Annual medical report / Colony and Protectorate of Kenya.

COLONY AND PROTECTORATE OF KENYA

MINISTRY OF HEALTH
ANNUAL REPORT
1959

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GENERAL

Introduction

The Ministry of Health and Welfare was established in July, 1959, as a self-contained portfolio of the Government under the Minister for Health and Welfare, the Hon. W. B. Havelock, M.L.C. This branch of the Government was formerly joined with the combined Ministry of Local Government, Health and Town Planning. Although the Minister for Health and Welfare retains Local Government and Town Planning within his portfolio, he has a separate and distinct professional staff to advise him on matters which come within the ambit of this Ministry. These officers are headed by a Permanent Secretary and Chief Medical Officer. There is a Deputy Chief Medical Officer, and an Assistant Director of Health, supported by an Under-Secretary, who is in control of finance and establishment matters.

The Medical Department has become incorporated in the Ministry of Health with an Assistant Director in charge of staff and another Assistant Director who is in charge of hospitals and other institutions. The basic organization of the Medical Department has not been changed by these developments. The Ministry of Health and Welfare has assumed many additional responsibilities for the maintenance and support of all health activities in the territory, be they conducted by private individuals, or organizations, or statutory local health authorities. In this latter connexion, a close union is maintained with the Ministry of Local Government, with regard especially to the finance which flows in the form of public health grants-in-aid to local health authorities.

It is natural and proper that social welfare should come under the wing of the Ministry of Health and an Assistant Secretary at the headquarters office handles matters concerning the voluntary welfare societies. In general, these societies command voluntary and private financial support but they also receive assistance from the Government by its association with them in their work, either by direct, or assigned grants through and augmented by assistance from local authorities. There is as yet, however, no fully agreed rule on the conditions through which the Government may make financial grants to the voluntary welfare societies, in proportion to grants made to them by local authorities. This is a matter that it is hoped may be soon satisfactorily worked out on lines that all parties may find agreeable and helpful.

The Minister for Health and Welfare is responsible for the administration of the Prevention of Cruelty to and Neglect of Children Ordinance and for the appointment of Inspectors of Children under this enactment. The Minister is also responsible for the working of the Adoption Ordinance, the Affiliation Ordinance and the Guardianship of Infants Ordinance. These three last named were approved by the Legislative Council in 1959. The Care and Protection of Children's Ordinance is in need of revision and this matter has received attention during the year. A new Bill may soon be put before Legislative Council incorporating amendments to this and the Juveniles Ordinance.

Legislation

The general legislation designed to protect the health of the community is contained in the Public Health Ordinance, the Food and Drugs Ordinance, the Prevention of Malaria Ordinance and the Public Health Division of Lands Ordinance. Although the Public Health Ordinance was passed in 1926 it is still a useful and competent instrument, though it may need some amendment in the future. There is some evidence now that the Food and Drugs Ordinance is not entirely adequate to meet the modern day needs. It has some obvious failings and an examination of its defects leaves no alternative, but completely to revise this Ordinance. This work is now being undertaken. A further responsibility of the Minister for Health is the control of the nursing profession and of pharmacists and the trade in drugs. The Nurses and Midwives Registration Ordinance and the Pharmacy and Poisons Ordinance need minor amendment and the necessary work to this end has now been put in hand.

A substantial volume of subsidiary legislation has been considered during the year and the following list gives the titles of the rules that have been published. Further rules await the approval of the Central Board of Health.

1. PUBLIC HEALTH ORDINANCE
   (*a*) The Public Health (Transfer of Functions) Rules.
   (*b*) The Public Health (Labelling and Advertising) (Amendment) Rules.
   (*c*) The Public Health (Manufacture, Preparation, Packing and Re-packing of Food) (Amendment) Rules.
   (*d*) The Public Health (Milk and Dairies) Rules. Application to Thomson's Falls U.D.C.
   (*e*) The Public Health (Drainage and Latrines) Rules. Application to Kabarnet, Nanyuki, Nyeri, Kiambu and Limuru.
   (*f*) The Port Health Rules, 1959.

2. FOOD AND DRUGS (ADULTERATION) ORDINANCE
   The Food and Drugs (Adulteration) (Public Analysts and Fees) Regulations.

3. ADOPTION ORDINANCE
   The Adoption (General) Regulations, 1959.

4. REGISTRATION OF NURSES AND MIDWIVES ORDINANCE
   Nurses and Midwives (Registration) Regulations.
   Nurses and Midwives (Training) Regulations.

Medical Practitioners' and Dentists' Board

During the year an election was held under the governing Ordinance and the meeting in the last quarter of the year consisted of newly appointed members, the previous Board having completed its three years' term of office.

The Members of the new Board are:—

Chairman:	Dr. A. J. Walker, Director of Medical Services.	
	Dr. K. V. Adalja, M.B.E.	Elected Members.
	Dr. C. F. D. McCaldin	
	Dr. R. H. Wiseman	
	Dr. J. A. Carman	Appointed Members.
	Mr. K. C. Moss, L.D.S., R.C.S.	
	Dr. S. N. Mwathi	

Mr. D. M. Hornby has been appointed as the Honorary Legal Adviser to the Board.

The Board met four times during the year and dealt with five disciplinary cases. The name of one practitioner was removed from the register following a conviction for procuring a criminal abortion and for manslaughter. Amongst other matters considered by the Board was a memorandum on procedure for the certification or reporting of cases of sudden or unexplained deaths in the course of medical or surgical treatment and the question of the necessity for the registration and control of medical auxiliaries.

A complete list of registered and licensed medical practitioners and registered dentists was produced in the *Kenya Gazette*, Vol. LXI, No. 46 of 9th October, 1959.

During the year 163 medical practitioners were registered under section 4 (2) of the Ordinance, two dentists were registered under section 4 (2), 14 medical practitioners were licensed under section 11, two medical practitioners were licensed under section 12, and one medical practitioner was licensed under section 13.

Pharmacy and Poisons Board

Four meetings of the Board were held during the year and thanks must go to the unofficial members for their hard work and efforts to establish a fair and flexible control of the pharmaceutical trade.

Some imperfections of the governing Ordinance have come to light and recommendations have been submitted to the Minister for amendments to the Ordinance. The proposed alterations to the law are in general designed to facilitate business between the three East African Territories. Representations that the Board should specify standards of quality for pharmaceuticals and other chemical substances which are ingredients in household and horticultural products were referred to the Ministry and its Foods Standards Committee. This Committee has been charged with the task of framing a separate Bill to regulate the standards of foods, drugs and other chemical substances.

The Poisons List has been kept up to date and in line with modern thought. Amendments to the List have freed the supply of certain hormones used in veterinary practice. Skin creams containing approved antibiotics have also been taken off the Poisons List and made free for sale in general to the public. An important amendment to the Poisons Rules now permits hospitals, under the direct control of a registered medical practitioner to import drugs without the necessity of supplies having to pass through the hands of a registered wholesale dealer.

The Inspector of Drugs has maintained a close watch on the trade and has been able to secure several convictions against persons found to be engaged in illegal dealings in drugs. These operations are widespread and highly detrimental to the public interest. In particular, the use of certain modern drugs in uncontrolled dosage and not under supervision by a medical or veterinary practitioner often results in the establishment of resistant strains of infective organisms. There is the subsequent danger of their spread, by which time any advantage stemming from the possibility of using the new drug has been lost. Members of the Board consider the prime duty of the Inspector of Drugs is to protect the public in this respect.

Post Graduate Training Board

Four meetings of this Board were held during the year. The syllabus for surgical, and medical lectures was revised and improved, and the question of senior registrar posts and the interchange of registrars with other hospitals was discussed at length. Arrangements were made for the examination of registrars who had completed their two years training and one surgical and two medical registrars successfully passed the Board's examination. The successful candidates were issued with appropriate certificates from the "Post Graduate Training Board of Kenya".

Two former students of the Post Graduate Training Board have subsequently been elected, by examination, as Members of the Royal College of Physicians of Edinburgh and of these one as a Member of the Royal College of Physicians of London.

There are now five students drawn from the Kenya Medical Department who are in training at the King George VI hospital in Nairobi. They are graded as registrars and assist in the working of the hospital whilst studying during their two-year courses. They may later proceed to sit for examinations leading to higher degrees, but whatever the outcome, they pass out from their courses as doctors better fitted for their duties in the medical services.

Nurses and Midwives Council of Kenya

The work of the Nurses and Midwives Council has continued to increase. An Assistant Registrar was employed for a short time, but the Registrar is now working full time. The number of candidates entered for the Grade II examination in August, 1959, was the highest ever, and there was a rise in the number of candidates for the Assistant Midwifery examination.

The new three-year course of training for the Enrolled Assistant Nurse will start with effect from 1st January, 1960. This is an amalgamation of the Grade I and Grade II Assistant Nurse training courses. The students already studying for the Grade I and Grade II examinations will continue and take the examinations but no new students will be accepted for these courses.

The Rules covering training and entrance to examinations and the syllabus for the Enrolled Assistant Nurse have been published and circulated to all training schools.

A new training syllabus for Assistant Midwives is being discussed and it is hoped it will be ready for use by early 1960.

Nursing in the Colony has developed and advanced considerably during the past few years and the Council are discussing and preparing a new Nurses and Midwives Ordinance to control the practice and conduct of trained nurses and midwives as well as their training and registration.

It is encouraging to note the very considerable increase in the number of girls who are seeking further training and it is hoped that this will provide many more suitable candidates for training as Assistant Midwives and Assistant Health Visitors, as there is still a great need for these in the Colony.

No new training school was approved during the past year. The output from the existing schools is reflected in the table of examination results set out below:—

NURSES AND MIDWIVES COUNCIL OF KENYA EXAMINATION RESULTS

1959	Government Training Schools			Non-Government Training Schools			Grand Total
	Passed	Failed	Total	Passed	Failed	Total	
Kenya Registered Nurse, Final Examination ..	2	1	3	4	—	4	7
Kenya Registered Nurse, Preliminary Examination	6	2	8	5	1	6	14
Assistant Nurse,Grade I, Final Examination ..	28	1	29	4	2	6	35
Assistant Nurse, Grade I, Preliminary Examination	37	1	38	18	1	19	57
Assistant Nurse, Grade II, Final Examination	115	24	139	54	19	73	212
Assistant Midwives, Final Examination	11	1	12	47	13	60	72

During the year the following categories were registered or enrolled by the Council:—

Registered Nurses	143
Registered Midwives	79
Registered Sick Children's Nurses	5
Registered Fever Nurses	1
Registered Mental Nurses	3
Enrolled Nurses	3
Enrolled Midwives	2
Enrolled Assistant Nurses	1
Enrolled Assistant Nurses, Grade I	31
Enrolled Assistant Nurses, Grade II	169
Enrolled Assistant Midwives	62

Division of Lands Board

The Public Health (Division of Lands) Board is established under the Public Health (Division of Lands) Ordinance. The purpose of the Ordinance is the control of building developments in rural areas. The Board determines the density of dwelling house construction which may be permitted in varying circumstances in areas outside municipalities and African land units and, in doing so, decides the standard of sanitation which is necessary and ensures that there is available an adequate supply of pure water.

The Ministry of Health has a representative who serves as a member of the Board. His advice is given after consultation with the local medical officers of health. Adequate health standards have been achieved without the necessity to hold up development.

Two hundred and twenty-two applications were considered during 1959, either by the Board or by the Commissioner of Lands under section 8 of the Ordinance. Sixty-one applications recieved final approval, 112 were approved conditionally, 18 were refused, 23 deferred and five cancelled or withdrawn. These applications involved the division of 2,497 acres into 600 plots.

It may not be long before the work of this Board will be taken over by Planning Authorities established by the appropriate local government ordinances and by the committees brought into being when a Town and Country Planning Ordinance is enacted.

Welfare and Voluntary Organizations

Relief of Distress

The Ministry, on behalf of the Ministry for Local Government and Town Planning, has provided the administrative control of the Vote for the Relief of Distress, the financial responsibility of which is retained by the latter Ministry. An officer of the Ministry of Health and Welfare has been nominated as chairman of the Advisory Committee for the Relief of Distress, the secretariat of which is the Social Welfare Department of the Ministry of Local Government and Town Planning.

The Central Province Field Organization Operated by the British Red Cross Society and the St. John Ambulance Brigade

The field service, which was established at the beginning of the state of Emergency in Kenya to supplement the Ministry's Health Services in the Central Province, continued to provide effective machinery for extending health services into villages and homes where instruction is given in nutrition, hygiene, mothercraft, the case of the aged and the sick and in famine relief where necessary. Nursery schools have been established under the supervision of the field officers and the training of locally recruited Home Visitors is doing much to help in general health education in each location.

The Red Cross Training Centre in Nyeri has been established to train selected Home Visitors and during the year 22 African women have returned to their locations to assist in the field work under the supervision of the field officers.

Headquarter units of this organization have been established in the Nyeri, Kiambu, Fort Hall, Meru and Embu districts. There are three field stations in the Kiambu District, at Kikuyu, Gatundu and Githenguri, two in the Fort Hall District, at Kangema and Kandara, two in the Nyeri District, at South Tetu and Othaya, two in the Meru District, at Meru and Maua and one station at Embu.

The service augments the work of the Health Centres and has rendered invaluable aid in the treatment of tuberculosis and of malnutrition by the distribution of dried skim milk and other protein foods, and the education of nursing mothers in properly balanced diets. An extract from one of the field officers' reports provides a first hand impression of the efficacy of the work being undertaken by this organization:—

"General

With a view to preventing malnutrition and disease in children on a large scale, rather than to elleviate individual cases of sickness only, the policy . . . has been to carry health education to as many parents as possible. It was felt . . . that teaching and feeding the children in the nursery schools only could not prevent their being neglected at home. It was also found very difficult to get the small toddlers to attend the nursery schools, since in the Kikuyu society a child under seven years does not really count. The parents, who might be quite willing to allow the older children to attend, would not brook any interference or advice from the Home Visitors with regard to their care of the very young babies, unless thoroughly convinced of the value of this advice.

. . . . We have called 43 "health *barazas*" in nine months. . . . The people have realized that we did not force them to undertake anything, but that we gave sound, practical advice which they could follow easily in their own homes, and very soon our health *barazas* showed excellent attendances. Three to four thousand people at a locational *baraza* was not an unusual number.

. . . . Typical signs of malnutrition, T.B. and eye disease were shown to the Elders and the Village Committee, who were urged to assist the Home Visitors in finding cases of sickness and in advising the parents.

Many of the more valuable foods, recommended for child nutrition, such as beans, millet flour and skim milk powder are now much more in demand in the local shops than they were previously; carrots and tomatoes are no longer regarded as cash crops only, and eggs are—sometimes—given to small babies. English potatoes, however, are still the main food given to weaned babies and therefore, from the nutritional point of view, the main extrinsic case of kwashiorkor in this area.

A large number of soup-kitchens have been revived. Milk powder, or a mixture of milk powder, maize meal and soya bean flour, is often issued to mothers with small, sickly babies, or with twins and triplets, but a number of small children—many of whom are illegitimate and have been left in the care of the grandparents—are still provided with one or two cups of milk daily by the Home Visitor.

A number of Home Visitors were sent to three-week courses at the Red Cross Training Centre at Nyeri during 1959, and lectures and talks to all Home Visitors were given on general hygiene, nutrition, child care, sex education, ante-natal care and elementary maternal hygiene.

The nursery school teachers have co-operated very well with the Home Visitors.

MEDICAL

A number of inspections at *barazas*, or of individual villages—led to recommendations with a view to improving sanitary conditions—(latrines and rubbish heaps), which were carried out by the Chiefs and Headmen with good results in some locations, although the fly problem . . . is still very troublesome.

Resulting from a survey, carried out by the Government Eye Specialist, which disclosed a percentage of 75–98 per cent of trachoma in Kikuyu Division . . . a number of old people were operated on for entropion and senile cataract. It is largely due to this "eye *safari*" that suspicion and lack of co-operation from the *old* people in health matters have been overcome—the miracle of being able to see again after years of blindness impressed the older generations very deeply.

The World Health Organization initiated a mass X-ray programme for T.B. for the entire Kikuyu Division during the summer of 1959, which is still in progress. Home Visitors are usually asked to assist in bringing people to the mobile X-ray Centre.

The need for babies to have Triple Vaccine (Tetanus, Whooping-cough and Diphtheria) has been strongly and repeatedly stressed everywhere, through the Home Visitors and at *barazas*."

The cost of this service is borne by the Kenya Government from the Emergency fund and the expenditure during the year 1959 was approximately £18,000.

It is hoped to retain the services rendered by this field organization beyond the end of the Emergency by their absorption into the normal health services of the African District Councils as health authorities.

VOLUNTARY WELFARE SOCIETIES

There are several voluntary societies which are helping to implement the Government's policy in social welfare. Among the most important of these societies are the following:—

(1) *The Child Welfare Society of Kenya*

The Society has established branches in Nairobi, Mombasa and Nakuru and intends shortly to extend its activities to Eldoret and Kericho.

Much valuable work has been done by the Society in dealing with children in need of care under the provisions of the Prevention of Cruelty to and Neglect of Children Ordinance, 1955. The Society has established Nicol House for accommodation as a place of safety of European children who are destitute or otherwise in distress.

