
Undulant fever	19	3	22	—	—	—	1	—	1	23				
Cerebro-spinal meningitis	151	91	242	67	44	111	37	27	64	306				
Malignant Pustule and Anthrax	151	75	226	10	8	18	100	42	142	368				
Tuberculosis of the respiratory system	773	206	979	188	54	242	385	129	514	1,493				
Other forms of T.B. :														
(a) Bones and joints	87	32	119	7	1	8	20	23	43	162				
(b) Glands and intestines	72	24	96	5	2	7	174	85	259	355				
•(Kibongoto Sanatorium report not received)														
Leprosy	129	17	146	3	3	6	302	91	393	539				
Dysentery :														
(a) Amoebic	344	79	423	9	2	11	886	375	1,261	1,684				
(b) Bacillary	244	96	340	13	9	22	1,502	732	2,234	2,574				
(c) Undefined	297	108	405	6	7	13	4,709	2,051	6,760	7,165				
Malaria	9,223	4,014	13,237	230	112	342	92,123	55,735	147,858	161,095				
Blackwater fever	14	6	20	5	—	5	3	3	6	26				
Trypanosomiasis	295	89	384	30	11	41	21	101	122	506				
Venereal Diseases :														
(a) Syphilis	1,308	588	1,896	14	13	27	17,858	16,280	34,138	36,034				
(b) Gonorrhoea	1,601	357	1,958	5	1	6	15,086	3,893	18,979	20,937				
(c) Other Venereal Diseases	193	37	230	1	1	2	2,247	808	3,055	3,285				
Relapsing Fever	1,067	555	1,622	14	10	24	1,265	737	2,002	3,624				
Yaws	408	196	604	15	7	22	23,702	22,996	46,698	47,302				
Smallpox	14	11	25	—	—	—	—	—	—	26				
Ankylostomiasis	1,885	758	2,643	56	30	86	15,208	10,691	25,899	28,542				
Schistosomiasis	714	193	907	14	2	16	8,845	3,837	12,682	13,589				
Other helminthic diseases	677	267	944	8	4	12	14,547	10,786	25,333	26,277				
Other infective or parasitic diseases	1,634	521	2,155	57	35	92	6,143	3,361	9,504	11,659	368,058	1,181	32.95	36.22
GROUP II														
Cancer and other tumours, Cancer of the liver and biliary passages	35	26	61	18	11	29	20	10	30	91				
Other malignant tumours	122	119	241	24	23	47	44	14	58	299				
Non-malignant tumours	149	319	468	2	7	9	233	206	439	907				
Unspecified tumours	98	107	205	7	8	15	172	160	332	537	1,834	100	0.16	3.07

•Kibongoto Centre, including the large tuberculosis sanatorium, was not received in time for inclusion.

DISEASES

IN-PATIENTS AND OUT-PATIENTS, GOVERNMENT HOSPITALS

	Cases In-Patients			Deaths			Out-Patients			Total in and out-patients	Group Total		Percentage of Grand Total cases	Percentage of Grand Total deaths
	Males	Females	Total	Males	Females	Total	Males	Females	Total		Cases	Deaths		
GROUP III														
Nutritional, Glandular and general diseases:														
Rheumatic conditions	458	218	676	2	3	5	17,303	12,673	29,976	30,652				
Diabetes	50	16	66	4	1	5	35	22	57	123				
Diseases of the endocrine glands	36	27	63	—	5	5	152	149	301	364				
Scurvy	7	5	12	—	—	—	8	10	18	30				
Beriberi	19	4	23	4	1	5	13	14	27	50				
Pellagra	86	5	91	—	—	—	40	12	52	143				
Other deficiency diseases	207	106	313	11	14	25	1,449	687	21,36	2,449	33,811	45	3.02	1.37
GROUP IV														
Diseases of the blood and blood-forming organs:														
Anaemias:														
(a) Hyperchromic	232	117	349	43	19	62	1,055	759	1,814	2,163				
(b) Hypochromic	161	98	259	24	12	36	1,233	1,066	2,299	2,558				
Other diseases of the blood and blood-forming organs	254	134	388	36	12	48	2,205	1,147	3,352	3,740	8,461	146	0.76	4.48
GROUP V														
Acute and Chronic Poisoning	69	48	117	2	4	6	22	4	26	143	143	6	0.01	0.18
GROUP VI														
Diseases of the nervous system and sense organs:														
Mental Diseases	74	48	122	4	2	6	76	64	140	262				
Trachoma	72	63	135	—	—	—	2,353	1,644	3,997	4,132				
Other diseases of vision	1,141	487	1,628	3	—	3	31,142	23,756	54,898	56,526				
Diseases of the ear and mastoid	196	96	292	3	2	5	11,942	7,247	19,189	19,481				
Other diseases of the nervous system	624	206	830	42	23	65	13,269	6,138	19,407	20,237	100,638	79	9.01	2.42
GROUP VII														
Diseases of the Circulatory System:														
Heart disease	187	91	278	63	32	95	572	185	457	735				
Other diseases of the circulatory system	264	100	364	18	7	25	1,542	737	2,279	2,643	3,378	120	0.30	3.65

APPENDIX VIII (contd.)

