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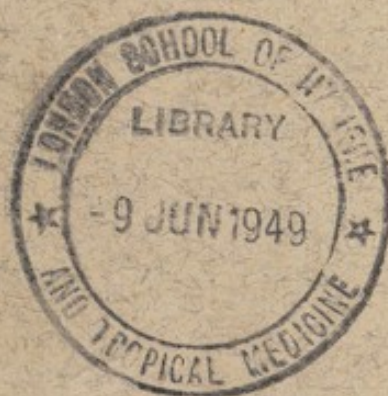
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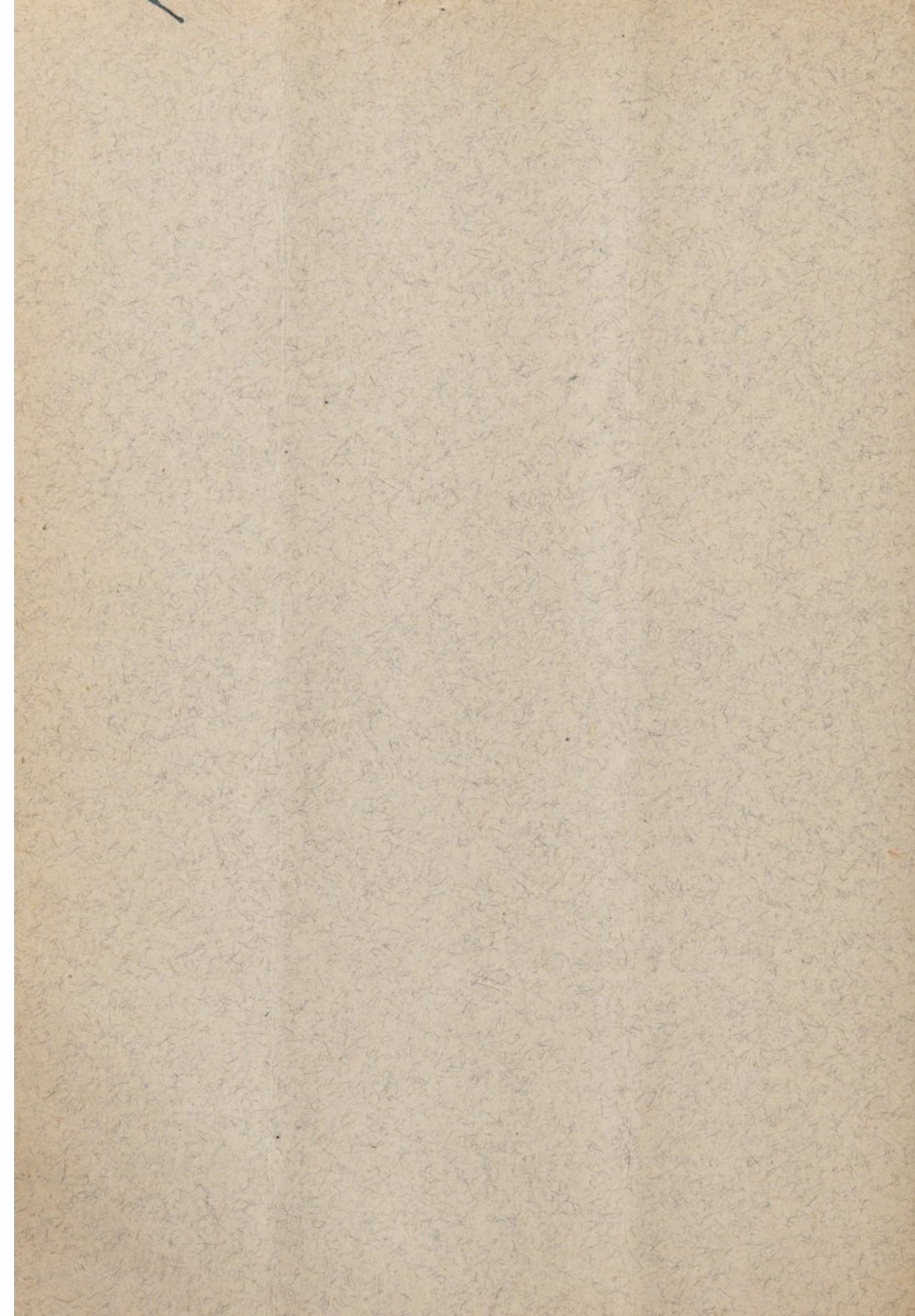
Annual Report of the Medical Department for the year 1947

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Annual Report of the Medical Department for the Year 1947

INTRODUCTION

The year's objectives have not been reached : our desires have far outmatched our performances and we have been sorely stayed by shortage of staff, buildings, transport and equipment.