The Society has also achieved a considerable measure of success in dealing with African children, chiefly those picked up in Nairobi as vagrants, many of whom are repatriated to their homes, or if they are orphans, accommodated in Mission hostels. The Government makes an annual subvention towards the cost of the Society's headquarters administration.

(2) *The Edelvale Home for Girls*

This Home has been established as a place of safety and rehabilitation of female children who are exposed to moral danger or who are orphans or destitute. The Home is run by a branch of the Order of the Sisters of Charity and is situated close to Embakasi, on land and in buildings made available for a period of two years by the Government. The Home has accommodation for some 30 girls and is designed primarily to rehabilitate juvenile prostitutes, but is also used as temporary accommodation for waifs and strays.

(3) *The Society of St. Vincent de Paul:—*

The Government has recently made available on a pound for pound basis 50 per cent of the capital required to build the Society's home for the poor.

(4) *The Kenya Society for the Physically Disabled*

The British Red Cross Society has made available a building in the neighbourhood of King George VI hospital for use by the Society as a rehabilitation centre. The Society works in close co-operation with the Orthopaedic Centre of the Medical Department.

(5) *Other Voluntary bodies which are supported and encouraged by the Ministry are:—*

The Kenya Association for the Prevention of Tuberculosis.
The Kenya Society for the Deaf and Dumb.
The Kenya Society for the Blind.

The Government makes a small annual subvention to the Federation of Social Services in Kenya which is a co-ordinating body working on behalf of all the voluntary and departmental bodies in the field of Social Welfare.

CHILD WELFARE

The rapid development of the urban, industrial and agricultural life of the Colony, coupled with the increasing tendency towards the removal of tribal and communal responsibilities, has led to an increase in the problem of child care of all races.

Sponsored by H.E. the Governor, a Child Welfare Conference was established in July, 1959, under the chairmanship of the Minister for Health, with the object of examining the problem in all its aspects. A Working Party has been set up by the conference to undertake a detailed survey of the problem of child care throughout the Colony, with the following terms of reference:—

To carry out a survey and report upon conditions affecting the mental, physical, or moral welfare of children in the Colony, and to make recommendations for improvement of such conditions: with particular regard to:—

(*a*) The work of existing Departments of Government and voluntary organizations;

(*b*) the methods of preventing an increase of existing adverse conditions;

(*c*) the financial requirements of any existing or future project that may be recommended, and the comparative urgency thereof.

To assist the investigations of this Working Party the services of a professional Sociologist have been employed and it is hoped within the next few months to publish a full report, including statistics relating to the size of the problem and recommendations both financial and administrative for its solution. The report may be used for attracting financial assistance not only from within the Colony but also from international sources.

THE CARE OF THE AGED

A conference was held in October, 1959, under the chairmanship of the Director of Medical Services to investigate the increasing problem of the care of the aged and infirm, with the object of making recommendations as to the need for the establishment of geriatric homes, and also for the care of individuals with the aid of home visitors under the aegis of voluntary societies.

PUBLIC HEALTH

Vital Statistics

The estimated mid-year population of Kenya for 1958 was 6,351,000 of whom 6,081,000 was the estimated number of Africans. The last census was held in 1948 and these figures can therefore only be used conditionally in approximate calculations.

A considerable movement of the population from the countryside to the towns has taken place. A recent sample census of Nairobi undertaken by the East African Statistical Department showed that the population had increased by over 100,000 or 86 per cent between 1948 and 1958. The figures are quoted in the following table:—

Race	1948	1958	Increase
European	10,830	22,200	11,370
Asian	43,749	84,500	40,751
African	64,397	115,000	50,603
TOTAL	118,976	221,700	102,724

This Nairobi census showed an increase in the proportion of females and children, reflecting a more settled and permanent urban community.

The almost complete absence of bio-statistics makes the planning of public health programmes difficult. We are compelled to base our programmes on knowledge of what has happened in other countries in the past, now more advanced and of countries of similar circumstances to ourselves, but with a more highly developed public health service. Some attempt has, however, been made to obtain statistics in the field, by questionnaires, depending upon the mother's recollection of her reproductive history and the subsequent fate of the children born to her. For example, the Medical Officer of Health, West Suk district, conducted such surveys to determine infant and neo-natal mortality rates. He assessed the infant mortality rate at a level of 450 per 1,000 live births and the neo-natal mortality rate was 338 per 1,000 live births. A similar survey on the Ndia division of Embu district revealed an infant mortality rate of 185, a neo-natal mortality rate of 50. The still birth rate was 55 per 1,000 live and still births, and the birth rate was 28 per 1,000 of the population. This study also revealed a sex ratio at birth of 1,045 males to 1,000 females.

A further study in the North Nyanza district, based on births in the district hospital and in rural health centres revealed infant mortality rates in successive years as follows:—

1953 .. .. .. 49 deaths per 1,000 live births.
1954 .. .. .. 80 deaths per 1,000 live births.
1955 .. .. .. 46 deaths per 1,000 live births.
1956 .. .. .. 39 deaths per 1,000 live births.

In the same district, of the children born to 1,050 women who attended ante-natal clinics but were delivered at home there was an infant mortality rate of 115, a neo-natal mortality rate of 25, and a still birth rate of 20.

In South Nyanza, the Medical Officer of Health studied events over a period of a year, in a selected rural area with a population of 5,068. Statistical analysis showed an infant mortality rate of 148, a neo-natal rate of 38 and a still birth rate of 95. The birth rate was 46 per 1,000. In the Masai tribe, the infant mortality rate was shown to be 279 per 1,000 live births, the neo-natal mortality rate being 75 and the Akamba in Kitui have an infant mortality rate of 212, and a neo-natal mortality rate of 123.

International Health

There were no major incidents affecting the "convention" quarantinable diseases. Variola minor continued to occur throughout the Colony, though at a lower level than in 1958. Only one case was detected within a port area, namely Nairobi Airport, but the patient was found later to have come from another district. Twelve cases of plague were reported, four and eight from Nyeri and Fort Hall districts respectively.

Vigilance services along the northern frontier and at the airports were alerted in view of the increased incidence of yellow fever in the Sudan. Neighbouring territories have been requested, in view of the increasing importations of monkeys for re-export, to adopt certain precautionary measures to obviate any risk of introducing the yellow fever virus into Kenya. No cases of cholera occurred in East Africa, but in view of the fact that epidemics have been known to spread in Kenya and of the continued occurrence of cases in the sub-continent of India, a very careful watch was maintained, particularly at airports. Both louse-borne relapsing fever and louse-borne typhus were reported during the year from Ethiopia, necessitating precautionary measures at the border.

The Port Health Rules were completely revised so as to conform with the International Sanitary Regulations: the new rules should be in force early in 1960. As a result of representations made to the World Health Organization, Kenya has been declared a Yellow Fever receptive area so long as the aedes index in Mombasa Port and Nairobi and Port Reitz Airports does not exceed one. Only the United Arab Republic, the Union of South Africa and the Republic of India still regard Kenya as an endemic area. The four East African territories of Kenya, Uganda, Tanganyika and Zanzibar are now treated as a health union for the purpose of interterritorial travel.

Mombasa Port

The port health staff dealt with 46,285 passengers and 1,656 crew, carried in 1,270 ships and 274 dhows. The number of incoming dhows has decreased as many of the passengers from the Arabian and Persian Gulf ports are now using the two new ships plying between these ports and the East African coast.

Stringent anti-rodent measures were maintained and 4,597 rats were trapped, a proportion of which were examined for plague. All findings were negative. The fumigation service operated so well over the years by the East African Railways and Harbours has now been taken over by the London Fumigation Company. Mosquito control, previously the responsibility of the Mombasa Municipal Council, was handed over to the Port Health Office in the middle of the year. This, associated with the opening of an office in the port, has ensured more close and effective supervision of sanitary and health arrangements at the port.

The country's large export and import trade in foodstuffs, through a port handicapped by the disadvantageous climate of Mombasa demands careful supervision from the health standpoint. The condition of foods for export is closely watched from the time of entering the port until cold storage is reached on board ship. Improvements have been made in the handling and storage and especially in the speed of shipment. Fresh meat and fish are now exported to the Persian Gulf, Mauritius and Portuguese East Africa, and the exports of butter and ghee are rising. Overseas authorities are increasing their requests for certificates of inspection and local examinations, sampling and analysis are made in accordance with the requirements of the importing countries. The appointment of the General Superintendence Company, Mombasa, as public analysts, has proved most useful in the analysis of exported foodstuffs.

Nairobi Airport

Some 239,000 arriving, departing and in-transit passengers passed through the airport during the year. Aircraft movements totalled 6,200. The Central Government is the Port Health Authority for this large airport, administering these duties through a part-time port health officer, a resident port health inspector and a nursing sister with auxiliary staff.

Mosquito control measures are rigidly enforced and a large number of permanent breeding places have been eliminated, leading to a significant reduction in the number of culicine mosquitoes. No *Aedes aegypti* were found.

Routine bacteriological examination of water continued. All samples taken from the main supply were graded as Class 1 on bacteriological examination. Chemical reports on samples taken at three-monthly intervals were also satisfactory. The water point used by aircraft water carts was improved and the procedure subjected to regular checks. The sewage disposal arrangements used in connexion with aircraft conservancy was also improved.

A high standard of food hygiene was maintained in the airport restaurants, kitchens, canteens and food packing establishments. Food handlers have to submit to routine six-monthly stool examinations and carriers of infection are barred from this particular work until they are proved to be non-infectious.

Housing

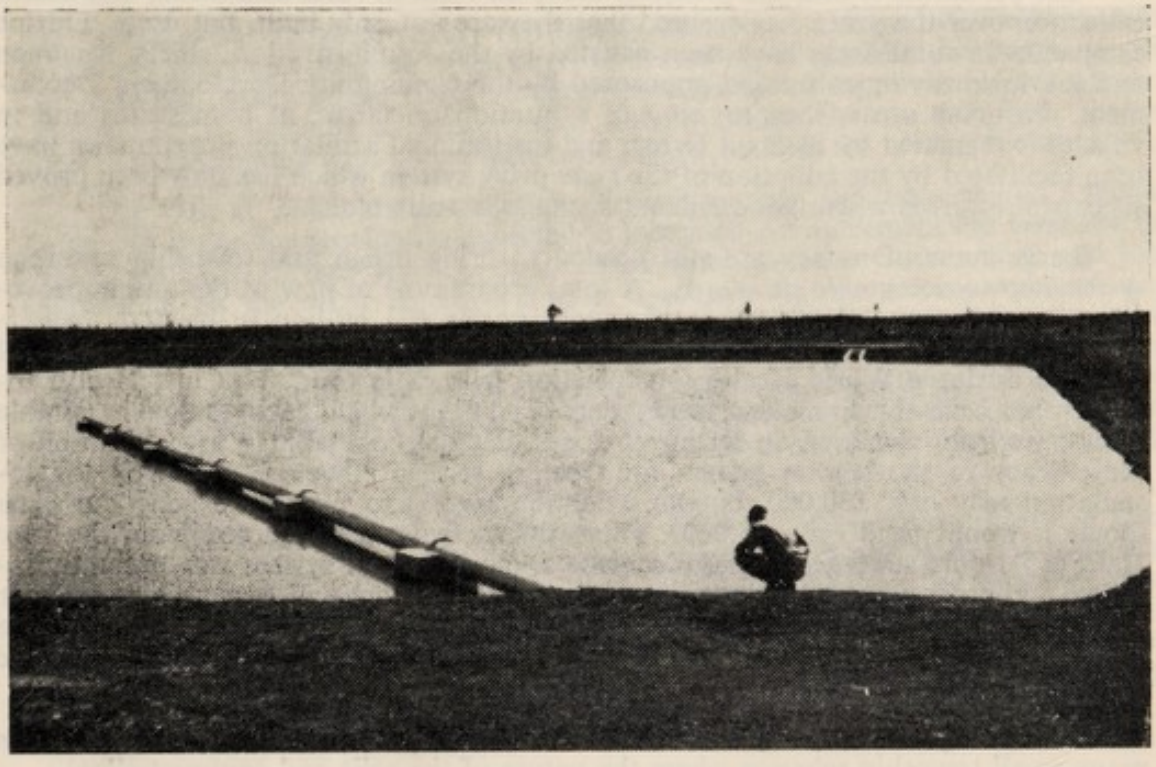
Two factors react on the housing problem in the Colony, namely the overall increase of the population and the even faster rise in the urban population due to the tendency for families to follow the breadwinner and settle in the towns. The inherent social dangers of an inadequately housed community outweigh the possible public health dangers resulting from the adoption of relaxed and simplified standards for housing. The minimum requirements now called for are adequate living space for the family, both inside and outside the home, a safe water supply and conservancy system, together with adequate ventilation and protection from inclement weather. In devising acceptable standards, a very delicate balance needs to be preserved, to escape the creation of future slums on the one hand, by allowing too low a standard and the perpetuation of the housing shortage on the other, by insistence on strict requirements leading to high building costs.

Housing surveys were undertaken with the help of the local health authorities in Nakuru, Kericho and Nyeri. The results confirmed the need for further family housing as opposed to bachelor quarters and the need to reduce the cost of housing if we are to keep pace with the growth of the urban population. A way of meeting this difficulty may be to encourage the development of peri-urban neighbourhood units such as has been done with considerable success at Riruta, near Nairobi. This solution has its limitations since transport costs can more than offset the reduced rentals consequent upon simplified building standards which are allowable in dispersed layouts.

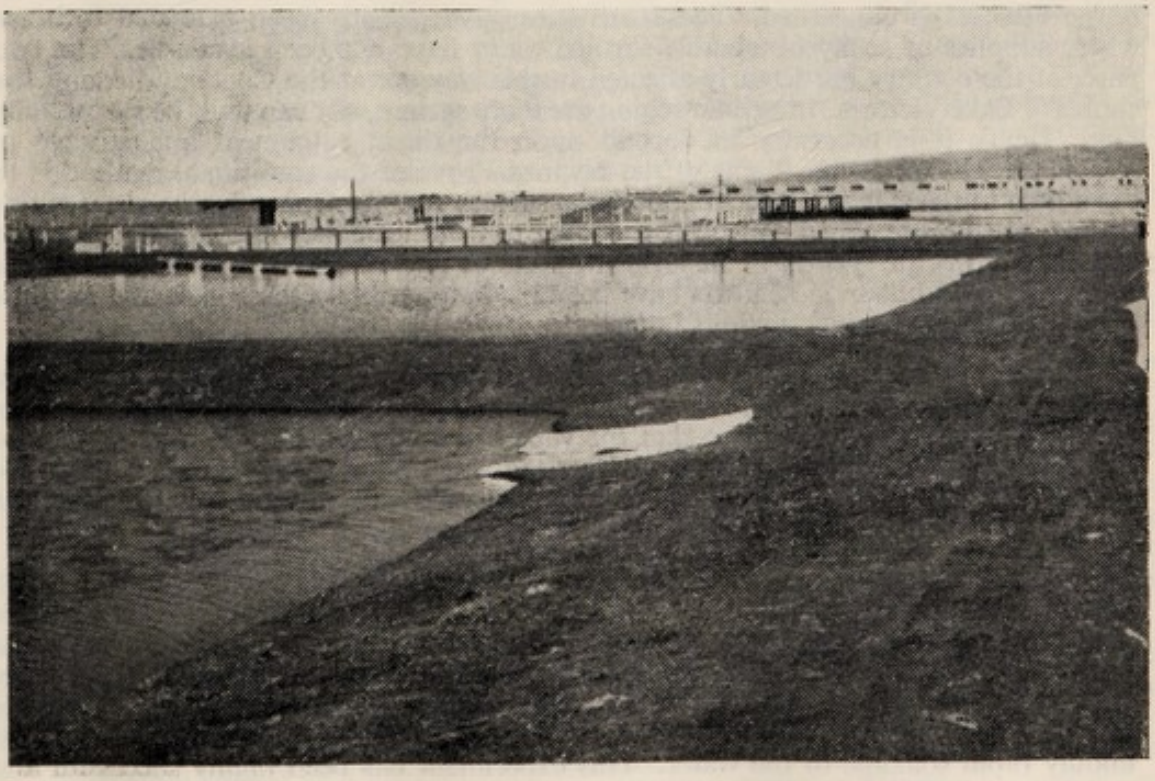
Progress has also been made with rural housing, particularly with regard to the re-siting, planning and rebuilding of villages in the Central Province, in addition to the construction of dwellings on consolidated holdings. The largest proportion of houses now being built are rectangular in shape, normally of about 30 ft. x 15 ft. in dimensions, and with between three to five rooms, The height of walls, size of windows and and the need for permanent ventilation have been scrupulously specified, and all types of materials are being used—mud and wattle, stone, timber and timber off-cuts. Many of these houses have been built for as little as £50.

A good example of a permanent housing scheme in a rural setting is to be found on the perimeter of Nyeri Township at Ruringa. The allocated plots measured 80 ft. x 40 ft. and type plans for semi-detached houses were prepared by the district health inspector. By the end of 1959, 38 houses were completed at a cost per superfoot of Sh. 11/75. All the work has been done up to the present, without any financial aid, but the district council have now taken up a loan from the Central Housing Board and are prepared to lend the prospective builder up to 75 per cent of the cost of any house being built in the future. This scheme is another example of compromise between cost and standards of building construction and health requirements.