DISEASES

IN-PATIENTS AND OUT-PATIENTS, GOVERNMENT HOSPITALS

	Cases In-Patients			Deaths		Out-Patients			Total in and out-patients	Group Total		Percentage of Grand Total cases	Percentage of Total deaths
	Males	Females	Total	Males	Females	Total	Males	Females		Total	Cases		
GROUP VIII													
Diseases of the Respiratory System :													
Bronchitis ...	1,404	690	2,094	19	6	25	62,527	39,922	102,449	104,543			
Pneumonia ...	3,878	1,939	5,817	282	188	470	2,066	1,397	3,463	9,280			
Other diseases of the respiratory system ...	1,124	478	1,602	26	5	31	32,229	14,850	47,079	48,681	162,504	526	16.13
GROUP IX													
Diseases of the Digestive System, Diarrhoea and enteritis :													
(a) Under 2 years ...	407	230	637	29	12	41	5,233	4,569	9,802	10,439			
(b) 2 years and over ...	986	388	1,374	58	28	86	12,640	6,666	19,306	20,680			
Hernia, intestinal obstruction ...	1,185	53	1,238	73	4	77	787	26	813	2,051			
Cirrhosis of the liver ...	186	77	263	37	12	49	134	75	209	472			
Other diseases of the digestive system ...	1,683	904	2,587	68	31	99	71,681	44,594	116,275	118,862	152,504	352	10.80
GROUP X													
Diseases of the Urinary and Genital Systems (Not venereal or connected with pregnancy or the puerperium) :													
Diseases of the kidney, ureter and bladder ...	431	209	640	49	18	67	1,931	1,261	3,192	3,832			
Diseases of the male genital organs ...	2,076	—	2,076	31	—	31	4,748	—	4,748	6,824			
Diseases of the female genital organs ...	—	1,233	1,233	—	22	22	—	5,152	5,152	6,385	17,041	113	3.47
GROUP XI													
Diseases of Pregnancy :													
Deliveries ...	—	4,318	4,318	—	54	54	—	107	107	4,425			
Abortions and miscarriages ...	—	759	759	—	12	12	—	229	229	988			
Toxaemias of pregnancy ...	—	303	303	—	7	7	—	1,973	1,973	2,276			
Other conditions of the puerperal state ...	—	552	552	—	31	31	—	2,320	2,320	2,872	10,561	111	3.40
GROUP XII													
Diseases of the Skin and Cellular Tissue :													
Ulcers ...	3,290	1,000	4,290	28	19	47	63,304	20,817	84,121	88,411			
Other skin conditions ...	2,642	852	3,494	18	14	32	33,505	15,956	49,461	52,955	141,366	79	12.65
													2.42

APPENDIX VIII (contd.)
IN-PATIENTS AND OUT-PATIENTS, GOVERNMENT HOSPITALS

	Cases In-patients			Deaths			Out-patients			Total in and out-patients	Group Total		Percentage of Grand Total cases	Percentage of Total deaths
	Males	Females	Total	Males	Females	Total	Males	Females	Total		Cases	Deaths		
GROUP XIII														
Diseases of the Bones and Organs of locomotion:														
Diseases of Bones, etc. (excluding T.B.) ...	1,383	445	1,828	17	10	27	13,058	5,789	18,847	20,675	20,675	27	1.85	0.83
GROUPS XIV AND XV														
Congenital Malformations and Diseases Peculiar to the first year of life:														
Malformations, Premature birth and injury at birth ...	19	15	34	10	12	22	4	7	11	45				
Congenital debility ...	41	49	90	10	7	17	200	147	347	437				
Diseases peculiar to the first year of life ...	35	11	46	7	2	9	38	68	106	152	634	48	0.06	1.47
GROUP XVI														
Senility and Old Age ...	75	53	128	29	13	42	161	83	244	372	372	42	0.03	1.29
GROUP XVII														
Violence and External Causes:														
(a) Suicide ...	7	3	10	1	1	2	—	2	2	12				
(b) Homicide ...	390	120	510	14	2	16	1,137	681	1,818	2,328				
(c) Accidents ...	6,256	1,303	7,559	166	48	214	55,398	12,549	67,947	75,506	77,846	232	6.97	7.11
GROUP XVIII														
Ill-defined causes ...	1,030	743	1,773	43	11	54	10,678	4,963	15,641	17,414	17,414	54	1.56	1.66
Total ...	54,749	27,534	82,333	2,141	1,120	3,261	661,211	373,696	1,034,907	1,117,240	1,117,240	3,261	100.00	100.00