2. The general section of the Development Plan aims at providing and staffing, within ten years, at least eighteen Medical Field Units, 7,000 additional hospital beds, and twenty-two Rural Health Centres, while the aim of the special section is the creation of comprehensive Tuberculosis, Mental Health, Ophthalmic and Leprosy Services, in the same period. In both of these sections progress has been uneven and the country is but little relieved of her many health needs and problems which include :—

- (i) the recurrence of serious epidemic disease including Smallpox, Cerebro-spinal Fever, Relapsing Fever ;
- (ii) the prevalence of helminthic infestation in great variety including ascaris and ankylostome generally and schistosomiasis, dracontiasis and loa loa in many localities ;
- (iii) the high case incidence of leprosy, especially in Southern Nigeria, of trypanosomiasis in Northern Nigeria, and of venereal diseases, of yaws, and of tuberculosis ;
- (iv) hospital accommodation is inadequate, as is accommodation for Maternity and Infant Welfare, provision of which cannot keep pace with the remarkable demand for this service in Southern Nigeria ;
- (v) the need for a higher level of personal and community hygiene and nutrition especially among the rural population.

3. In sombre recognition of the gulf between need and fulfilment do we view the result of both our normal and development activities during the year. Two Medical Field Units have gone into action in border provinces. A special school for Field Unit Orderlies was established at the beginning of the year and one hundred have been trained there. New hospitals have been completed. The bed strength of several existing hospitals has been substantially increased by permanent and temporary buildings or by adaptations, Rural Health Units have been sited ; the elements of a Tuberculosis Service and a Mental Health Service are being assembled ; the Leprosy Service has withstood staff shortages and has made progress ; supplementary training schemes for staff for expansion and development are in prospect or in operation ; and a large Anti-malarial (Lagos) Scheme has been completed.

II. ADMINISTRATION

A. Staff and Functions

4. In accord with the devolution of administrative responsibility from Central Government to Regions as required by the new constitution, three appointed Regional Deputy Directors of Medical Services have assumed duty this year. They are advisers to the Chief Commissioners, and operate the general Regional Medical Services of which they are in process of assuming financial as well as administrative control.

5. A further result of the new constitution is the apportioning of new funds and new duties to Native Administrations. This has led to a clearer definition of the respective duties of the Government Medical Services and the Health Services of the many Native Administrations.

6. The Government Medical Service provides administrative, professional, higher technical and clerical staff, and is responsible for the supervision of all aspects of medical and health work, for research, and for all training. It is directly responsible for the provision of hospitals, for leprosy and sleeping sickness control, for mental health, for Medical Field Unit work, for the sanitation of townships and government stations, for health propaganda and epidemic control.

7. The Native Administration Health Services co-operate in all medical and health activities in their area, provide and operate dispensaries and small maternity homes, an ambulance service, emergency temporary Isolation Hospitals as required, and supply a subordinate inspectorate, equipment and staff for vaccination and all sanitary and health duties in their area. Some of the major Native Administrations have provided and largely maintain important general hospitals.

8. Other health agencies include Missions of several denominations, which by the provision of several hospitals, and small maternity homes, by the great amount of leprosy work they carry out alone or in association with Government or Native Administration and by the teaching of personal and community hygiene in hundreds of mission schools, have made a very large contribution to medical and health work in Nigeria. Still wider bounds are set to the work of these agencies in government's new policy in respect of development of medical and health services under the ten-year plan. Where Government is unable to establish and staff needed hospitals, and a voluntary agency can do so satisfactorily, such agency will qualify for appropriate financial assistance under the ten-year development plan.

9. Private Practitioners, though few in number and concentrated in larger urban areas are making a significant contribution to the country's total available health service.