PHOTOGRAPHS OF NAIROBI AIRPORT SEWAGE LAGOONS



(1) Primary Pond With Influent Pipe to Center



(2) Secondary Pond in Left Foreground

Sanitation

The pit latrine is now the generally accepted form of rural sanitation, and health education over the years, has ensured that they are not only built, but used. Latrine campaigns in rural areas have been assisted by the Administration, chiefs, headmen and the various women's clubs, sponsored by the Community Development Department. In many areas, the provision of sanitation on farms, at homesteads and in villages is regulated by by-law. Urban and institutional sanitation programmes have been facilitated by the adoption of the *aqua* privy system which has now been proved successful in areas where good effluent soakage is available.

Large sums of money are still needed to bring urban and township sewerage systems up to acceptable standards. A total programme of new works and improvements representing an investment of approximately £2½ million is in hand. Waterborne sewage systems are never cheap, but as a result of his observations in Central America during a World Health Organization fellowship tour, the Chief Health Inspector has been able to make certain recommendations which have resulted in notable economies being achieved on certain schemes. He has been able to assure himself of the efficacy of the lagoon system for treating sewage effluents. An orthodox installation may cost £30,000, but an oxidation lagoon to perform exactly the same function would need only £5,000. These figures have been quoted from the new Nairobi Airport sewerage disposal scheme and the lagoon system was naturally installed. Photographs of the lagoons appear in this report and readers may wonder whether the installation has a greater value as an amenity, rather than a utility. The system is working so well and with so little offence, that fish are thriving in the secondary pond.

Sewage lagoons working on a natural oxidation cycle are now being adopted for many small township schemes where the nature of the soils and contours allow.

Water Supplies

For many years the field health staff have been active in encouraging the construction of protected water supplies from springs. The numbers of such installations amount to thousands and such an achievement cannot help but have had a marked effect on the general health of the community, especially in so far as the spread of waterborne diseases is concerned. These activities have recently been extended to areas where supplies of easily obtainable surface water have not been available. The two parts of the country particularly affected in this way are at the Coast and round the shores of Lake Victoria. In neither region are there springs, nor can wells be successfully dug. Hence it is necessary to depend upon the direct catchment and storage of rainwater. On the Kano Plains of the Nyanza Province the traditional method is to dig a hole in the clay soil and so collect the surface runoff. Quite clearly, these tanks, or yaos as they are called constitute a danger to health for they allow of the excessive breeding of vector species of malaria mosquitoes and of snails, responsible for the transmission of bilharzia. Efforts have been made to clean up these yaos and institute control measures against noxious fauna.

Field health officers are now popularizing a system for the drawing of water from these yaos which does not necessitate direct collection from the banks. Simple pumps and filters are being installed so that the yaos can be fenced off and treated with insecticides effectively. The sand filter clears the water and makes it more suitable for human consumption, whilst the fencing of the yaos will result in there being less pollution of the water by enteric organisms.

At the Coast, the problem is different for the top soil is pervious and it is impossible to dig tanks which will permanently hold water. In some parts clay is available and a tank can be dug in the coral and lined with this clay, but there are many areas where the advantage of a ready source of such material is not enjoyed. During the investigations into the building of sewage lagoons, locally manufactured plastic sheeting was applied to the base and sides of the excavation, in order to prevent unduly rapid soakage of the water. This experiment has been highly successful and is being applied to excavations designed to hold water for drinking purposes. These catchment tanks are called "*jibias*" at the Coast and are being built in considerable

numbers and some of them will be lined by plastic sheets in order to conserve the water within them. During the year 14 have been built by Government health staff and nine others by private individuals. The largest of these *jibias* holds 12,000 gallons.

The Central Province is very fortunately situated with regard to the availability of surface water and progress in the improvement of supplies in this part of the country is advanced. Many of the larger villages now have piped supplies of water which is pumped up to them by hydraulic rams. Others obtain their water from shallow bore holes equipped with specialized hand rigged buckets for raising the water.

The rate at which the installation of rural systems for the safe and adequate supply of water are provided is expected to increase. An agreement has been reached with U.N.I.C.E.F. and W.H.O. on the one hand and the Government and local authorities on the other to embark upon a scheme for the improvement of rural hygiene and water supplies during 1960 and 1961. U.N.I.C.E.F. will supply special equipment, training aids and material to the value of £20,000 and the W.H.O. has assigned a public health engineer to Kenya. Schemes for the betterment of sanitation and water supplies are due to begin in the Tana River district of the Coast Province, the Nyeri district of Central Province and the Elgeyo-Marakwet district of the Rift Valley Province.

The problems in these three areas are different. Developments in the Coast Province will depend upon the construction of many wells and *jibias*. It is expected that hand or wind pumps will be installed. In the Central Province the greater emphasis for improvement will be on protected furrows running from rivers and on ring mains carrying water from the higher points of rivers. At these heights there will be little risk of pollution at the place of intake. Water supply installations in the Elgeyo-Marakwet district will depend mostly upon rams and windmill pump supplies to markets, schools and social centres.

Health Education

A new post of workshops manager and general assistant was sanctioned and filled during the year. This has allowed the routine production of visual and other aids to be continued during the year at about the usual levels, whilst the Health Education Officer has been freed to engage himself on developing his work.

There has been a marked increase in the production of flannelgraph teaching aids and the large majority has been sold to the Department of Community Development. In furtherance of this development, a start has been made in the production of a new series of "Flannelgraph Cut-out Books" with a brightly coloured cover common to all titles. Of these, a trial run of 200 each of books on tuberculosis, typhoid and nutrition have been produced and sold out, another 1,000 of each is now being printed. New pictorial backgrounds to suit these new books have also been designed and produced.

Coloured film strips produced by the Division are proving popular. Sets of slides on hookworm, bilharzia and tapeworm have been assembled and more orders have been received. This work has involved the staff in the preparation of more than 735 photographs from which the slides of film strips are made. The acquisition of a Rotaprint machine towards the end of the year has permitted the production of a large quantity of leaflets and handouts of various kinds. Besides the preparation of teaching material for use of officers in the field and in schools, use was made of the mobile unit to help in a campaign against hookworm and bilharzia at the Coast. Much assistance was given by the Department of Information, and the results of many weeks of work in this direction, judged by those on the spot have been deemed to be most encouraging. Finally, an exhibition on the "Cost of Ill Health" was staged at the Royal Show in October.

The most important function of the Health Education Officer is to train medical auxiliaries in the elements of Health Education. A good deal of time has been devoted to this task and the normal routine is to deliver lectures or demonstrations in one afternoon weekly to third year student Health Inspectors and weekly talks for Health Assistants on promotion courses at the Medical Training Centre.

The following special teaching courses were conducted during the year:—

At the Medical Training Centre: One course of two weeks at intermediate levels and a similar course at senior levels for hospital assistants attending for refresher courses.

At Jeanes School: Five separate courses of six weekly talks to Chiefs, Councillors, Youth Club Leaders, etc.

At Royal Technical College: Two course of six weekly talks on Health Education.

Child Welfare

The main effort has, in general, been directed towards the improvement and expansion of general measures rather than towards special campaigns for the control of specific diseases, though the problems created by such major diseases as malaria, sleeping sickness, filariasis, kala azar, and tuberculosis have not been ignored. Special emphasis has always been placed on the importance of the health of children.

The needs of the pre-school age child and the prevention of malnutrition have received increasing attention in recent years. Nutritional surveys in Nyanza, Central, Southern and Coast Provinces have been started. This followed the recognition of widespread dietary deficiencies amongst the toddler age group in certain parts of the Central Province. Much of this is thought to be the result of the social disruption caused by the civil disturbances of the last seven years and of the initiation of agricultural and land reform measures. These latter measures, although necessary for the eventual benefit of the community, have had an immediate effect analogous to that resulting from the enclosure of the common lands of England. In Nyanza Province the surveys have revealed a low nutritional status with signs of protein and vitamin A deficiency and of anaemia. Anaemia, present in all districts at an average level of 70 per cent haemoglobin, was appreciably worse in Central Nyanza district where the mean figure was 53 per cent. Correlation of the prevalence of disease as revealed by hospital statistics and the nutritional assessment, indicates that the cause of the more severe anaemia in Central Nyanza is probably due to the combined effects of malaria, bilharzia and hookworm. An incidental observation for which no explanation can yet be advanced was the presence of a high prevalence of goitre in the Kericho districts of Nyanza Province.

In the Coast Province, widespread anaemia is considered to be almost certainly the result of a heavy and general hookworm infestation. Some recent research on the effect of iron deficiency in the diet in these circumstances is to be applied. Efforts are now being made to find suitable foodstuffs commonly consumed by the people which can be fortified by the addition of iron salts.

The causes of malnutrition are always a complex mixture of economic, social and cultural factors interacting in varying degrees. The production of food on the home farm is a matter of primary importance, and as a secondary measure, the distribution of surpluses of protein rich foods at a cost within the means of the average person. Above all, however, ignorance must be combated. With the assistance of the Nuffield Foundation, who have granted £80,000 to the project, a combined school of hygiene, husbandry and agriculture is being built in the Kitui district. Here it is hoped, whilst the head of the family receives instruction on better and more effective farming, to teach the mother the elements of proper nutrition, cooking, child care, home hygiene and control of the domestic budget, so as to enable the family to benefit from increased productivity and better home management.

Health Centres

Steady progress has been made in the building of health centres, though the programme has been slowed, not through lack of desire on the part of local health authorities, but through financial difficulties. The total number in the Colony is now nearing 100, though it cannot be said that each and every centre is working as well as could be wished. Pressure and demand for curative services tends to overlay the more important aspects of prevention of sickness and the promotion of health. Until a full complement of health centres is attained each will inevitably have to cater for a far larger population, and a wider area, than that for which it is intended. As an interim measure a working solution has been found in the parallel rural clinics which

constitute an intermediate stage between the dispensary and the full health centre. They are staffed to a lesser scale and may only be attended by a nurse, a health assistant and probably a midwife. Visits to these clinics are made as frequently as can be arranged by the medical officer, hospital assistant and health visitor. Hence, whilst not permanently discharging the function of a health centre, they are on certain days, when visits are made to them, a health centre in all but name.

In writing of these interim arrangements, it is also to be remembered that the mobile health unit, besides having a definite place amongst the pastoral peoples, has a primary value in extending the work of the health centre beyond its immediate sphere of influence. The mobile health unit has also proven extremely valuable in the development of special effort programmes, either in terms of specific areas or specific diseases. The assistance given by U.N.I.C.E.F. in the equipping of health centres and the provision of transport has been invaluable.

Communicable Diseases

It is inevitable that year after year the same pattern of disease should be repeated. This pattern in so far as the alimentary and respiratory communicable diseases are concerned, is the same as that for any country where there is considerable room for improvement in the provision of such basic services as good housing, safe water supplies and conservancy systems and where the practice of domestic hygiene and child rearing is still primitive. Super-imposed on this pattern there are all the vector-borne diseases that flourish in tropical and semi-tropical climates.

Over a period of years a change can be observed consequent upon the application of new methods of specific control of communicable diseases. For example, cholera which swept East Africa in a series of epidemics towards the end of the 19th century is now no longer seen, and plague is becoming unimportant.

Yaws, prevalent in the 1920's is now reported in relatively negligible numbers. Sleeping sickness, which has produced three epidemics this century in the Nyanza Basin, is now largely controlled. Other diseases such as smallpox, malaria and filariasis have remained. On the other hand, kala azar, which had a low endemicity is now more prevalent and other diseases are becoming relatively more important, to mention only typhoid, food poisoning, the pneumonias, whooping-cough and tuberculosis. Poliomyelitis is changing from a disease of high endemicity and low morbidity to one of high morbidity and epidemicity. The toll effected by these common communicable diseases in conjunction with a state of poor nutrition, must still be enormous.

Smallpox

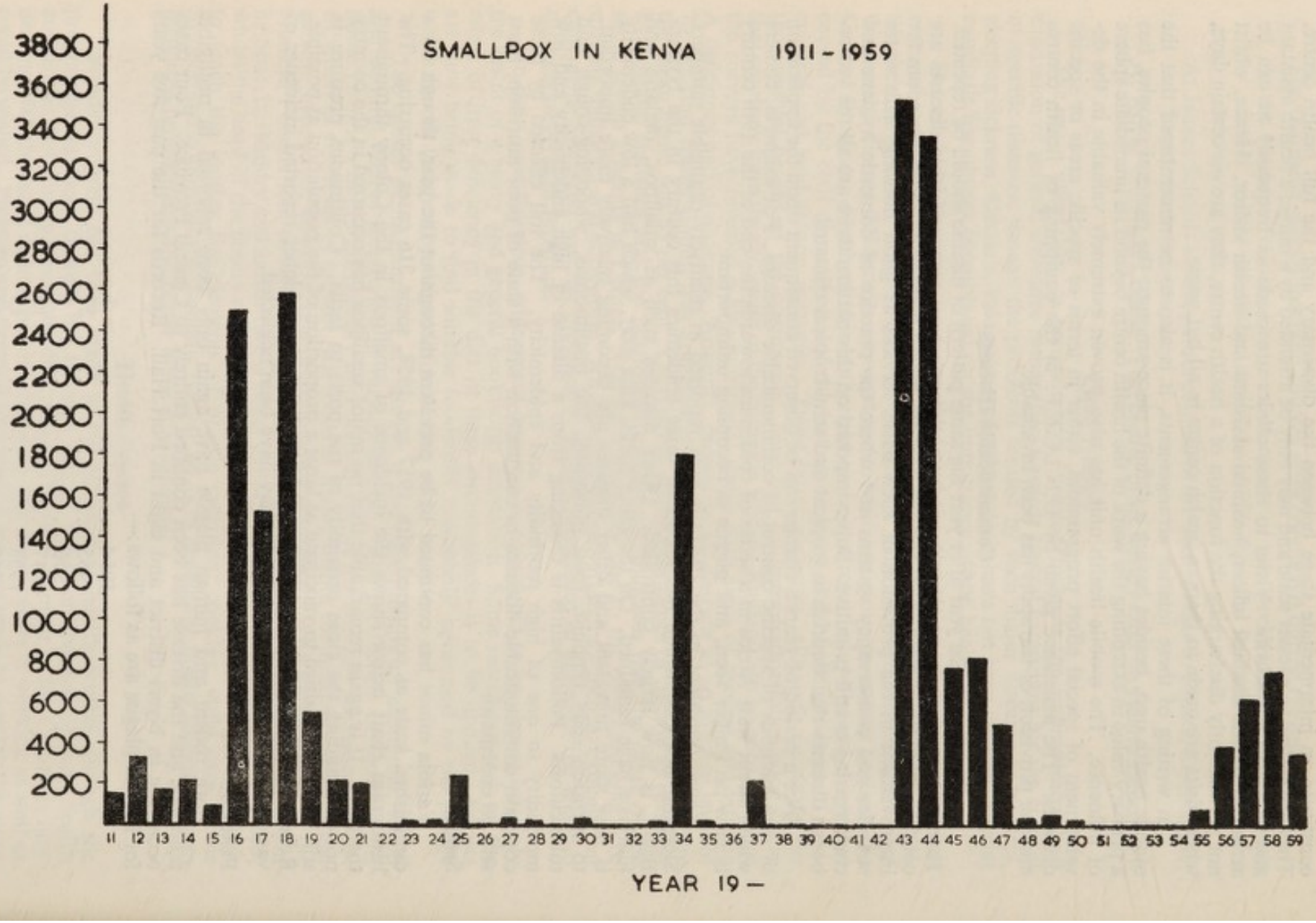
Variola minor has continued to be prevalent throughout the year, though on a diminished scale as compared with 1957 and 1958, some 316 cases occurring. The histogram chart below shows the incidence of smallpox in the Colony throughout the years. It is again remarkable that no major smallpox has occurred in the country notwithstanding the close proximity of the ports to India. Continuous pressure is still being maintained to vaccinate as large a proportion of the population as possible. Relaxation of precautions is reflected immediately by a higher reported incidence of variola minor from any area that may have been neglected.