APPENDIX IX IN-PATIENTS IN GOVERNMENT HOSPITALS

Medical Region	No. admitted during the year (a)						No. discharged during the year						Deaths						Daily average in Hospital					
	European			Non-European			European			Non-European			European			Non-European			European			Non-European		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	Total
CENTRAL																								
Central Province	163	174	337	4,545	2,282	6,827	154	174	328	4,449	2,208	6,657	137	82	219	3.7	3.8	7.5	154.4	...	68.5	222.9	...	...
S. H. Province	...	...	...	4,929	4,229	9,158	...	...	...	4,749	4,081	8,830	205	127	336	...	...	...	158.3	...	113.2	279.0	...	...
EASTERN																								
Eastern Province	45	34	79	6,664	2,044	8,708	43	32	75	6,496	1,961	8,457	204	77	282	0.8	0.9	1.7	228.2	...	52.1	282.0	...	...
Southern Province	39	18	57	2,974	1,128	4,102	39	17	56	2,932	1,086	4,018	63	35	99	0.6	0.3	0.9	96.1	...	30.4	127.4	...	...
NORTHERN																								
Northern Province	235	256	491	7,312	3,297	11,100	232	255	487	7,002	3,092	10,581	317	234	554	4.4	5.1	9.5	219.1	...	93.1	321.7	...	...
Tanga Province	205	150	355	6,952	2,425	9,377	195	150	345	6,588	2,274	9,207	373	130	510	2.0	1.4	3.4	224.9	...	76.8	305.1	...	...
WESTERN																								
Lake Province	88	97	185	9,138	5,926	15,249	85	94	179	8,816	5,762	14,757	329	202	534	2.0	2.2	4.2	291.6	...	142.7	438.5	...	...
Western Province	80	76	156	5,331	4,352	9,839	77	77	154	5,103	4,219	9,476	293	165	459	1.8	1.5	3.3	222.5	...	129.2	355.0	...	...
DAR ES SALAAM	489	452	941	4,963	1,856	7,765	479	441	920	4,916	1,854	7,690	205	60	268	12.1	10.3	22.4	28.5	...	71.1	322.0	...	...
TOTALS	1,344	1,257	2,601	52,813	27,539	82,953	1,304	1,240	2,544	51,051	26,537	80,132	15,...	8,...	3,261	27.4	25.5	52.9	1,823.6	...	777.1	2,653.6	...	...

(a) These are the total number of patients admitted to hospital during the year, and do not include patients remaining in hospital at the beginning of the year.

APPENDIX X

OUT-PATIENTS—GOVERNMENT HOSPITALS AND DISPENSARIES

MEDICAL REGION	Total Attendances during the year				Total new cases during the year			
	Males		Females		Males		Females	
	European	Non-European	European	Non-European	European	Non-European	European	Non-European
CENTRAL:								
Central Province ...	992	118,726	818	82,024	527	46,880	436	33,501
Southern Highlands Province ...	1,269	135,075	1,075	102,639	954	73,412	752	52,076
EASTERN:								
Eastern Province ...	1,118	171,034	366	94,804	512	76,351	188	37,876
Southern Province...	1,705	102,556	1,043	50,220	420	56,667	239	24,125
NORTHERN:								
Northern Province...	2,992	160,033	2,221	79,895	1,557	63,960	1,055	30,257
Tanga Province ...	889	159,073	969	114,570	652	76,454	657	40,101
WESTERN:								
Lake Province ...	1,986	185,768	1,541	120,149	1,290	115,725	954	69,195
Western Province ...	968	184,442	785	146,959	617	85,661	385	64,031
DAR ES SALAAM ...	2,262	164,015	1,820	29,817	1,574	57,780	1,238	16,519
Totals ...	14,181	1,380,722	10,638	821,077	8,103	652,890	5,904	367,681
								1,034,578

MORBIDITY AND MORTALITY EXPERIENCE IN GOVERNMENT HOSPITALS

The collection of accurate data relating to disease at treatment centres presents many difficulties. At many of the smaller hospitals the diagnostic facilities are primitive and it is only in Dar es Salaam that they approach United Kingdom standards. Furthermore, many of the staff responsible for the diagnosis and treatment of out-patients are not medically qualified. The information presented in this Appendix has been compiled from returns submitted from Government hospitals and is based only on the diseases dealt with at such institutions. It is not necessarily representative of the incidence of disease among the general population. It has not been possible to include statistics of morbidity in respect of the Missions since the great majority are not yet submitted in a form capable of utilization in these reports.