Plague

Both rodent and human plague have again only been reported in negligible numbers, and the disease has been confined entirely to Central Province. Four cases occurring in Nyeri district and eight in Fort Hall. Records for the past five years for human plague are as follows:—

1954	1
1955	27
1956	7
1957	15
1958	19
1959	12

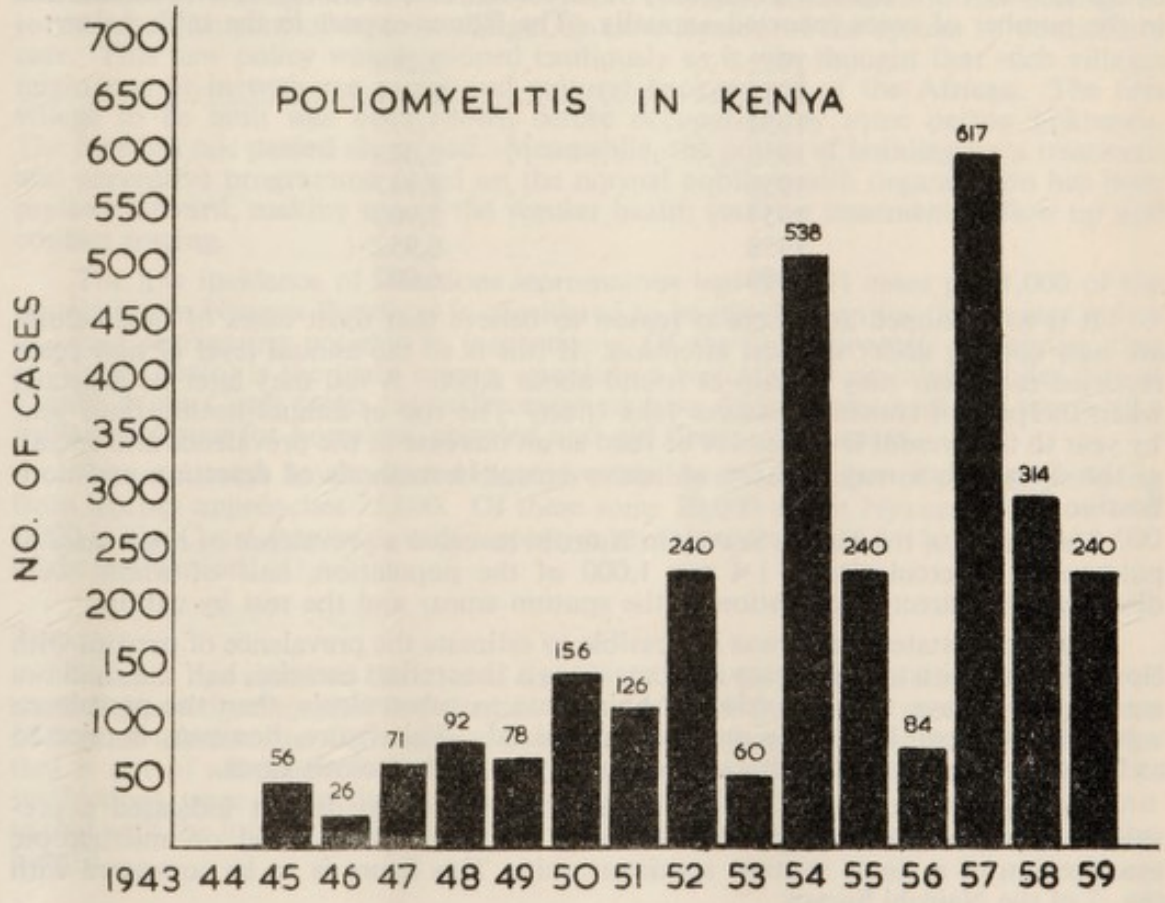
All the cases occurred in Central Province apart from those resulting from an outbreak in Nakuru County in the Rift Valley Province, a known endemic area, where 25 cases occurred in 1955 and 1956.


SMALLPOX IN KENYA 1911 - 1959
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
YEAR 19 —

POLIOMYELITIS

The histogram chart below shows the incidence of poliomyelitis in Kenya in the post-war period; it will be observed that there were epidemics in 1954 and in 1957. Both followed the same pattern reflected by a small increase in cases being noted at the Coast, particularly Mombasa, during the months of May, June and July, followed by a rise in the number of cases in Nairobi City and environs during the final quarter of the year, and thence a rapid spread throughout the rest of the country following the main lines of communication. During the year under review a similar wave of cases was noted in Mombasa in the midyear, the medical officers of health were warned of the possibility of a further epidemic occurring, commencing again during the last quarter of the year. This prediction unfortunately proved correct, and a dramatic rise in cases occurred during the last few weeks of 1959, continuing into 1960. The figures gave presage of an epidemic on an unprecedented scale. In view of this, and taking into account other factors such as the economic resources of the country, a decision was taken to use the Sabin oral attenuated live poliomyelitis vaccine.

The vaccine was first exhibited during the second week of December to some 60,000 susceptible children in the Kerugoya area of Embu district. A small but explosive outbreak had occurred here during the 1957 epidemic, and indications were that another focus of epidemic spread was developing. Preliminary results indicate that the vaccine was effective in terminating the epidemic, and no untoward incidents have been reported. By the end of the year, plans were being made to offer oral vaccine as a protection against poliomyelitis to all persons, but especially to those living in the vicinity of Nairobi.



TYPHOID

Enteric diseases still constitute a grave problem and are responsible for a considerable amount of ill-health. Typhoid is endemic.

In the post-war era the annual returns showed an almost constant picture of 700/800 cases per year until the end of 1952. With the civil disturbances, however, an increase in cases occurred, rising to a peak of over 3,000 cases in 1954, and in the following three years remaining at over 1,600 per annum. During 1958 and 1959,

there was a welcome reduction in numbers to 1,239 and 1,115 respectively. As throughout the previous years, approximately half of these cases have occurred in Central Province (in 1959—576 cases out of 1,115). Thus, if the attack rates per 100,000 are calculated, it will be seen that the figure for Central Province is 35, for the remainder of the Colony it is 11, and the average for the whole Colony is 17.

The higher incidence in Central Province is significant, and one can only associate it with higher overall population densities in this region. This relation is appreciated and a great deal of effort has been put into improving water supplies and sanitation throughout Central Province. These improvements in themselves, however, will not be sufficient unless the people make intelligent use of the improved facilities in this direction.

Dysentery

A total of 3,142 cases were reported during the year which is probably but a small proportion of the total cases occurring. From a knowledge of hospital in-patient and out-patient attendances, it is fair to assume that the great majority of cases are occurring amongst children of pre-school age. The toll on childhood must be considerable, particularly when taken in conjunction with worm infestation and underlines the need for improvement in child care and domestic hygiene.

Tuberculosis

During 1959, a total of 6,002 cases of pulmonary tuberculosis were reported, and 875 cases of non-pulmonary diseases. This is the first year since the commencement of the special effort against pulmonary tuberculosis that there has been a dimunition in the number of cases reported annually. The figures appear in the table below:—

1952	2,288
1953	2,911
1954	3,375
1955	3,062
1956	4,947
1957	5,902
1958	6,952
1959	6,002

It is to be hoped and there is reason to believe that most cases of tuberculosis are now coming under medical attention. If this is so the annual level of new cases reported each year may remain at round about 6,000. A fall may later be expected when the present control measures take effect. The rise of annual notifications year by year to the present level cannot be read as an increase in the prevalence and spread of the disease, but may indicate an improvement in methods of detection and notification.

The results of the Urban Survey in Nairobi revealed a prevalence of open cases of pulmonary tuberculosis of 1·4 per 1,000 of the population, half of whom were discovered by direct examination of the sputum smear and the rest by culture.

The report states that it was impossible to estimate the prevalence of persons with closed lesions with any accuracy but that if, as a theoretical exercise, half the shadows seen in the X-rays were recorded as being due to tuberculosis, then the prevalence would be 10·4 per 1,000 of population examined. This figure, however, is rejected as being too high, bringing in as it does many non-tuberculosis cases.

The survey undertaken in the neighbouring Kiambu district indicated a prevalence of open pulmonary tuberculosis of 4·2 per 1,000, based on microscopic examination of a single sputum specimen only. This figure is to be compared with the ·7 of the Nairobi Survey.

The Rural Tuberculosis Survey, which like the urban, was undertaken in association with the World Health Organization, has not yet submitted a final report, but preliminary figures suggest an overall prevalence of pulmonary tuberculosis in the country, as evident by sputum culture, of 8 per 1,000 of the population.

The present anti-tuberculosis programme is based primarily on a domiciliary service, and double drug regime, comprising para-amino salicylic acid and isoniazid, following primary admission to hospital for assessment and initiation of treatment.

Difficulties encountered have been due to a lack of an adequate number of beds, an inadequacy of field staff for follow-up and contact tracing, and the insufficient time which medical officers can devote to one disease. Finally, bone tuberculosis has not been neglected as is evidenced by the publication of a text book on the subject by the Orthopaedix Specialist and his colleagues.

Cerebro-Spinal Meningitis

This is another disease, which from the study of the statistics, shows a tendency to flare up at periods of stress. A histogram, illustrated below, constructed from data in the years 1931 to 1959 shows an increase of cases in the mid-1930's, with a considerable rise during World War II, and again during the period 1954–1959.

The distribution of cases during 1959 is as follows:—

160 cases	.. ..	Central Province.
111 cases	.. ..	Rift Valley Province.
135 cases	.. ..	Nyanza Province.
33 cases	.. ..	Southern Province.
11 cases	.. ..	Coast Province, and
4 cases	.. ..	Northern Frontier Province.

Leprosy

With the introduction of the sulphone drugs ten years ago the out-patient treatment of leprosy became a practical proposition, and the use of this form of treatment was extended throughout the country. More recently, consideration has been given to the establishment of leprosy villages as an extension of the system of domiciliary care. This new policy was developed cautiously as it was thought that such villages might not fit in with the social and cultural background of the African. The first village to be built was burnt down before occupation by some person unknown. The hint has not passed unnoticed. Meanwhile, the policy of building up a treatment and preventive programme based on the normal public health organization has been pressed forward, making use of the regular health staff for treatment, follow up and contact tracing.

The low incidence of infectious lepromatous leprosy (·74 cases per 1,000 of the population in Nyanza Province) is considered to be justification for the present policy to avoid segregating patients in institutions. Of the two leprosaria remaining, that at Alupe (Itesio) is the main centre, established basically for research, whilst that at Tumbe at the Coast caters for early cases requiring initial assessment and serves as a welfare institute for homeless, crippled and old "burnt out" cases.

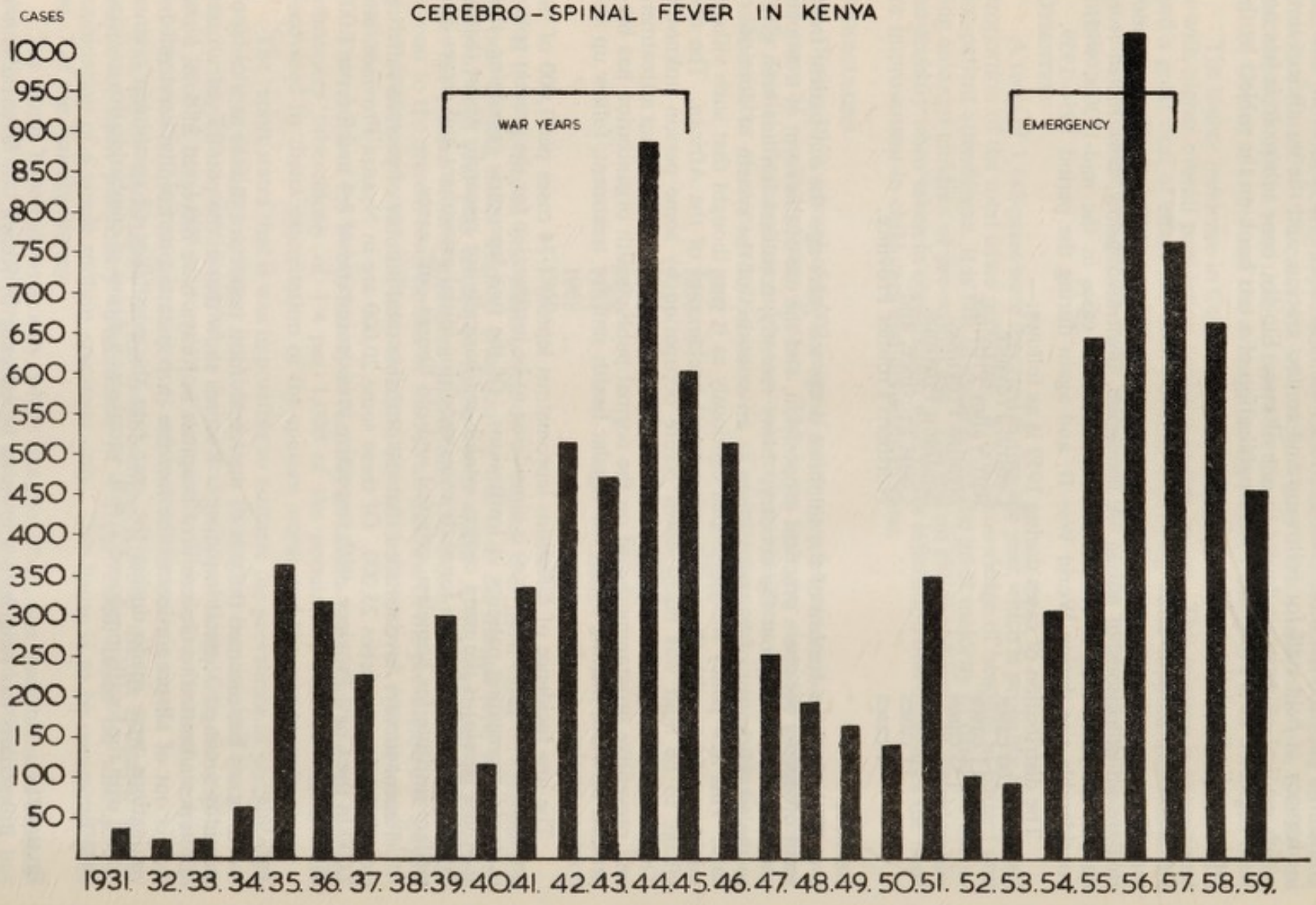
Recent surveys have revealed that the probable total number of persons suffering from leprosy approaches 25,000. Of these some 20,000 are in Nyanza Province, and 2,000 in the Coast Province, with respective prevalence rates of 8·4 and 3·6 per 1,000 of the population.

Tetanus

Tetanus has assumed the role of the fourth most important disease as a cause of mortality amongst hospital in-patients. Records show that in the past 25 years, cases of tetanus admitted to Government hospitals in Kenya have increased 21 fold, a rise that is out of all proportion to the increase in population or hospital services. Investigations were made during the year into the possibility of combining tetanus toxoid with the locally produced T.A.B. vaccine as a means of combating this growing hazard.

Bilharzia

Bilharziasis has long been known to be endemic in Kenya. *S. haematobium* is prevalent mainly along the Coast and in the Tana River valley, Kitui, and Central and South Nyanza districts, whilst the double infections of *S. mansoni* and *S. haematobium* exist in Taveta, Ukumbani, Nairobi and environs, and around the Lake Victoria basin. Indications are that some 15 per cent of the population is probably infected with *S. haematobium* or *S. mansoni*. If irrigation schemes are to become an important feature in the Colony, then bilharzia cannot be ignored.


CEREBRO-SPINAL FEVER IN KENYA
CASES
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
WAR YEARS
EMERGENCY
1931. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59.

There is little evidence at present from morbidity or mortality statistics to indicate that bilharzia is a dangerous infection of economic importance; nevertheless, studies on the distribution, ecology and the practical control of the vectors are being undertaken, particularly in relation to existing and projected irrigation schemes.

Helminthic Disease

During the year further tapeworm eradication campaigns were mounted by the mobile health education unit in conjunction with various local health authorities. This programme, which commenced in 1957, has been steadily pursued, its main objective being to demonstrate to farmers the epidemiology of the disease and simple methods of control.

An outbreak of trichinosis, eight cases in all, occurred amongst tribesmen in the Embu district. This is the first time that trichinosis has been reported south of the Sahara. All the persons affected had previously eaten flesh from two wild forest hogs killed on Mount Kenya. Some of the cases showed as many as 3,000 larvae per gramme of muscle, one child which died had 5,000 trichinella per gramme of muscle.

Hookworm is know to be endemic on the coastal strip and around Lake Victoria. The work of Foy and Kondi demonstrated that the administration of iron can correct the anaemia notwithstanding a continuing infestation by the worm. Therefore, whilst not forgetting the long term measures for improved sanitation and health education, the immediate short term policy has been to foster the consumption of ferrous sulphate distributed in molasses. (The medicated molasses, as a food is very popular, especially with children.)

Malaria

The main effort during the year was directed against a threat of a break through in the previously sprayed area in Nandi district, and towards the control of rural malaria in the peri-urban areas surrounding the port of Mombasa and the coastal holiday resort of Malindi.

Records over the past 18 months have shown a reappearance of malaria at the periphery of the Nandi district, notably in the Kaptumo and Kabiyet areas. The picture has been confused by the appearance of influenza, and the clinical diagnosis at the dispensaries has not proved a reliable guide. Malariometric surveys have had to be reinstituted and show an overall parasite rate of less than 5 per cent in children under the age of 10. Entomological surveys, however, indicate no increase in hut mosquito indices. Present policy is to assess the long term efficacy of the daraprim/dieldrin campaign, but should a serious break through occur, it is proposed to cut short the growth of an epidemic by the mass administration of darachlor.

Wakamba are being resettled in an area known as the Shimba Hills in Kwale district in the Coast Province. The high incidence of malaria in these semi-immune people has been a constant worry. Hut spraying has been ineffective. As an alternative, mass treatment with darachlor was started in December, and the initial results are encouraging.

Control measures within the municipality of Kisumu on Lake Victoria continued to be effective. Only seven Europeans and seven Asians living within the Kisumu Municipality succumbed to malaria in 1959.

Five catching stations were established in the Kano Plains of Central Nyanza district to determine the potential hazard to health should a large scale irrigation scheme be established there. The sporozoite rate in mosquitoes was found to be consistently low, being under 1 per cent. Malariometric surveys were carried out in nine villages adjacent to these catching stations. One thousand and ninety-eight children under the age of 10 years were examined and 527 (48 per cent) were found to harbour the parasite. At two particular villages, Rae-Ayeyo and Awari, the rates were 28 and 31 per cent, these figures should be compared with rates of 75 and 85 per cent found twenty years ago. This fall in parasite rates may be the result of the widespread sale and use of anti-malarial drugs, notwithstanding the continued presence of a large population of vector mosquitoes.

KALA-AZAR

Search for a vector and work on the production of a vaccine continued during the year. The vaccine is being prepared from a parasite apparently identical with *L. donovani*, isolated from gerbils (*Tatera* sp.) in the Rift Valley, and demonstrated to have a low level of pathogenicity.

The history, clinical aspects and epidemiology of kala-azar in Kenya have been thoroughly investigated and reported on in numerous publications. Briefly, from being an endemic disease confined to the Northern Frontier Province, it has become prevalent over the last ten years, in a wide strip of land passing from north-west to south-east, across the foothills of the Highlands. The places involved are South Turkana, West Suk, Elgeyo-Marakwet, Baringo, Meru, Kitui and the Machakos districts.

In the Kitui area, after a slow build up from 1946, an epidemic occurred in 1952, rising to a peak of nearly 2,000 reported cases in 1953, and declining to a high endemic incidence of 200 cases a year. During the year a field survey was mounted in the Tharaka area of Meru district, where a focus of the disease was thought to exist. This area is on the northern bank of the Tana River, contiguous with the Tharaka/Tseikuru locations of Kitui district. A total of 83 cases were found, giving a prevalence rate of 7·4 per 1,000 of population examined. An intensive treatment campaign has subsequently been mounted.

SLEEPING SICKNESS

The incidence of human sleeping sickness in Kenya has steadily fallen from 117 cases in 1950 to 38 in 1959. Complete success in the control of *G. palpalis* and the gambiense form of human sleeping sickness is in sight, provided that sufficient finance can be made available. However, there is little room for complacency since the rhodesiense form of the disease carried by *G. pallidipes* has been reported from the western borders of the territory, and unless adequate control measures are vigorously pursued, this more serious type of the disease may spread inwards from Uganda. An experimental attempt has been made to control *G. pallidipes*, the responsible vector for this and the cattle disease, on Sikiri promontory on the South Nyanza shores of Lake Victoria. Traces, 200 yards apart, have been cut in the bush and this has been sprayed from the paths with dieldrin insecticide. Results have been promising and the fly density has fallen from 188 to 1·8 catches per man hour. An extension of this cheap and effective method of control is planned on the mainland in those parts of the country where the risk of spread of rhodesiense infection from over the border is the greatest.

FILARIASIS, ETC.

Human and entomological investigations by the Division of Insect-borne diseases during the year have shown that although *Culex fatigans* is an important vector of *W. bancrofti* in the northern part of the Kenya Coast, *A. gamboae* and *A. funestus* are the more important vectors further south. The infection rate in the human population seems to be in the region of 20 per cent in certain parts of the coastal strip. Control measures by drug prophylaxis and elimination of the vector continue.

With regard to onchercerciasis, surveys reveal that *S. neavei* is still absent from all the previously infested, but treated areas in Nyanza and the Rift Valley Provinces. Only a small part of Kenya on the Uganda border, near Mount Elgon remained infested. The South Nyanza district has now been free of *S. neavei* for seven years and North Nyanza for four years. A census of the blind has recently been undertaken in Nyanza Province, and the first report from Kericho has revealed that out of some 200 blind persons, whose disability can be ascribed to onchercerciasis, only six were children under the age of 10. Apart from the observed absence of the responsible vector, this last evidence is a good indication that the disease has been brought under control, if not eradicated.

PERSONAL SERVICES

A private general practitioner and consultant service exists in most of the larger towns, whilst all except a very few of the smaller towns have each their own handful

of private general practitioners. Patients unable to pay the fees of private doctors are catered for by an extensive network of dispensaries, health centres and state hospitals, where treatment can be obtained for a nominal charge.

Out-patient Services

In the rural areas, dispensaries and health centre services are supplied by local authorities, supplemented to a varying extent by mission medical services. The development by local authorities of comparable services in urban areas has been retarded by the presence of Government hospitals. The City of Nairobi is the only urban authority which has accepted full responsibility for providing an out-patient service, although the Municipality of Nakuru has accepted this responsibility to a lesser degree. The development in Nairobi has made it possible for the Government to concentrate upon the provision of a consultant and specialist service for out-patients referred to its special clinics from the municipal dispensaries.

Fees for the out-patient service vary from area to area, but in no case do they exceed more than a few shillings. The ruling charges at the Government hospital out-patient departments are Sh. 3 for an adult for a week's attention and Sh. 1 for a child. A patient can command any form of out-patient attention such as clinical consultation, treatment, laboratory investigation and fluoroscropic examination.

The payment of fees for treatment at Government hospitals was started in 1957 and resulted in an immediate fall in the number of attendances, though this would appear to have been mainly due to a falling off of those who considered their market day incomplete without a visit to the hospital. Attendances during 1959 were the highest since fee-collection started, demonstrating a "rebound" phenomenon whose trend is illustrated by the following series of figures for annual out-patient attendances for the years 1957–1959.

NEW AFRICAN OUT-PATIENT ATTENDANCES

1957	991,454
1958	894,411
1959	992,652

In-patient Services

As stated earlier, the urban areas are well supplied with private practitioners, whilst the hospital needs of their patients are adequately catered for in private hospitals and nursing homes. In Nairobi there are two private general and two maternity hospitals, with an overall number of 404 beds. In the provincial and other main urban centres, there are another 276 beds in private general hospitals of varying size.

A number of the large plantations and commercial concerns operating in rural areas have built hospitals for their labour. The total number of beds provided in this way amount to 225. A hospital service is supplied by missions of all religious denominations and these are mainly to be found in the rural areas. Beds are available to patients of all races, although the majority of patients seeking admission are Africans. There are some 40 mission hospitals with 2,241 beds.

The State hospital service is closely organized and intergrated, possessing a high grade general and consultative hospital which is the King George VI Hospital in Nairobi, supported by four provincial hospitals, and those in their turn supported by 32 main district and 21 subordinate hospitals. The number of beds in Government hospitals is 6,659. There is a combined infectious diseases and tuberculosis hospital at Port Reitz near Mombasa, with a bed complement of 200.

The service in Nairobi consists of a general hospital, an infectious diseases hospital which contains a poliomyelitis and respiratory wing, an orthopaedic rehabilitation centre, and the main colony mental hospital. There is a staff of specialists who naturally attract to Nairobi patients with a wide range of the more complicated or obscure diseases. The general hospital, King George VI Hospital, has, in addition to its Government specialists, a number of private consultants serving in an honorary capacity and provides post-graduate experience to doctors filling registrar appointments and to others serving their prescribed pre-registration internships.

Each of the provincial hospitals has on its staff a medical officer with a higher qualification in medicine and a second with a higher qualification in surgery, whilst two in Mombasa and Nakuru, benefit from the visits of honorary consultants. These hospitals not only serve as district hospitals for their own areas, but also receive cases referred from Government district and mission hospitals. Local health authorities are responsible for the provision of institutional maternity services. They usually take the form of ward units within Government hospitals, but there are two independent public maternity hospitals, managed by the municipalities of Nairobi and Mombasa, having 75 and 51 beds respectively.

The number of African patients admitted annually to Government hospitals has remained virtually unchanged over the past three years and the figure of just over 150,000 represents the maximum capacity for which the existing hospitals can conveniently cater. The charge for admission to state hospitals is an inclusive fee of Sh. 15 in respect of King George VI Hospital, Nairobi, and the Coast Province General Hospital, Mombasa, and of Sh. 10 in respect of all other hospitals. A considerable degree of subsidy is necessary to make such low fees possible as the actual average cost for hospital and medical attention in a district hospital is approximately Sh. 15 *per day*.

Members of the European community are required by law to pay a special hospital tax which is used to reimburse patients for the cost of their hospital charges at a fixed rate which stands at Sh. 55 per day. Legislation was approved in 1959 which will entitle Asian and Arab patients to a similar form of assistance as from 1st January, 1960.

Of the 224 listed causes of morbidity (*see* statistical appendix at the end of the report) 20 diseases or conditions were responsible for 50 per cent of all admissions. These are listed below in order of importance relative to the numbers of admissions:—

Normal Labour	12,038	
Broncho-pneumonia	7,089	
Acute Bronchitis	6,021	
Sub-tertian malaria	5,564	
Laceration and Open Wounds	5,509	
Respiratory Tuberculosis	4,975	
Local Pneumonia	4,904	
Gastro-enteritis	4,384	(Over 4 weeks and under 2 years of age.)
Fractured Limbs	3,458	
Abortions	3,142	
Influenza	2,455	
Gastro-enteritis	2,430	(Over 2 years of age.)
Measles	2,262	
Chronic Bronchitis	2,054	
Infections of the Skins and Subcutaneous Tissues	2,035	
Primary atypical and unspecified pneumonias	1,994	
Whooping-cough	1,887	
Bacilliary Dysentery	1,872	
Acute Upper Respiratory Infections	1,861	
Contusions	1,841	

The preponderance of admissions for respiratory and gastro-intestinal infections and the relative unimportance of tropical diseases in hospital in-patient practice will be noticed. Many tropical diseases are amenable to control without the full co-operation of the individual, but only successful personal education in preventive health measures can now be expected to have any material effect on the number of patients needing hospital treatment.

The total of African deaths occurring in Government hospitals was 7,784 and the mean case mortality rate 5·17 per cent. The eleven main causes of death accounted for 3,959 or more than 50 per cent of all deaths. These eleven main causes are listed below:—

	No. of Admissions	No. of Deaths	Case Mortality Rate
			%
Broncho-pneumonia	7,089	1,252	18
Gastro-enteritis (Over 4 weeks and under 2 years of age)	4,384	576	13
Respiratory Tuberculosis	4,975	545	11
Tetanus	707	327	46
Kwashiorkor	1,334	308	23
Lobar pneumonia	4,909	266	5
Gastro-enteritis (Over 2 years of age)	2,430	187	8
Burns	1,717	146	8·5
Subtertian Malaria	5.564	127	2
Chronic and unqualified bronchitis	2,054	114	5·5
Intestinal Obstruction and Hernia	1,047	111	10·5

This table demonstrates clearly the importance of broncho-pneumonia, gastro-enteritis and kwashiorkor as causes of mortality in early childhood. It is surprising to note that tetanus is the fourth most important cause of mortality.

Laboratory Services

Apart from Nairobi, where a private laboratory of clinical medicine has been established for several years, the only laboratory service available in the country is that provided by the Government. Routine clinical laboratories are attached to provincial hospitals but the more intricate and difficult investigations have to be referred to the main laboratory in Nairobi. The Medical Research Laboratory in Nairobi also has a section for vaccine production. A proportion of these vaccines is exported to other East African territories and a table is set out below giving details of production and issues in 1959.

VACCINE PRODUCTION—1959

	Prepared	Issued in Kenya	Sold to Other Territories	Total Issues
Vaccine Lymph (doses)	4,446,500	1,063,776	4,036,560	5,100,336
Anti-typhoid para-typhoid vaccine (mls.)	498,185	341,335	41,340	382,675
Anti-rabic vaccine (mls.)	62,600	33,440	26,400	59,840
Anti-plague vaccine (mls.)	47,600	42,190	Nil	42,190
Standard Agglutinable Suspensions (mls.)	69,000	69,000	Nil	69,000
Sour Milk cultures	119	97	Nil	97
Old Tuberculin 1/100, 1/1,000 and 1/10,000 (doses)	99,800	95,220	300	95,520

REVENUE EARNED BY SALE OF VACCINE TO OTHER TERRITORIES

Territory	Vaccine Lymph.	T.A.B. Vaccine	Anti-Rabic Vaccine	Total
	£	£	£	£
Tanganyika	3,153	456	50	3,659
Uganda	2,400	726	66	3,192
Zanzibar	84	51	Nil	135
British Somaliland	419	1	276	696
East Africa Command	1	5	48	54
TOTALS .. .. ..£	6,057	1,239	440	7,736

Difficulties have been experienced with regard to staff as the output of trained laboratory assistants is never sufficient to meet the need and it has recently been found necessary to train a new type of technician known as a microscopist. The period of training is short, six months in all. Microscopists are being used to fill gaps in the existing service in district and subordinate hospitals and to perform duties in connexion with specific projects such as the domiciliary treatment of tuberculosis for which a limited knowledge only is required.

The Medical Research Laboratory is also concerned with the organization of the blood transfusion service throughout the country. During the year, the Assistant Director of Laboratory Services prepared a set of very detailed instructions on safe techniques for blood transfusion, including the proper management of blood banks. The Nairobi Blood Bank Service handled 5,146 pints of blood in the year. Bloods examined revealed occurrences of Rh. negativity of 12·8 per cent in Europeans, 7·5 per cent in Africans and 4·6 per cent in Asians.

Radiological Services

An X-ray service has been available at Nairobi and at four of the provincial centres for many years. This service was extended to Kisii, Machakos and Kiambu district hospitals in 1959, with the assistance of the United Nations Children's Fund. The Government itself established a mobile unit to operate at district hospitals on a circuit in the neighbourhood of Nairobi, and used mainly for the diagnosis of cases of tuberculosis. This mobile unit is equipped with a powerful apparatus which enables miniature 100 mm. films to be taken, using a camera attachment.

The large number of cases of pulmonary tuberculosis being diagnosed in Kenya has determined the policy to purchase as many 100 mm. cameras as funds permit. Although the initial capital cost is heavy, the recurrent savings are considerable, and four such cameras, including the one in the mobile unit are now in use.

It is difficult to determine the degree to which the radiological services will grow both with regard to size and complexity. All modern techniques are practised in the X-ray department of the King George VI hospital, and the latest acquisitions have been a Schonänder tube carriage and an electron image intensifier. This latter machine has been acquired for research purposes on epiphyseal growth, but has great and convenient potentialities for use in the casualty clinics.

In conclusion it is to be remarked that the X-ray department at the King George VI hospital processes a greater number of exposed films in a year than a major London hospital. The department is under the charge of one medical officer (radiologist), assisted by one visiting consultant radiologist.

ADMINISTRATION

Development Programme

In Nairobi a considerable building programme was in progress during the year. At King George VI hospital at the end of the year work was proceeding on a project costing £7,500 to rebuild the Sterile Preparation Unit. This should render the unit more safe and efficient as well as enabling it to compete with the steadily increasing

demands made on it from all over Kenya. Work had also started on improvements to the Ismail Rahimtulla Wing of the King George VI hospital. An entirely new kitchen is under construction and a lift is being installed to serve the three floors. As a temporary measure the top floor, which is not being used for ward accommodation, has been converted into accommodation for interns. Steam cooking has been installed at both Mathari Hospital and the Infectious Diseases Hospital.

The expansion and replanning of the Wellcome Library financed by a generous gift of £10,000 from the Wellcome Trust started in the middle of the year. An extension to the laboratories on the first floor over the library, financed from loan funds, formed part of this project which was well advanced at the end of the year.

Twenty-six high grade flats were completed for African staff. Twenty-one flatlets for senior female staff were almost ready for occupation at the end of the year, and at Mathari, six quarters for mental nurse trainees were nearly complete.

The most important work outside Nairobi was the rebuilding of Port Reitz Hospital at an estimated cost of £36,000. All the war-time temporary wards are being replaced with permanent concrete structures designed to give maximum ventilation. The layout will be greatly improved and steam cooking will be installed. The hospital should be completed by about the middle of 1960.

At the Coast Province General Hospital three new houses for medical officers and the conversion of the old European ward of the former Infectious Diseases Hospital to sisters flats were completed. Conversion of the sisters mess into flats was progressing. Another ward block was completed here, but not finally taken over from the contractors by the end of the year.

New X-ray departments at Kisii, Wesu, Kiambu and Machakos were built. An X-ray machine was installed at Tambach. At Machakos, Moyale and Tambach new operating theatres were built and new isolation wards were provided at Bungoma and Wajir.

Institutional staff housing was built or improved in 24 stations at a total cost of £42,641. This does not include housing financed from C.D.W. schemes. Housing built by the Nairobi County Council was taken over at Embakasi and will be paid for during the next development period.

A capital grant on a £ for £ basis was made to the Social Service League for modernization and extension to the Lady Grigg Indian Maternity Hospital in Nairobi. A new nurses home was added to enable a high standard of training of midwives to be instituted. Further grants were made to assist the European hospitals at Kitale, Nanyuki and Nyeri. Some small assistance by way of proportionate capital grant was given to mission hospitals to improve their hospital facilities.

Training

The Medical Training Centre's new buildings are proving very satisfactory and lawns and gardens have now been laid out. The following numbers of students were in training at the end of the year:—

Hospital Assistants:	
Male	122
Female	20
Dressers:	
Male	7
Female	19
K.R.N.'s:	
Male	7
Female	20
Radiographers:	
Male	6
Female	1
Dark Room Assistants	6
Laboratory Assistants	20
Dispensers	21
Reablement Assistants	2
Assistant Health Inspectors	17

In addition to the normal courses, post graduate training of hospital assistants was given in anaesthetics, dentistry, and orthopaedic reablement. The Officer in charge Health Education provided several short concentrated courses of lectures on his subject and suited to the calibre of his students, for assistant health inspectors, hospital assistants, community development assistants, medical officers, health inspectors and agricultural and veterinary officers.