2. Vital statistics reflect the health of the people; they indicate conditions influencing health and are an indispensable means of measuring progress in the prevention of disease over the years. In the absence of any form of registration of births and deaths in Tanganyika there is no information as to the causes and distribution of mortality among the general population. Such information as is available relates only to persons dying in the hospitals. Being a selected group, these figures cannot be applied to the general population.

3. Diagram 1 sets out the relative incidence of various disease groups diagnosed in Government hospitals during 1951. The "Infective and Parasitic" disease (Group I of Appendix VIII) contribute nearly one-third of the total illnesses for which patients attended at Government hospitals; many of the diseases included in this group are preventable. Diagram 2 indicates the ten commonest diseases recorded during 1951; these ten diseases account for more than sixty per cent of the total attendances (in and out-patients) at Government hospitals. It will be observed that malaria is the commonest disease. Respiratory diseases other than pulmonary tuberculosis are also commonly diagnosed and if the three diseases comprising the respiratory group are added together, the total is slightly greater than the recorded incidence of malaria. Bronchitis is the commonest respiratory disease seen in hospital. Ulcers and accidents are both common causes of illness necessitating in-patient treatment. Affections of the eye and venereal diseases are particularly common as "out-patient" diseases.

4. As an indication of mortality in the general population hospital records, as indicated above, are no more reliable than are those for morbidity. Hospital deaths only relate to hospital cases, and fatality rates in respect of diseases

DIAGRAM 1

ALL OTHER DISEASES GROUPS II, IV, V, VII, X, XI
XIII, XIV & XV, XVII and XVIII

GROUP III NUTRITIONAL, GLANDULAR
& GENERAL DISEASES

INJURIES

GROUP XVII

NERVOUS &
SENSORY
GROUP VI

SKIN DISEASES
GROUP XII

DIGESTIVE DISEASES
GROUP IX

RESPIRATORY DISEASES
GROUP VIII

INFECTIVE & PARASITIC DISEASES
GROUP I

10% 20% 30% 40%

Percentage of total cases treated, 1951, as
in and out patients, Govt. medical institutions.

GROUPED CAUSES OF MORBIDITY 1951

SHOWN AS PROPORTIONS OF THE TOTAL
CASES TREATED AT GOVT. MEDICAL
INSTITUTIONS

DIAGRAM 2

RHEUMATIC CONDITIONS

YAWS

RESPIRATORY DISEASES OTHER
THAN BRONCHITIS, PNEUMONIA & T.B.

SKIN DISEASES

VENEREAL DISEASES

EYE DISEASES

ACCIDENTS

ULCERS

BRONCHITIS

MALARIA

ALL OTHER DISEASES

10% 20% 30% 40%

PERCENTAGE OF TOTAL CASES TREATED, IN AND OUTPATIENTS.

PRINCIPAL CAUSES OF MORBIDITY 1951

ILLNESS DUE TO SPECIFIC CAUSES
SHOWN AS PROPORTIONS OF ALL
CASES TREATED AT GOVT. MEDICAL
INSTITUTIONS.

DIAGRAM 3

GROUPED CAUSES OF MORBIDITY & MORTALITY AMONGST
IN-PATIENTS, SHOWN AS PROPORTIONS OF THE TOTAL INPATIENTS
AND THE TOTAL DEATHS AT GOVT. MEDICAL INSTITUTIONS, 1951