Lectures on medicine and surgery were given to residents and registrars of the King George VI Hospital in the school lecture threatre. The lecture theatre is also constantly used for meetings of professional bodies such as the British Medical Association, Society of Medical Officers of Health and Association of Surgeons. Two lay lecturers' courses for the St. John Ambulance Brigade were held in the School during the year.

The training of assistant health visitors continued at Embu and Kisumu. Owing to the lack of sufficient suitable candidates, already qualified as assistant nurses and/or assistant midwives, it has been necessary to revert to a two-year training course for unqualified candidates at Kisumu. The one year course for candidates with a previous qualification continues at Embu. Now that the number of girls training as assistant nurses has considerably increased it should soon be possible for both schools to provide the one year course only.

At Embu four students entered for the final examination and all were successful. Ten new students entered the school in November, 1959. It is hoped from 1960 to have two entries a year into this school. At Kisumu there are now two entries of students each year. Ten students are in training and five of these will take the final examination early in 1960. The results of the training programme carried out in the departmental schools are illustrated in the table below showing the numbers of students who qualified in 1959.

NUMBER OF STUDENTS QUALIFIED IN 1959:—

Kenya Registered Nurses	2
Hospital Assistants	27
Assistant Nurses	135
Dispensers	9
Laboratory Assistants	7
Assistant Radiographers	—
Dark Room Assistants	2
Assistant Health Inspectors	6
Health Assistants	33
Assistant Health Visitors	4

Recruitment

There was again an acute shortage of medical officers during the early part of the year, but the situation progressively improved and by the end of the year the establishment was up to strength. Recruitment of other posts in the Medical Department proceeded satisfactorily with the exception of sister tutors. It proved impossible to fill any of the existing five vacancies.

The enrolment of nursing sisters was maintained during the year and no difficulty was experienced in ensuring a steady flow of new staff. Twenty-four contract nursing sisters were engaged in addition to two new psychiatric nursing sisters. The number of health visitors in employment remained at 11, but recruits were coming forward satisfactorily by the end of the year. Four posts for health inspectors were filled and a further three candidates were interviewed. The arrival of new staff in this category, however, hardly sufficed to make up the deficiencies created by resignations and retirement. It can never ever be said that the Medical Department has all the staff it requires and consideration of finance rather than difficulties in recruitment were responsible for the limitations that had to be endured. The radiological and laboratory services were the two divisions that suffered most from the lack of staff during the year.

Finance

The gross total expenditure of the Medical Department (excluding capital development expenditure) during the period 1st July, 1958 to 30th June, 1959 amounted to £2,108,148. This figure includes the cost of medical services rendered to the High

Commission Services, the salaries of departmental staff seconded to Local Authorities, and the cost of medical stores purchased for resale to local authorities and missions.

The following is a comparison of expenditure under the main subheads during the year 1957/58 and 1958/1959:—

EXPENDITURE

Year Ending 30th June, 1958 £		Year Ending 30th June, 1959 £
1,114,418	Personal Emoluments	1,158,909
—	House Allowance	24,908
73,764	Travelling Expenses	79,406
298,496	Medical and Surgical Stores and Equipment	361,535
147,919	Maintenance and Upkeep of Medical Establishments	150,361
138,786	Grants-in-Aid	74,767
88,199	Contribution to Development Fund—Medical Training School	28,898
7,294	X-ray Equipment	7,328
124,351	Miscellaneous Other Charges	140,280
17	Compensation and Ex gratia Payments	1,332
14	Losses of Cash	143
93,639	Medical Training School	80,281
£2,086,897		£2,108,148

Revenue received during the year was as follows:—

REVENUE

£		£
	CAPITATION FEES—	
12,832	East Africa High Commission	12,843
59,603	East African Railways and Harbours	55,577
10,858	E.A. Posts and Telecommunications Administration	14,514
—	East African Land Forces Organization	1,345
214	Miscellaneous	296
	FEES FOR SERVICES RENDERED—	
118,958	Hospitals and Dispensaries	117,245
6,060	X-rays	5,470
311	Massage and Physiotherapy	360
15,535	Laboratory	16,584
	SALE OF STORES AND OTHER MATERIALS—	
76,766	Stores and Equipment	89,893
928	Artificial Limbs	2,623
240	Health Education Materials	760
322	Occupational Therapy Products	273
	REIMBURSEMENTS—	
94,199	International Co-operation Administration	28,898
9,121	Learners for Boarding Fees	5,619
726	Rations	763
7,932	Public Health Authorities—Staff Seconded	15,045
36,139	Public Health Authorities—Health Services	80,213
17,281	MISCELLANEOUS	7,151
£468,025	TOTAL	£455,472

Of the revenue collected £444,200 was applied as Appropriations-in-Aid, leaving a net expenditure for the Medical Department of £1,663,948. Net expenditure for the previous year amounted to £1,653,389.

Visitors

The following visitors from overseas were received and were shown various aspects of the work of the department:—

Professor H. J. Seddon, C.M.G., F.R.C.S., Colonial Office Medical Visitor.

Professor J. McMichael, F.R.S., M.D., F.R.C.P., London Post Graduate Medical School.

Hon. J. Croot, Minister for Health, Uganda.

Mr. M. de N. Ensor, Secretary F.A.M.A. (Foundation of Mutual Assistance in Africa), C.C.T.A.

Mr. L. Orihuela, W.H.O. Regional Adviser in Environmental Sanitation.

Dr. R. V. Marti and Dr. Y. D. Pierret, of U.N.I.C.E.F. (Chief Area Representatives).

Dr. H. P. Junod, International Committee of the Red Cross.

Dr. C. Slome, W.H.O.

Dr. K. Sinclair-Loutit, W.H.O. Medical Adviser.

Dr. E. E. Claxton, B.M.A., London, W.C.1.

Dr. P. Hugh Jones, Post Graduate Medical School, London.

Professor P. C. C. Garnham, London School of Hygiene and Tropical Medicines.

Professor A. Williams, Makerere College Medical School.

Dr. J. Pepys, Medical Research Council, London.

Dr. R. B. Kerr, Head of Department of Medicine, Vancouver General Hospital, Sims Commonwealth Travelling Professor.

Dr. A. C. Allison, National Institute for Medical Research, Mill Hill.

Dr. J. H. Strahan, Chief of the Public Health Education and Training Section, W.H.O., Geneva.

Dr. D. A. Mitchison, Medical Research Council, London.

Dr. Finch, Washington University, Seattle, U.S.A., W.H.O. Consultant.

Dr. H. Halbach, W.H.O., Geneva (Addiction Producing Drugs Section).

Dr. A. C. Saenz, W.H.O., Geneva.

Dr. Finch, Washington University, Seattle.

Dr. G. R. Garcin, W.H.O./U.N.I.C.E.F., New York, U.S.A.

Miss L. Bell, Nursing Adviser to W.H.O., Brazzaville.

Dr. D. L. Davies, Institute of Psychiatry, Maudsley Hospital, Denmark Hill, S.E.5.

Dr. O. J. S. Macdonald, Ross Institute, London.

Dr. F. W. Lowenstein, W.H.O., Geneva.

Dr. P. Winter, Poliomyelitis Research Foundation, Johannesburg.

Professor G. Macdonald, London School of Hygiene and Tropical Medicine.

Dr. N. M. Sinha, Assistant Director of Health Services, West Bengal, W.H.O. Fellow.

Professor D. B. Jelliffe, Paediatric Unit, Medical School, Makerere College.

Dr. D. J. Lewis, Medical Research Council, U.K.

Publications

Articles Published by the Staff of the Ministry of Health, 1959

Allen, E. F., Cruikshank, A. and Whittaker, L. R.—"Blood Counts in Relation to African X-ray Staff." *E.Afr.Med.J.* Vol. 36, p. 274.

Ang'awa, J. and Haynes, W. S.—"Prednisone in the Treatment of Patients with Pulmonary Tuberculosis at Port Reitz Chest Hospital, Mombasa." *E.Afr.Med.J.* Vol. 36, p. 147.

Clifford, P.—"The Deaf Child." *E.Afr.Med.J.* Vol. 36, p. 434.

Connel, J. and Whittaker, L. R.—"Lymphangiography in Experimental Animals." *E.Afr.Med.J.* Vol. 36, p. 264.

Cooke, E. R. N.—"Human Cryptococcosis in Kenya." *J.Trop.Med. and Hyg.* Vol. 62, p. 178.

Cooke, E. R. N.—"Infection in our Hospitals." *E.Afr.Med.J.* Vol. 36, p. 372.

Fendall, N. R. E.—"Housing, Health and Happiness." *E.Afr.Med.J.* Vol. 36, p. 473.

Foster, R. M.—"Carcinoma of the Bronchus." *E.Afr.Med.J.* Vol. 36, p. 278.

Grattan, E., Ahmed, A. and Templer, M. J.—"Surgical Treatment of Constrictive Pericarditis in Africans." *E.Afr.Med.J.* Vol. 36, p. 549.

Grattan, E.—"Wound Infection in Major Chest Surgery." *E.Afr.Med.J.* Vol. 36, p. 386.

Grounds, J. G.—"Population Structure and Vital Statistics of a Rural Area in Kenya." *E.Afr.Med.J.* Vol. 36, p. 644.

Hall, L.—Case Report: "Two Cases of Gout Among the Kikuyu." *E.Afr.Med.J.* Vol. 36, p. 616.

Hall, L.—"A Case of Sickle Cell Disease in Kenya." *E.Afr.Med.J.* Vol. 36, p. 268.

Haynes, W. S.—"Purpura after Chlorpromide." *Brit.Med.J.* 2, 19th December, 1959, p. 1403.

Heisch, R. B.—"Is the Rat (*Rattus rattus*) Ever a Permanent Reservoir of Plague?" *Brit.Med.J.* 2, 19th December, 1959, p. 1385.

Heisch, R. B. and Grainger, W. E.—"Rodent Plague in the Nyeri District of Kenya." *J.Trop.Med. and Hyg.* Vol. 62, p. 211.

Heisch, R. B., Grainger, W. E. and Harvey, A. E. C.—"The Isolation of a Leishmania from Gerbils." *J.Trop.Med. and Hyg.* Vol. 62, p. 1589.

Heisch, R. B. and Harvey, A. E. C.—"Rickettsioses in Kenya: Serological Reactions of Wild Rodents and Inoculated Guinea Pigs." *E.Afr.Med.J.* Vol. 36, p. 116.

Heisch, R. B. and McPhee, R.—"Notes on Some Ixodid Ticks in the Nairobi Area." *E.Afr.Med.J.* Vol. 36, p. 187.

Heisch, R. B., Nelson, G. S. and Furlong, M.—"Studies in Filariasis in East Africa." *Trans.Roy.Soc.Trop.Med. and Hyg.* Vol. 53, p. 41.

Jacob, G., MacDougall, L. G. and Davies, P.—"Rhesus Sensitization in Kenya Africans." *J.Trop.Pediat.* Vol. 5, p. 22.

Jenkins, A. R., Robertson, D. H. H. and Manson-Bahr, P. E. C.—"Serum Proteins in East African Kala-azar." *Ann.Trop.Med.Parasit.* Vol. 53, p. 93.

Kent, P. W.—"Tuberculosis—A Social Disease." *E.Afr.Med.J.* Vol. 36, p. 649.

Kirkaldy-Willis, W. H.—"The Development of the Science and Art of Surgery in East Africa." Presidential Address. *E.Afr.Med.J.* Vol. 36, p. 341.

KIRKALDY-WILLIS, W. H.—"Preventive Surgery in Kenya. (The Fibroblast as Friend and as Foe)." *E.Afr.Med.J.* Vol. 36, p. 167.

MACDOUGALL, L. G. AND BEECHER, J. L.—"Pneumonia in African Children. A Clinical Bacteriological and Radiological Study." *E.Afr.Med.J.* Vol. 36, p. 36.

MANSON-BAHR, P. E. C.—"East African Kala-azar with Special Reference to Pathology, Prophylaxis and Treatment." *Trans. Roy. Soc.Trop.Med. and Hyg.* Vol. 53, p. 123.

MANSON-BAHR, P. E. C.—"The Story of Filaria Bancrofti." (In five parts). *J.Trop. Med. and Hyg.* Vol. 62, pp. 53–61, 85–94, 106–117, 138–145 and 160–173.

MANSON-BAHR, P. E. C., HEISCH, R. B. AND GARNHAM, P. C. C.—"Studies in Leishmaniasis in East Africa. IV The Montenegro Test in Kala-azar in Kenya." *Trans.Roy.Soc.Trop.Med. and Hyg.* Vol. 53, p. 380.

MARGETTS, E. L.—"Acute Idiopathic Porphyria: Abdominal Pain, Convulsions and Agitated Depression." *E.Afr.Med.J.* Vol. 36, p. 656.

MARGETTS, E. L.—"Camptocormie and Folie a Deux in two African Natives." *E.Afr.Med.J.* Vol. 36, p. 257.

NELSON, G. S.—"Schistosoma Mansoni Infection in the West Nile District of Uganda." *E.Afr.Med.J.* Vol. 36, p. 29.

NEVILL, L. M. B. AND COOKE, E. R. N.—"Human Cryptococcosis in Kenya." *E.Afr. Med.J.* Vol. 36, p. 209.

PORTSMOUTH, O. H. D. AND O'COLMAN, C.—"A Case of Shock Following Myocardial Infarction Treated with L–Noradrenaline." *E.Afr.Med.J.* Vol. 36, p. 277.

SCOTT, G. R. AND HEISCH, R. B.—"Rift Valley Fever and Rift Valley Rodents." *E.Afr.Med.J.* Vol. 36, p. 665.

SOOD, B. K.—"Three unusual Cases of Ruptured Ectopic Pregnancy." *E.Afr.Med.J.* Vol. 36, p. 500.

STOTT, H.—"Tuberculosis Prevalence Survey in Nairobi." *Chest and Heart Bulletin.* Vol. 22, p. 38.

TIMMS, G. L., HEISCH, R. B. AND HARVEY, A. E. C.—"Further Evidence that Rhipicephalus Simus Koch is a Vector of Tick Typhus in Kenya." *E.Afr.Med.J.* Vol. 36, p. 114.

TURNER, P. P.—"A Severe PAS Hypersensitivity Reaction Controlled by Prednisolone." *E.Afr.Med.J.* Vol. 36, p. 164.

TURNER, P. P.—"A Case of Cryptococcosis with Choroidal Torulomata." *E.Afr. Med.J.* Vol. 36, p. 220.

TURNER, P. P.—"Pulmonary Haemosiderosis in Mitral Stenosis." *E.Afr.Med.J.* Vol. 36, p. 449.

TURNER, P. P.—"The Electrocardiogram in Fifty Normal Young Adult Kikuyu Males." *E.Afr.Med.J.* Vol. 36, p. 555.

TURNER, P. P. AND HURLEY, D. W. H.—"Cushing's Syndrome Treated by Bilateral Subtotal Adrenalectomy." *E.Afr.Med.J.* Vol. 36, p. 314.

WHITTAKER, L. R.—"Radiological Diagnosis of the Acute Pneumonia in Children." *E.Afr.Med.J.* Vol. 36, p. 200.