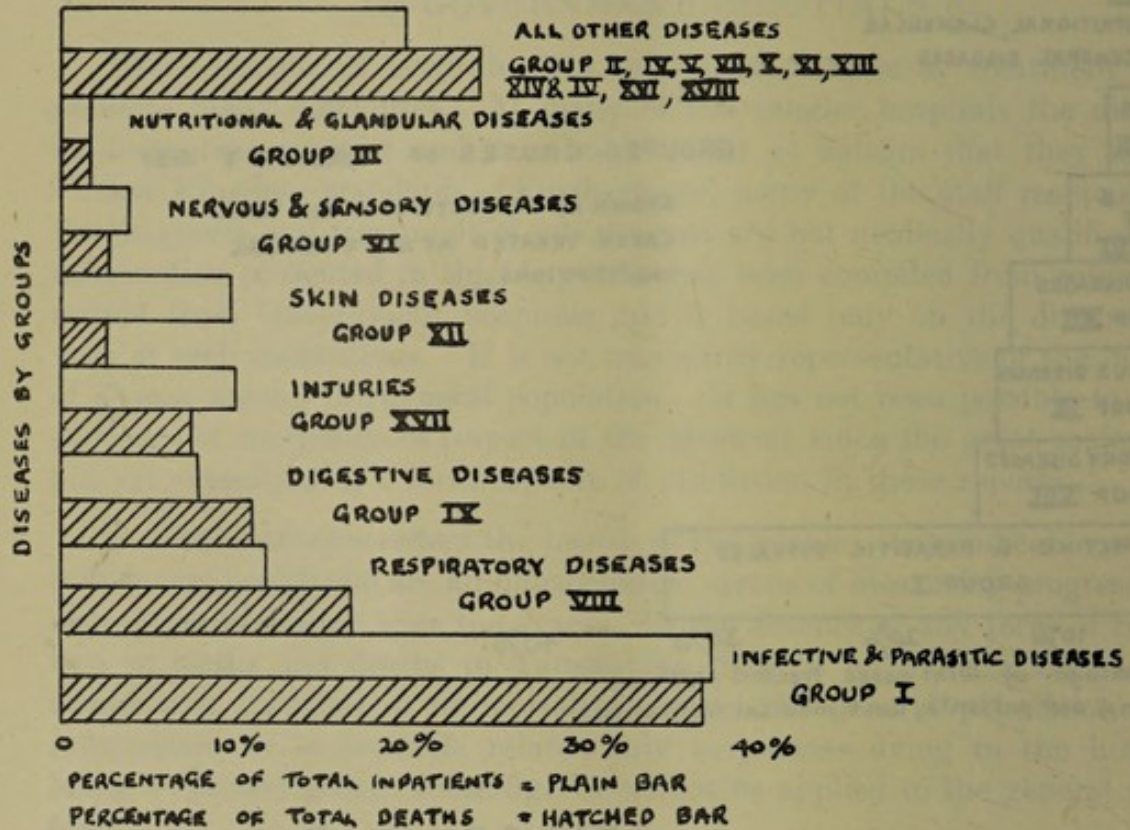
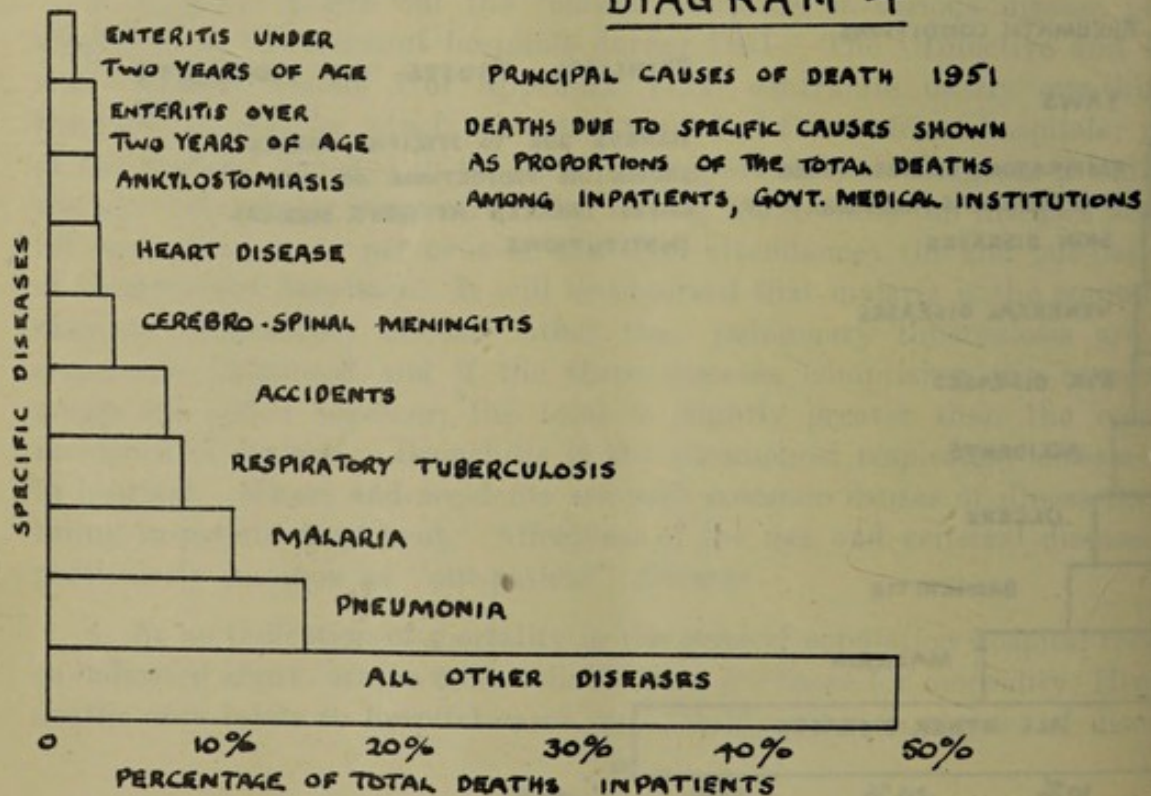


DIAGRAM 4



e.g., malaria, the dysenteries, etc., carrying with them a low mortality in the general population, are liable to be high among hospital patients because a relatively high proportion of severe cases find their way to hospital; mortality among out-patients is not recorded. On the other hand, it is a common occurrence for patients suffering from fatal diseases to be discharged from hospital to end their days in their own homes. Thus, for cancer of the liver, a uniformly fatal disease, the recorded case mortality is slightly over fifty per cent (twenty-nine deaths among sixty-one cases). Had it been possible to follow up all these cases after their discharge from hospital, a case mortality rate of one hundred per cent would have been recorded.

5. Diagram 3 sets out the proportion of the various groups of diseases contributing to the total recorded in-patient morbidity. The hatched bars represent the proportion of the total in-patient mortality recorded attributed to that group of diseases. Comparative mortality is shown in Diagram 4. Pneumonia caused the largest number of deaths, namely 470 in a total of 7,718 in-patients. Accidents caused 214 deaths among 7,559 admissions. There were 347 deaths among 13,257 admissions for malaria and blackwater. Diarrhoea and enteritis caused forty-one deaths among 367 patients under two years of age and eighty-six deaths among 1,374 patients over two years of age. Of 242 cases of CSM treated in hospital, 111 died—a fatality rate of 25 per cent.

APPENDIX XII
NATIVE AUTHORITY MEDICAL SERVICES

MEDICAL REGION	Number of Dispen- saries	STAFF			Beds if any	NEW CASES DURING THE YEAR			Total Atten- dances during the year Total
		R.M.A. Grade I	R.M.A. Grade II	R.M.A. Grade III		Males	Females	Total	
CENTRAL:									
Central Province ...	39	—	1	38	35	*—	*—	206,793	374,183
Southern Highlands Province ...	51	—	45	10	—	151,268	145,888	297,156	695,353
EASTERN:									
Eastern Province ...	67	1	5	64	—	120,389	97,059	217,448	365,400
Southern Province ...	28	—	—	30	—	43,509	26,495	70,004	172,935
NORTHERN:									
Northern Province ...	47	—	9	45	11	127,772	85,672	213,444	380,733
Tanga Province ...	35	1	6	29	—	49,475	28,230	77,705	211,387
WESTERN:									
Lake Province ...	103	—	72	42	—	335,002	337,666	672,668	1,464,855
Western Province ...	54	—	23	27	10	122,026	115,008	237,034	574,650
Totals ...	424	2	161	285	†56	949,441	836,018	1,992,252	4,239,496

R.M.A. Grade I = Medical Assistant with Government Certificate (3 years training at approved Training Centre).

R.M.A. Grade II = Medical Aid trained at Mwanza Training Centre, or at former Bukoba, Tabora, Mwanza or Tukuyu Training Centres.

R.M.A. Grade III = All others.

*In many cases separate figures for Males and Females are not available, only totals are given.

†Variation from 1950 figure due to reclassification of certain hospice accommodation in 1951.

APPENDIX XIII—MISSION MEDICAL SERVICES

	NUMBER OF BEDS				STAFF										IN- PATIENTS	OUT- PATIENTS	Total Attendants 1951		
	European	Asian	African	Total	Doctors	Nurses SRN/SCM	Nurses SRN only	Midwives SCM only	Unregistered Nurses or Midwives	Medical, Lab., or Pharm. Assts. (Govt. Cert.)	Rural Medical Aids Grade II	African Nurses (Govt. Cert.)	African Nurses/Midwives (Govt. Cert.)	African Midwives (Govt. Cert.)	African Health Nurses (Govt. Cert.)	Other African Medical and Nursing staff			
CENTRAL:																			
Central Province ...	2	-	388	390	2	6	16	1	-	-	3	12	11	3	-	73	11,861	85,554	344,227
Southern Highlands ...	1	2	358	361	2	11	8	-	-	-	-	1	7	1	-	30	5,341	83,604	242,576
EASTERN:																			
Eastern Province ...	4	2	339	345	3	5	5	-	14	6	-	-	-	-	-	40	8,212	172,476	152,407
Southern Province ...	36	39	1,207	1,282	8	15	16	1	6	25	-	9	-	1	-	118	22,204	164,603	263,566
NORTHERN:																			
Northern Province ...	-	-	308	308	1	4	-	-	9	-	-	-	-	-	-	49	6,987	107,831	48,484
Tanga Province ...	5	15	241	261	5	9	5	-	-	11	4	2	-	1	-	62	5,609	102,365	120,260
WESTERN:																			
Lake Province ...	8	47	612	667	8	7	16	1	5	1	15	1	1	-	-	114	10,020	145,250	316,218
Western Province ...	-	23	340	363	3	8	7	1	2	-	-	-	-	1	-	62	3,387	79,627	434,314
Totals ...	56	128	3,793	3,977	32	65	73	4	36	43	22	25	19	7	-	548	73,621	941,310	1,922,052