RETURN OF DISEASES—OUT-PATIENTS, 1959

Code	Diseases	European			Asian			African		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
	Infectious and Parasitic Diseases									
001–008	Respiratory Tuberculosis	15	5	20	512	276	788	5,556	4,161	9,717
010–019	Other Tuberculosis	1	—	1	2	2	4	1,122	636	1,758
020–029	Syphilis	—	—	—	6	—	6	2,320	1,675	3,995
030–035	Gonorrhoea	3	—	3	9	1	10	11,558	4,846	16,404
036–039	Other Venereal Diseases	—	—	—	—	—	—	1,194	570	1,764
045	Bacillary Dysentery	67	59	126	69	71	140	4,454	2,411	6,865
046	Amoebic Dysentery	13	10	23	27	23	50	1,892	1,017	2,909
055	Diphtheria	1	—	1	—	—	—	120	39	159
056	Whooping-cough	6	23	29	6	20	26	4,357	4,083	8,440
057, 340	Meningitis (excluding Tuberculosis)	1	—	1	—	—	—	102	77	179
058	Plague	—	1	1	—	—	—	11	—	11
060	Leprosy	—	—	—	—	—	—	786	285	1,071
061	Tetanus	—	—	—	—	—	—	264	199	463
062	Anthrax	2	—	2	—	—	—	237	193	430
071	Relapsing Fever	1	—	1	—	—	—	23	14	37
073	Yaws	—	—	—	—	—	—	1,457	1,090	2,547
080	Acute Poliomyelitis	—	—	—	—	—	—	89	79	168
084	Variola Major	—	—	—	—	—	—	3	6	9
084	Variola Minor	—	3	3	—	—	—	45	36	81
085	Measles	32	55	87	22	29	51	4,170	3,917	8,087
086	Rubella	1	4	5	3	6	9	6	5	11
087	Chicken Pox	39	58	97	28	10	38	1,646	1,127	2,773
088	Herpes Zoster	7	8	15	15	5	20	616	371	987
089	Mumps	7	15	22	22	16	38	736	578	1,314
092	Infectious Hepatitis	17	9	26	2	1	3	271	221	492
095	Trachoma	1	—	1	75	24	99	2,710	2,125	4,835
110	B. T. Malaria	2	3	5	—	1	1	548	79	627
111	Qt. Malaria	52	16	68	—	1	1	201	123	324
112	S.T. Malaria	—	—	—	30	13	43	11,613	7,543	19,156
115	Blackwater	—	—	—	—	—	—	1	—	1
121	Trypanosomiasis	—	—	—	—	—	—	24	8	32
120.0	Schistosomiasis (Haematobium)	—	—	—	2	1	3	2,901	1,474	4,375
123.1	Schistosomiasis (Mansoni)	4	3	7	1	—	1	537	405	942
126	Tapeworm	3	7	10	—	—	—	6,915	3,929	10,844
127	Onchocerciasis	3	5	8	—	—	—	162	93	255
129	Ankylostomiasis	2	—	2	8	4	12	2,676	1,949	4,625
130.0	Ascariasis	2	1	3	18	10	28	5,382	5,205	10,587

RETURN OF DISEASES—OUT-PATIENTS, 1959—(*Contd.*)

Code	Diseases	European			Asian			African		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
	Infectious and Parasitic Diseases—(*Contd.*)									
131	Tinea	69	57	126	24	14	38	1,990	1,244	3,234
135	Scabies	1	—	1	5	4	9	5,897	4,346	10,273
N.O.S. 036–138	Other Infective and Parasitic Diseases	86	64	150	299	29	328	6,817	3,481	10,298
	New Growths									
140–205	Malignant Neoplasms	9	1	10	6	5	11	524	396	920
210–239	Benign and other Neoplasms	61	79	140	22	6	28	623	463	1,086
	Allergic Metabolic and Blood Diseases									
241	Asthma	34	43	77	121	103	224	2,311	1,128	3,439
286.6	Kwashiorkor	—	—	—	1	—	1	2,399	1,986	4,385
290–293	Anaemia	8	90	98	61	104	165	1,701	2,129	3,830
N.O.S. 240–299	Other Allergic, Endocrine, Metabolic and Nutritional Diseases	159	179	338	219	143	362	2,678	1,869	4,551
	Diseases of Nervous System and Sense Organs									
300–326	Mental Disorder	63	75	138	45	50	95	939	533	1,472
353	Epilepsy	2	6	8	6	3	9	457	239	696
N.O.S. 330–369	Other Diseases of the Nervous System and Sense Organs	164	254	418	153	102	255	3,024	1,346	4,370
	Diseases of Eye and Ear									
370	Conjunctivitis and Ophthalmia	168	160	328	368	197	565	20,412	13,891	34,303
373	Stye	39	29	68	111	41	152	2,091	1,369	3,460
389	Blindness	3	1	4	8	2	10	627	285	912
N.O.S. 371–388	Other Diseases of Eye (not Trachoma)	158	165	323	156	69	225	3,731	1,868	5,599
390–398	Diseases of Ear and Mastoid Process	475	276	851	297	199	496	9,246	6,900	16,146
	Circulatory Diseases									
400–447	Diseases of the Heart	26	14	40	13	16	29	529	405	934
450–468	Other Circulatory Diseases	136	125	261	80	102	102	1,444	451	1,895

RETURN OF DISEASES—OUT-PATIENTS, 1959—(*Contd.*)

Code	Diseases	European			Asian			African		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
	Respiratory Disease									
490–493	Pneumonia	19	14	33	41	26	67	9,268	8,075	17,343
N.O.S. 470–527	Other Diseases of the Respiratory System (including Coryza, Pharyngitis and Bronchitis)	1,936	2,301	4,237	6,132	2,852	8,984	119,257	77,151	196,408
	Alimentary Diseases									
530–535	Dental Caries–Other Disease of Teeth and Gums	86	86	172	169	97	266	13,238	8,029	21,267
537	Glossitis	2	1	3	4	1	5	589	235	824
536–538	Stomatitis and Other Diseases of the Buccal Cavity and Salivary Glands	165	419	584	141	124	265	9,877	7,966	17,843
560–561, 570	Intestinal Obstruction and Hernia	22	6	28	18	4	22	1,123	256	1,379
571.0	Gastro-enteritis under Two Years	29	36	65	122	115	237	14,626	12,692	27,318
571.1	Gastro-enteritis over Two Years	321	315	636	363	72	435	11,842	8,009	19,851
N.O.S. 539–587	Other Diseases of Alimentary System	578	504	1,082	1,136	607	1,743	43,745	28,506	72,251
	Genito-Urinary Diseases									
613	Hydrocele	1	—	1	3	—	3	512	—	512
N.O.S. 590–617	Other Diseases of Genito-Urinary System and Male Genital Organs	181	18	199	146	1	147	6,249	366	6,615
636	Sterility (Female)	—	26	26	—	8	8	—	2,610	2,610
N.O.S. 620–637	Other Diseases of Uterus and Female Genital Organs	—	765	765	—	183	183	—	9,390	9,390
	Normal Pregnancy	—	558	558	—	57	57	—	14,171	14,171
650–652	Abortion	—	22	22	—	35	35	—	3,061	3,061
N.O.S. 640–689	Other Diseases of Childbirth	—	13	13	—	6	6	—	1,110	1,110
	Skin and Musculo-Skeletal Diseases									
690–698	Boils and Infections of Skin and Subcutaneous Tissues	621	465	1,086	715	403	1,118	18,706	10,930	29,636
715	Chronic Ulcers	14	2	16	104	74	178	15,861	9,008	24,869
N.O.S. 700–716	Other Diseases of the Skin	352	338	690	435	264	699	10,036	6,648	16,684
720–759	Diseases of Bones, Joints, Muscles and Malformation	415	299	714	992	461	1,453	24,188	12,155	36,343

RETURN OF DISEASES—OUT-PATIENTS, 1959—(*Contd.*)

Code	Diseases	European			Asian			African		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
	Ill-Defined Diseases and Injuries									
760–776	Neonatal Diseases	3	4	7	6	3	9	2,248	1,045	3,293
788.8	Pyrexia of Unknown Origin	271	205	476	394	140	534	46,658	32,572	79,230
N.O.S. 780–795	All Other Ill-Defined Causes of Morbidity	688	816	1,504	305	116	421	5,837	3,716	9,553
N.800–N.839	Fractures and Dislocations	62	42	104	93	32	125	4,784	2,319	7,103
N.840–N.848	Sprains	93	67	160	144	9	153	7,778	2,843	10,621
N.930–N.936	Foreign Bodies	101	85	186	101	9	110	3,646	1,889	5,535
N.940–N.949	Burns and Scalds	22	12	34	82	51	133	6,720	4,217	10,937
N.960–N.979	Poisoning	6	5	11	6	—	6	504	315	819
N.O.S. N.850–N.999	Other Injuries and Wounds	310	236	546	1,135	460	1,545	50,298	19,008	69,306
Y.00–Y.18	Examination	2,027	879	2,906	2,099	748	2,847	24,616	3,576	28,192
	Total	10,268	10,542	20,810	17,738	8,581	26,319	596,499	379,723	976,222

RETURN OF DISEASES—IN-PATIENTS, 1959

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		General Infectious and Parasitic Diseases												
	A.													
001–008	1	Respiratory Tuberculosis	4	3	7	—	154	57	211	11	2,787	2,052	4,839	545
010	2	T.B. of Meninges and Central Nervous System	—	—	—	—	3	4	7	3	98	96	194	81
011	3	T.B. of Intestines, Peritoneum and Mesenteric Glands	—	—	—	—	3	1	4	—	77	52	129	21
012, 013	4	Tuberculosis of Bones and Joints	—	—	—	—	3	1	4	—	393	309	702	19
014–019	5	Tuberculosis—All other Forms	—	—	—	—	28	3	31	—	272	190	462	46
020	6	Congenital Syphilis	—	—	—	—	—	—	—	—	39	27	66	18
021.0, 021.1	7	Primary Syphilis	1	—	1	—	—	—	—	—	36	25	61	2
021.2–021.4	7	Secondary Syphilis	—	—	—	—	—	—	—	—	100	121	221	3
024	8	Tabes Dorsalis	—	—	—	—	—	—	—	—	2	—	2	1
025	9	General Paralysis of Insane	—	—	—	—	4	1	5	1	6	2	8	4
022, 023	10	Cardio Vascular Syphilis	—	—	—	—	—	—	—	—	10	2	12	1
026–029	10	All other Syphilis	—	—	—	—	—	—	—	—	39	24	63	2
030, 031	11	Gonorrhoea, Genito-Urinary	—	—	—	—	2	—	2	—	269	201	470	—
033	11	Gonoccal Infection of Eye	—	—	—	—	—	—	—	—	14	12	26	—
032, 034, 035	11	Other Gonoccal Infections	—	—	—	—	—	—	—	—	67	62	129	—
040	12	Typhoid Fever	4	1	5	—	5	1	6	—	571	521	1,092	110
041, 042	13	Salmonella Infections	—	—	—	—	—	—	—	—	24	7	31	1
043	14	Cholera	—	—	—	—	—	—	—	—	—	—	—	—
044	15	Brucellosis	—	—	—	—	—	—	—	—	137	64	201	4
045	16	Bacillary Dysentery	10	15	25	—	12	6	18	—	1,188	646	1,834	69
046	16	Amoebiasis	3	4	7	—	10	7	17	—	788	443	1,231	36
047, 048	16	Other Unspecified Dysentery	2	—	2	—	6	5	11	—	634	403	1,037	35
050	17	Scarlet Fever	2	—	2	—	—	2	2	—	—	—	—	—
051	18	Streptococcal Sore Throat	1	1	2	—	11	8	19	—	198	74	272	—
052	19	Erysipelas	1	—	1	—	—	—	—	—	3	—	3	—
053	20	Septicaemia and Pyaemia	—	—	—	—	—	—	—	—	44	29	73	22
055	21	Diphtheria	3	3	6	—	3	6	9	2	19	16	35	13
056	22	Whooping-cough	5	1	6	—	—	2	2	1	900	909	1,809	107
057	23	Meningococcal Infections	—	—	—	—	—	—	—	—	146	89	235	78
058	24	Plague	—	—	—	—	—	—	—	—	8	4	12	1
060	25	Leprosy	—	1	1	—	—	—	—	—	180	66	246	5
061	26	Tetanus	—	—	—	—	—	1	1	1	445	262	707	326

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European Admission			Total Deaths	Asian Admission			Total Deaths	African Admission			Total Deaths
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		General Infectious and Parasitic Diseases—(*Contd.*)												
	A.													
062	27	Anthrax	—	—	—	—	—	—	—	—	156	101	257	12
080	28	Acute Poliomyelitis	19	8	27	1	23	21	44	—	216	107	323	27
082	29	Acute Infectious Encephalitis	4	3	7	—	3	3	6	1	42	28	70	22
081, 083	30	Late Effects Poliomyelitis and Infectious Encephalitis	—	—	—	—	—	—	—	—	51	36	87	6
084	31	Variola Major	—	—	—	—	—	—	—	—	—	—	—	—
084	31	Variola Minor	—	—	—	—	—	1	1	—	261	217	478	6
085	32	Measles	11	4	15	—	—	2	2	—	1,225	1,021	2,246	49
091	33	Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—
092	34	Infectious Hepatitis	5	2	7	—	5	—	5	—	271	145	416	39
094	35	Rabies	—	—	—	—	—	—	—	—	2	4	6	2
100	36	Louse Borne Epidemic Typhus	—	—	—	—	—	—	—	—	2	1	3	—
101	36	Flea Borne Endemic Typhus	—	—	—	—	—	—	—	—	—	—	—	—
104	36	Tick Borne Typhus	1	—	1	—	—	—	—	—	3	—	3	—
N.O.S. 102–108	36	Other Rickettsial Diseases	2	—	2	—	—	—	—	—	1	—	1	—
110	37	B.T. Malaria	—	—	—	—	11	2	13	1	15	5	20	1
111	37	Qt. Malaria	—	1	1	—	—	1	1	—	39	22	61	1
112	37	S.T. Malaria	30	10	40	—	10	5	15	—	3,520	2,021	5,541	127
115	37	Blackwater Fever	—	—	—	—	1	1	2	—	9	2	11	3
N.O.S. 113–117	37	Other Forms of Malaria	—	—	—	—	1	2	3	1	1,947	1,358	3,305	143
123.0	38	Schistosomiasis (Haematobium)	—	—	—	—	—	—	—	—	411	199	610	2
123.1	38	Schistosomiasis (Mansoni)	2	—	2	—	11	—	11	—	440	239	679	14
123.2	38	Schistosomiasis (Japonicum)	—	—	—	—	—	—	—	—	—	—	—	—
123.3	38	Other Unspecified Schistosomiasis	—	—	—	—	4	1	5	—	75	24	99	1
125	39	Hydatid Disease	—	—	—	—	—	—	—	—	48	42	90	5
127	40	Onchocerciasis	—	—	—	—	1	—	1	—	1	—	1	—
	40	Loiasis	—	—	—	—	—	—	—	—	—	—	—	—
127	40	Filariasis (Elephantiasis)	—	—	—	—	1	—	1	—	44	29	73	1
127	40	Other Filariasis	—	—	—	—	—	—	—	—	50	15	65	2
129	41	Ankylotomiasis	—	—	—	—	—	—	—	—	478	445	923	8
126	42	Tapeworm and other Cestode Infestation	1	1	2	—	—	—	—	—	558	324	882	1
130.0	42	Ascariasis	—	—	—	—	—	—	—	—	490	409	899	4
130.3	42	Guineaworm	—	—	—	—	—	—	—	—	6	3	9	—

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
	A.	General Infectious and Parasitic Diseases—(*Contd.*)												
N.O.S. 124–130	42	Other Diseases due to Helminths ..	—	—	—	—	—	—	—	—	70	50	120	—
036	43	Chancroid	—	—	—	—	—	—	—	—	3	1	4	—
037	43	Lymphogranuloma Venereum	—	—	—	—	—	—	—	—	5	—	5	—
038	43	Granuloma Inguinale	—	—	—	—	—	—	—	—	4	—	4	—
039	43	Other Unspecified Venereal Diseases ..	—	—	—	—	—	—	—	—	28	33	61	—
049	43	Food Poisoning, Infective and Toxic (excepting Salmonella Infection) ..	—	—	—	—	9	2	11	—	72	43	115	4
071.0	43	Relapsing Fever (Louse Borne)	—	—	—	—	—	—	—	—	2	—	2	—
071.1		Relapsing Fever (Tick Borne)	—	—	—	—	—	—	—	—	3	1	4	—
072	43	Weil's Diseases	—	—	—	—	—	—	—	—	—	—	—	—
073	43	Yaws	—	—	—	—	—	—	—	—	21	27	48	—
086	43	Rubella	—	2	2	—	—	—	—	—	1	—	1	—
087	43	Chicken Pox	5	4	9	—	4	4	8	—	621	243	864	6
088	43	Herpes Zoster	—	—	—	—	—	—	—	—	34	16	50	—
089	43	Mumps	1	1	2	—	—	—	—	—	104	15	119	—
090	43	Dengue	—	—	—	—	—	—	—	—	5	3	8	—
095	43	Trachoma	—	—	—	—	—	—	—	—	155	161	316	—
096.7	43	Sandfly Fever	—	—	—	—	—	—	—	—	1	—	1	—
120	43	Leishmaniasis	—	—	—	—	—	—	—	—	202	96	298	29
121.0	43	Trypanosomiasis (Gambiense)	—	—	—	—	—	—	—	—	26	8	34	3
121.0	43	Trypanosomiasis (Rhodesiense)	—	—	—	—	—	—	—	—	—	—	—	—
121.2	43	Other Unspecified Trypanosomiasis ..	—	—	—	—	—	—	—	—	17	6	23	1
131	43	Dermatophytosis (Tinea)	—	—	—	—	—	—	—	—	60	26	86	—
135	43	Scabies	—	—	—	—	—	—	—	—	111	85	196	—
N.O.S. 054–122	43	Other Infectious and Protozoal Diseases	—	—	—	—	—	—	—	—	55	24	79	3
N.O.S. 132–138	43	Other Parasitic Diseases	3	4	7	—	1	3	4	—	54	30	84	5
		New Growths												
140–148	44	Malignant Neoplasm of Mouth and Pharynx	—	—	—	—	5	1	6	1	22	9	31	7
150	45	Malignant Neoplasm of Oesophagus ..	—	—	—	—	1	—	1	—	61	12	73	24