In many cases the above figures are incomplete

APPENDIX XIV.—MATERNITY AND CHILD HEALTH SERVICES

A. GOVERNMENT MATERNITY AND CHILD HEALTH CLINICS

(Not including confinements in Government General Hospitals)

	ANTE NATAL CLINICS		CHILD HEALTH CLINICS		Total Confinements Attended	Normal Deliveries	Miscarriages & abortions	Live Births	Still Births	Deaths Mothers	Deaths Among Infants Born Alive
	First attendances mothers	Total attendances mothers	First attendances children	Total attendances children							
<i>Central :</i>											
Central Province ...	377	896	—	—	331	267	64	259	8	3	4
Southern Highlands Province ...	1,105	3,316	287	1,100	629	508	121	507	49	9	14
<i>Eastern :</i>											
Eastern Province ...	553	2,058	—	—	278	260	18	261	17	4	1
Southern Province ...	164	820	543	5,787	59	53	6	49	7	2	1
<i>Northern :</i>											
Northern Province ...	3,396	6,801	590	1,206	1,841	1,610	231	1,727	90	18	43
Tanga Province ...	951	6,616	799	15,492	576	515	61	506	23	3	23
<i>Western :</i>											
Lake Province ...	2,237	7,404	5,349	17,958	1,542	1,366	176	1,321	76	14	10
Western Province ...	2,804	9,101	2,300	12,737	1,506	1,280	226	1,343	74	15	31
DAR ES SALAAM ...	1,260	5,600	1,426	21,265	1,271	875	396	896	54	10	36
Totals ...	12,847	42,612	11,294	75,545	8,033	6,734	1,299	6,869	398	78	163

APPENDIX XIV—MATERNITY AND CHILD HEALTH SERVICES—*contd.*

B.—MISSION MATERNITY SERVICES—(See note A)

(Not including confinements in Government General Hospitals)

	ANTE NATAL CLINICS		CHILD HEALTH CLINICS		Total Confinements Attended	Normal Deliveries	Miscarriages & Abortions	Live Births	Still Births	Deaths Mothers	Deaths Among Infants Born Alive
	First attendances mothers	Total attendances mothers	First attendances children	Total attendances children							
<i>Central :</i>											
Central Province ...	2,807	11,716	5,969	10,573	2,774	2,651	123	2,601	111	13	65
Southern Highlands Province ...	928	895(a)	238	1,736	426(b)	172(b)	13(b)	176(b)	2(b)	1(b)	3
<i>Eastern :</i>											
Eastern Province ...	817	1,838	1,620	485A	641	591	50	599	37	4	5
Southern Province ...	1,523	11,874	1,653	5,595	1,038	921	117	976	62	12	30
<i>Northern :</i>											
Northern Province ...	695	2,844	—	—	201	178	23	161	15	1	9
Tanga Province ...	2,322	8,644	852	4,690	865	798	67	764	44	5	24
<i>Western :</i>											
Lake Province ...	4,923	12,474	472	2,542	2,679	2,476	203	2,306	171	24	52
Western Province ...	3,261	15,399	3,308	17,338	2,095(c)	1,624(c)	105(c)	1,523(c)	94(c)	8(c)	123
Totals ...	17,276	65,684	14,112	42,959	10,719(d)	9,411(d)	701(d)	9,106(d)	536(d)	68(d)	311

(a) In many cases figures for mission and native authority services are incomplete.

(b) For 241 confinements incomplete figures submitted.

(c) For 366 confinements incomplete figures submitted.

(d) For 607 confinements incomplete figures submitted.

APPENDIX XIV—MATERNITY AND CHILD HEALTH SERVICES—*contd.*

C.—NATIVE AUTHORITY MATERNITY SERVICES (See Note A)

(Not including confinements in Government General Hospitals)

	ANTE NATAL CLINICS			CHILD HEALTH CLINICS			Total Confinements Attended	Normal Deliveries	Miscarriages & abortions	Live Births	Still Births	Deaths Mothers	Deaths Among Infants Born Alive
	First attendances mothers	Total attendances mothers		First attendances children	Total attendances children								
<i>Central :</i>													
Central Province	2,413	2,776		1,513	2,105		2,409	2,392	17	2,389	20	4	14
Southern Highlands Province	1,536	—A		—	—		—	—	—	—	—	—	—
<i>Eastern :</i>													
Eastern Province	—	—		—	—		—	—	—	—	—	—	—
Southern Province	—	—		—	—		—	—	—	—	—	—	—
<i>Northern :</i>													
Northern Province	No report received			—	—		—	—	—	—	—	—	—
Tanga Province	222	1,290		101	101A		518	514	4	500	3	4	13
<i>Western :</i>													
Lake Province	1,138	1,336		204	209A		582	539	43	517	22	1	24
Western Province	1,383	2,283		1,205	2,379		891	865	26	837	28	—	2(A)
Totals	6,692	7,685		3,023	4,794		4,400	4,310	90	4,243	73	9	53

(A) In many cases figures for mission and native authority services are incomplete.

APPENDIX XV

LEPROSARIA—GOVERNMENT, MISSION AND NATIVE AUTHORITY (Including all Camps and Settlements)

MEDICAL REGION	RESIDENT STAFF			Others	Leprosy Patients admitted during year	Discharged	Absconded	Births	Deaths from the disease		Deaths from other causes	Leprosy patients Resident at 31st Dec. 1951			Clinical Classification active cases			Cases on Sulphone Therapy			In-patient burnt out cases		Non-Leprous persons resident at 31st Dec. 1951
	Doctors	Nurses SRN.	Medical Assistants (Government Cert.)						Men	Women		Children 14 and under	Lepromatous	Tuberculous	Mixed	Men	Women	Children 14 and under	Without deformity	With deformity	Adults	Children 14 and under	
CENTRAL :																							
Central Province ...	1	2	—	13	170	18	49	19	19	16	513	477	161	562	538	51	149	79	28	7	9	5	33
S. H. Province ...	1	2	—	10	246	62	39	15	—	8	328	235	84	167	42	438	326	232	81	—	—	109	299
EASTERN :																							
Eastern Province...	—	—	—	34	52	56	39	11	13	14	242	150	48	138	220	82	176	106	38	9	23	42	47
Southern Province	—	—	—	21	623	102	315	63	15	37	1,061	728	189	260	462	56	514	300	102	66	33	191	997
NORTHERN :																							
Northern Province	—	—	1	—	7	1	2	2	1	—	16	4	3	13	2	5	11	1	—	—	3	—	3
Tanga Province ...	—	—	—	3	39	1	12	—	5	5	113	19	3	1	37	14	—	—	—	1	7	37	59
WESTERN :																							
Lake Province ...	3	1	—	10	305	13	79	12	10	6	245	167	98	151	420	10	283	192	106	—	2	21	27
Western Province	1	2	—	1	16	1	14	1	1	4	46	34	—	29	6	33	22	11	1	8	34	—	—
DAR ES SALAAM	1	1	—	2	29	26	5	—	—	3	73	42	2	13	13	7	26	5	2	4	—	—	—
Totals ...	6	8	1	94	1,487	280	554	123	64	93	2,637	1,856	588	1,334	1,740	696	1,507	926	358	95	111	405	765

APPENDIX XVI.—VITAL STATISTICS : POPULATION

MEDICAL REGION	EUROPEAN			ASIAN			AFRICAN			Grand Total
	Males	Females	Total	Males	Females	Total	Males	Females	Total	
CENTRAL :										
Central Province	645	549	1,194	3,714	2,990	6,704	417,619	416,493	834,112	842,010
Southern Highlands Province	1,156	886	2,042	1,717	1,349	3,066	396,887	467,158	864,045	869,153
EASTERN :										
Eastern Province	1,525	1,090	2,615	10,954	8,901	19,855	445,793	448,902	894,695	917,165
Southern Province	917	549	1,466	2,210	1,738	3,948	457,716	502,586	960,302	965,716
NORTHERN :										
Northern Province	1,160	1,040	2,200	2,950	2,370	5,320	289,000	286,000	575,000	582,520
Tanga Province	1,026	824	1,850	5,545	5,392	10,937	300,687	262,273	562,960	575,747
WESTERN :										
Lake Province	660	431	1,091	4,847	3,951	8,798	906,667	1,008,465	1,915,132	1,925,021
Western Province	726	534	1,260	2,596	2,125	4,721	468,918	543,512	1,012,430	1,018,411
Totals ...	7,815	5,903	13,718	34,533	28,816	63,349	3,683,287	3,935,389	7,618,676	7,695,743



1