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		NEW GROWTHS—(*Contd.*)												
	A.													
151	46	Malignant Neoplasm of Stomach ..	—	—	—	—	4	—	4	—	47	20	67	28
152, 153	47	Malignant Neoplasm of Intestine.. ..	—	—	—	—	—	—	—	—	9	5	14	5
154	48	Malignant Neoplasm of Rectum ..	—	—	—	—	17	2	19	—	8	3	11	2
161	49	Malignant Neoplasm of Larynx	—	—	—	—	—	—	—	—	5	—	5	3
162, 163	50	Malignant Neoplasm of Trachea, Bronchus and Lung not Specified as Secondary..	1	—	1	—	1	1	2	—	15	4	19	4
170	51	Malignant Neoplasm of Breast	—	2	2	—	—	3	3	—	6	60	66	8
171	52	Malignant Neoplasm of Cervix Uteri ..	—	—	—	—	—	5	5	—	—	96	96	8
172, 174	53	Malignant Neoplasm of other Unspecified Parts of Uterus	—	—	—	—	—	6	6	—	—	59	59	3
177	54	Malignant Neoplasm of Prostate ..	—	—	—	—	—	—	—	—	32	—	32	8
190, 191	55	Malignant Neoplasm of Skin	2	—	2	—	2	4	6	—	37	26	63	7
196, 197	56	Malignant Neoplasm of Bone and Connected Tissue	—	—	—	—	—	—	—	—	64	41	105	17
155	57	Malignant Neoplasm of Liver and Bile Passages (Primary)	—	—	—	—	4	2	6	—	66	34	100	31
N.O.S. 156–199	57	Malignant Neoplasm of all other and Unspecified Sites	1	—	1	—	2	2	4	1	179	88	267	59
204	58	Laukaemia and Aleukaemia	—	1	1	—	2	5	7	2	24	16	40	18
200–203, 205	59	Lymphosarcoma and other Neoplasm of Lymphatic and Haematopoietic Systems	—	—	—	—	—	—	—	—	57	20	77	16
210–239	60	Benign Neoplasms and Unspecified Neoplasms	2	5	7	—	—	—	—	—	289	451	740	30
		ALLERGIC, METABOLIC AND BLOOD DISEASES												
250, 251	61	Non-toxic Goitre	—	—	—	—	1	—	1	—	8	77	85	1
252	62	Thyrotoxicosis	—	—	—	—	—	—	—	—	4	14	18	—
260	63	Diabetes Mellitus	1	4	5	—	27	10	37	2	108	52	160	24
280	64	Beri-beri	2	—	2	—	—	—	—	—	22	11	33	—
281	64	Pellagra	—	—	—	—	—	—	—	—	68	34	102	1
282	64	Scurvy	—	—	—	—	—	—	—	—	7	3	10	—
286.6	64	Kwashiorkor	—	—	—	—	—	—	—	—	749	555	1,304	304

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		ALLERGIC, METABOLIC AND BLOOD DISEASES—*Contd.*												
	A.													
283–286	64	Other Deficiency States	1	—	1	—	—	—	—	—	280	199	479	86
290	65	Pernicious and other Hyperchromic Anaemias	—	—	—	—	1	—	1	—	87	89	176	25
291	65	Iron Deficiency Anaemias	—	—	—	—	—	5	5	—	266	315	581	41
292, 293	65	Other Anaemias	—	—	—	—	2	12	14	—	288	381	669	58
241	66	Asthma	1	5	6	—	10	12	22	1	537	252	789	10
N.O.S. 240–299	66	Other Allergic, Endocrine, Metabolic and Blood Diseases	3	2	5	—	14	5	19	—	129	77	206	13
		DISEASES OF NERVOUS SYSTEM AND SENSE ORGANS												
300–309	67	Psychoses	25	28	53	—	40	14	54	—	760	291	1,051	6
310–324, 326	68	Psychoneuroses and Disorders of Personality	2	1	3	—	—	—	—	—	102	118	220	1
325	59	Mental Deficiency	—	—	—	—	4	3	7	1	281	213	494	4
330–334	70	Vascular Lesions Affecting Central Nervous System	—	—	—	—	1	1	2	1	77	31	108	20
340.0	71	Meningitis due to H. Influenza	—	—	—	—	3	—	3	3	27	20	47	11
340.1	71	Meningitis due to Pneumacoccus	—	—	—	—	3	—	3	1	134	88	222	91
340.2	71	Meningitis due to Other Organisms except Tuberculosis and Syphilitic	—	1	1	—	1	—	1	1	115	68	183	46
340	71	Meningitis (except Meningococcal and Tuberculosis)	—	—	—	—	—	—	—	—	124	79	203	75
345	72	Multiple Sclerosis	—	—	—	—	—	—	—	—	—	—	—	—
353	73	Epilepsy	—	1	1	—	9	2	11	1	262	139	401	10
370–379	74	Inflammatory Diseases of Eye	—	—	—	—	7	7	14	—	445	256	701	—
385	75	Cataract	—	—	—	—	13	6	19	—	277	1,173	450	—
387	76	Glaucoma	—	—	—	—	3	—	3	—	17	10	27	—
390	77	Otitis Externa	4	—	4	—	—	—	—	—	25	31	56	1
391–393	77	Otitis Media and Mastoiditis	4	2	6	—	10	—	10	—	346	220	566	6
394	77	Other Inflammatory Diseases of Ear	—	—	—	—	10	2	12	—	64	46	110	—

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		Diseases of Nervous System and Sense Organs—(*Contd.*)												
N.O.S. 341–369 395–398	A. 78	All other Diseases if Nervous System, Sense Organs and Auditory System	2	13	15	3	5	2	7	—	290	178	468	54
N.O.S. 380–389	78	All other Diseases and Conditions of Eye	1	—	1	—	5	7	12	1	357	235	592	—
		Circulatory Diseases												
400–401	79	Rheumatic Fever	—	—	—	—	4	4	8	—	191	143	334	12
402	79	Chorea	—	—	—	—	—	—	—	—	7	16	23	1
410–416	80	Chronic Rheumatic Heart Disease ..	—	1	1	—	5	1	6	1	80	99	179	40
420–422	81	Arteriosclerotic and Degenerative Heart Disease	2	1	3	2	4	3	7	1	38	47	85	39
430–434	82	Other Diseases of Heart	3	1	4	—	12	9	21	3	299	242	541	147
440–443	83	Hypertension with Heart Disease.. ..	1	—	1	—	10	1	11	2	67	39	106	23
444–447	84	Hypertension without Mention of Heart	1	—	1	—	4	5	9	1	65	28	93	14
450–456	85	Diseases of Arteries	1	—	1	—	25	8	33	5	31	7	38	4
460–468	86	Other Diseases of Circulatory System ..	7	13	20	—	11	2	13	1	204	104	308	41
		Respiratory Diseases												
470–475	87	Acute Upper Respiratory Infections ..	8	10	18	—	17	6	23	—	1,129	728	1,857	27
480–483	88	Influenza	3	6	9	—	13	11	24	—	1,448	996	2,444	2
490	89	Lobar Pneumonia	3	2	5	—	15	2	17	2	3,188	1,706	4,894	266
491	90	Bronchopneumonia	1	1	2	—	15	—	15	2	3,868	3,174	7,042	1,240
492, 493	91	Primary Atypical, other and Unspecified Pneumonia	—	—	—	—	—	—	—	—	1,350	644	1,994	94
500	92	Acute Bronchitis	1	3	4	—	23	4	27	1	3,372	2,612	5,984	61
501, 502	93	Bronchitis, Chronic and Unqualified ..	2	—	2	—	8	3	11	—	1,185	859	2,044	141
510	94	Hypertrophy of Tonsils and Adenoids ..	13	15	28	—	110	109	219	—	710	502	1,212	12
518, 521	95	Empyema and Abscess of Lung	—	—	—	—	5	—	5	—	95	39	134	18
519	96	Pleurisy (other than Tuberculosis) ..	—	1	1	—	1	—	1	—	113	62	175	1
523	97	Pneumoconiosis	—	—	—	—	5	2	7	—	7	10	16	4
N.O.S. 511–527	97	All other Respiratory Diseases	5	2	7	—	52	21	73	—	510	305	815	24

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		Alimentary Diseases												
	A.													
530	98	Dental Caries	1	—	1	—	5	2	7	—	130	80	210	—
531–535	98	All other Diseases of Teeth and Supporting Structures	—	1	1	—	2	—	2	—	155	78	233	2
540	99	Ulcer of Stomach	—	—	—	—	6	3	9	1	93	32	125	7
541	100	Ulcer of Duodenum	6	4	10	—	15	—	15	—	159	61	220	13
543	101	Gastritis and Duodenitis	1	—	1	—	24	9	33	—	328	308	636	13
550–553	102	Appendicitis	8	7	15	—	65	55	120	—	156	54	210	12
560, 561, 570	103	Intestinal Obstruction and Hernias	9	2	11	—	55	13	68	—	899	139	1,038	111
571.0	104	Gastro-Enteritis and Colitis between Four Weeks and Two Years	4	—	4	—	10	8	18	3	2,360	2,007	4,367	576
571.1	104	Gastro-Enteritis and Colitis, Ages Two Years and over	5	4	9	—	4	2	6	—	1,430	991	2,421	187
572	104	Chronic Enteritis and Ulcerative Colitis	—	—	—	—	6	2	8	—	144	109	253	12
158	105	Cirrhosis of Liver	1	—	1	—	4	1	5	1	255	120	375	97
584, 585	106	Cholelithiasis and Cholecystitis	4	1	5	—	8	7	15	2	23	24	47	2
536–587	107	Other Diseases of Digestive System	11	18	29	—	22	15	37	—	1,266	839	2,105	79
		Genito-Urinary Diseases												
590	108	Acute Nephritis	—	—	—	—	6	3	9	1	102	64	166	27
591–594	108	Chronic, other and Unspecified Nephritis	—	—	—	—	4	3	7	1	107	60	167	33
600	110	Infections of Kidney (Other than Tuberculous)	1	—	1	—	12	10	22	—	72	77	149	8
602, 604	111	Calculi of Urinary System	3	—	3	—	11	1	12	—	29	10	39	1
610	112	Hyperplasia of Prostate	—	—	—	—	1	—	1	—	130	—	130	14
620, 621	113	Diseases of Breast (not Neoplastic)	—	1	1	—	—	2	2	—	12	295	307	—
613	114	Hydrocele	—	—	—	—	5	—	5	—	214	—	214	—
634	114	Disorders of Menstruation	—	12	12	—	—	21	21	—	—	830	830	—
N.O.S. 601–617	114	Other Diseases of Genito-Urinary System and Male Genital Organs	20	1	21	—	91	—	91	1	1,084	25	1,109	15
N.O.S. 622–637	114	Other Diseases of Uterus and Female Genital Organs	—	19	19	—	—	143	143	—	—	2,104	2,104	15

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		Diseases of Pregnancy Puerperium												
640–641,681/2/4	A. 115	Sepsis of Pregnancy, Childbirth and the Puerperium	—	1	1	—	—	3	3	—	—	214	214	17
642, 652, 685, 686	116	Toxaemias of Pregnancy and the Puerperium	—	1	1	—	—	4	4	—	—	159	159	14
643, 644	117	Haemorrhage of Pregnancy and Childbirth	—	—	—	—	—	5	5	1	—	705	705	36
650	118	Abortion without Mention of Sepsis or Toxaemia	—	7	7	—	—	28	28	—	—	2,549	2,549	14
650	119	Abortion with Sepsis	—	1	1	—	—	17	17	1	—	583	583	30
660	120	Delivery without Complication	—	48	48	—	—	40	40	—	—	11,820	11,820	13
N.O.S. 645–689	120	Other Complications of Pregnancy, Childbirth and Puerperium	—	19	19	—	—	32	32	1	—	2,642	2,642	114
		Skin and Musculo-Skeletal Diseases												
690–698	121	Infections of Skin and Subcutaneous Tissue	30	8	38	—	21	4	25	—	1,298	736	2,034	9
720–725	122	Arthritis Spondylitis	—	2	2	—	5	3	8	—	558	263	821	4
726–727	123	Muscular Rheumatism and Rheumatism, Unspecified	—	—	—	—	2	1	3	—	575	561	1,136	1
730	124	Osteomyelitis and Periostitis	—	3	3	—	9	4	13	—	353	163	516	7
737, 745–749	125	Ankylosis and Acquired Musculo-skeletal Deformaties	4	2	6	—	2	—	2	—	138	36	174	1
715	126	Chronic Ulcer of Skin	1	—	1	—	1	—	1	—	966	583	1,549	4
700–714, 716	126	All other Diseases of Skin	5	5	10	—	24	7	31	—	536	379	915	8
731/736, 738–744	126	All other Diseases of Musculo-skeletal System	6	—	6	—	6	—	6	—	471	293	764	9
751	127	Spina Bifida Meningocele	—	—	—	—	—	—	—	—	16	14	30	8
754	128	Congenital Malformations of Circulatory System	—	—	—	—	—	—	—	—	42	21	63	10
N.O.S. 750–759	129	Other Congenital Malformations	—	—	—	—	1	—	1	—	101	65	166	17

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
		Diseases of Newborn												
	A.													
760–761	130	Birth Injuries	—	—	—	—	—	—	—	—	14	26	40	19
762	131	Post-natal Asphyxia and Atelectasis	—	—	—	—	—	—	—	—	25	20	45	23
764	132	Diarrhoea of Newborn (under Four weeks)	—	—	—	—	—	1	1	—	81	74	155	17
765	132	Ophthalmia Neonatorum	—	—	—	—	—	1	1	—	35	29	64	—
763, 766–768	132	Other Infections of Newborn	—	—	—	—	—	—	—	—	38	38	76	15
770	133	Haemolytic Diseases of Newborn	—	—	—	—	—	—	—	—	4	5	9	3
769, 771, 772	134	All other defined Diseases of Early Infancy	—	—	—	—	1	—	1	—	74	56	130	28
773, 776	135	Ill-defined Diseases Peculiar to Early Infancy, and Immaturity, Unqualified	—	—	—	—	2	1	3	—	137	195	335	92
		Ill-Defined Diseases												
794	136	Senility without Mention of Psychosis	—	1	1	—	1	—	1	—	68	125	193	51
788.8	137	Pyrexia of Unknown Origin	27	18	45	—	56	38	94	—	4,526	2,501	7,027	157
793	137	Observation, without need for further medical care	14	17	31	—	17	15	32	—	1,001	841	1,842	11
N.O.S. 780–795	137	All other ill-defined Causes of Morbidity	2	2	4	—	14	11	25	—	366	238	604	19
		Injuries												
	A.N.													
N.800-N.804	138	Fracture of Skull	—	—	—	—	19	3	22	3	313	62	375	61
N.805-N.809	139	Fracture of Spine and Trunk	—	—	—	—	12	2	14	2	184	53	237	29
N.810-N.829	140	Fracture of Limbs	5	3	8	—	75	18	93	4	2,507	933	3,440	13
N.830-N.839	141	Dislocation without Fracture	—	1	1	—	5	1	6	—	350	121	471	3
N.840-N.848	142	Sprains and Strains of Joints and Adjacent Muscle	1	—	1	—	14	1	15	—	466	180	646	—
N.850-N.856	143	Head injury (excluding Fracture)	2	—	2	—	30	6	36	3	580	168	748	31
N.860-N.869	144	Internal Injury of Chest, Abdomen and Pelvis	—	—	—	—	19	4	23	4	198	53	251	23
N.870-N.908	145	Laceration and Open Wounds	2	—	2	—	79	23	102	1	3,956	1,539	5,495	29
N.910-N.929	146	Superficial Injury, Contusion and Crushing with Intact Skin Surface	2	—	2	—	24	5	29	—	1,265	568	1,833	2
N.930-N.936	147	Effects of Foreign Body Entering through Orifice	—	—	—	—	8	4	12	—	246	168	414	5

RETURN OF DISEASES—IN-PATIENTS, 1959—(*Contd.*)

Code	List No.	Diseases	European			Total Deaths	Asian			Total Deaths	African			Total Deaths
			Admission				Admission				Admission			
			Male	Female	Total		Male	Female	Total		Male	Female	Total	
	A.N.	Injuries—(*Contd.*)												
N.940-N.949	148	Burns	1	—	1	—	15	10	25	5	961	748	1,709	146
N.960-N.979	149	Effects of Poisons	—	—	—	—	24	4	28	1	291	167	458	18
N.950-N.959 N.980-N.999	150	All other and Unspecified Effects of External Causes	—	—	—	—	15	1	16	—	461	192	653	20
		Total	399	399	798	6	1,732	1,060	2,792	93	78,995	71,137	150,132	7,784

1959—RETURN OF ACCIDENTS (COMBINED) IN- AND OUT-PATIENTS

Code	List	Accidents	European		Asian		African	
			Cases	Deaths	Cases	Deaths	Cases	Deaths
	AE.							
E810–E835	138	Motor vehicles accidents	44	2	141	10	2,918	88
E800–E802, E840–E866	139	Other transport accidents	6	—	78	—	2,986	31
E870–E895	140	Accidental poisoning	4	—	20	—	704	14
E900–E904	141	Accidental falls	85	—	75	—	7,252	15
E912	142	Accident caused by machinery	5	1	94	1	1,961	4
E916	143	Accident caused by fire and explosion of combustible material	3	—	23	4	3,507	115
E917, E918	144	Accident caused by hot substance, corrosive liquid, steam and radiation	25	—	48	1	2,380	31
E919	145	Accident caused by firearm	—	—	1	—	54	2
E929	146	Accidental drowning and submersion	1	1	1	—	13	3
E920	147	Foreign body entering eye and adnexa	28	—	18	—	1,343	—
E923	147	Foreign body entering other orifice	14	—	16	—	2,677	2
E927	147	Accidents caused by bites and stings of venomous animals and insects	27	—	9	—	2,268	11
E928	147	Other accidents caused by animals	4	—	559	—	1,279	6
N.O.S. E910–E979	148	All other accidental causes	280	—	115	—	26,716	23
E980–E985	149	Homicide and injury purposely inflicted by other persons (not in war)	4	—	21	1	4,687	36
E990–E999	150	Injury resulting from operations of war	—	—	—	—	—	—
		TOTAL	530	4	1,219	17	60,745	381

G.P.K. 1470—450—5/60