10. The following are some of those employed in Medical and Health work in Nigeria. They do not include large numbers of staff in training and of sleeping

sickness, leprosy, skilled minesfield orderlies and attendants employed by Government, Native Administrations and Missions :—

				<i>Government</i>	<i>Native Administration</i>	<i>Missions and Private Bodies</i>
Doctors	..	..	..	*189	All are seconded from Government	105
Dentists	..	..	..	6	—	6
Sisters	..	..	..	74	Seconded from Government	—
Sanitary Superintendents				38	—	—
Dispensers	..	..		121	—	—
Nurses (Trained)		..		546	42	201
Midwives Grade I		..		†64	—	‡203
Midwives, Grade II		..		—		§795
Sanitary Inspectors		..		201	—	—
Native Administration Sanitary Inspectors and Sub-Inspectors, including 47 females.				—	over 500	—
Dispensary Attendants	..			—	over 500	—

The training of Medical Services personnel is summarised in a later section of the Report.

* Many vacancies exist in this class of personnel, the establishment of which numbers 241.

† This does not include Government Nursing Sisters the majority of whom have the United Kingdom C.M.B. qualification.

‡ This figure is made up of 114 Grade I Nigeria-trained and 89 with a United Kingdom C.M.B. or equivalent. The majority of the latter are Nursing Sisters in Mission Hospitals.

§ Employed by Native Administrations, Missions and Private Bodies. These licences are limited to a specified area whereas Grade I Midwives Licences cover all Nigeria.

B. Legislation

11. The following legislation affecting Public Health was enacted during the year :—

ORDINANCES

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provision</i>	<i>Gazette No.</i>
5	15.5.47	The Building Lines Regulation (Amendment) Ordinance, 1947.	Amendment of certain Sections in Ordinance 11 of 1936.	30 of 15.5.47
6	15.5.47	The Medical Practitioners and Dentists (Amendment) Ordinance, 1947.	Amendment of Ordinance No. 20 of 1934, Medical Practitioners and Dentists (Appointment of Disciplinary Committee).	30 of 15.5.47
34	11.9.47	The Lunacy (Amendment) Ordinance, 1947.	Amendment of the Lunacy Ordinance.	48 of 11.9.47

REGULATIONS

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provisions</i>	<i>Gazette No.</i>
1	9.1.47	The Hospital Fees (Amendment) Regulations, 1947.	Amendment of Regulations 4 of Hospital Fees Regulations.	4 of 16.1.47
2	3.1.47	The Quarantine Regulations, 1947.	Regulations made under the Quarantine Ordinance.	6 of 23.1.47
3	3.1.47	The Quarantine (Aerial Navigation) Regulations, 1947.	Regulations made under the Quarantine Ordinance for Aerial Navigation.	6 of 23.1.47
5	17.1.47	The Diseases of Animals (Aerodrome Areas) Regulations, 1947.	Prohibited animals in Aerodrome Areas.	6 of 23.1.47
17	10.4.47	The Quarantine (Amendment No. 1) Regulations, 1947.	Amendment of Regulations 2 of 1947.	25 of 17.4.47
36	1.8.47	The Registration of Nurses Regulations, 1947.	Regulations made under the Registration of Nurses Ordinance, 1946.	45 of 21.8.47
45	10.10.47	The Quarantine (Aerial Navigation) (Amendment) Regulations, 1947.	Amendment of Regulations 3 of 1947.	56 of 23.10.47
54	4.12.47	The Quarantine (Aerial Navigation) (Amendment) Regulations.	Amendment of Regulations 3 of 1947.	63 of 11.12.47

ORDERS

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provisions</i>	<i>Gazette No.</i>
4	13.3.47	The Defence Regulations (Emergency Laws) Revocation Order, 1947.	Revocation of Amendment of the Medical Practitioners and Dentists Ordinance (Amendment) Regulations, 1942, and Amendment of Retention Order, 1946.	20 of 20.3.47

ORDERS-IN-COUNCIL

<i>Serial No.</i>	<i>Date</i>	<i>Short Title</i>	<i>Provisions</i>	<i>Gazette No.</i>
3	9.1.47	The Births, Deaths, and Burials (European Cemeteries, Ijebu-Ode) (Amendment) Order-in-Council, 1947.	Deletion of the expression "European Cemeteries" and substituting of "Old" and "New" Cemeteries.	4 of 16.1.47
7	14.2.47	The Yellow Fever (Ogbomosho Area, Oyo Province, and the Ilorin Division) (Revocation) Order-in-Council, 1947.	Revocation of 1946 Order-in-Council reference Yellow Fever Immunisation.	13 of 20.2.47
12	21.2.47	The Sleeping Sickness (Declaration of Restricted Areas) Order-in-Council, 1947.	Restricted Areas for Sleeping Sickness.	17 of 6.3.47
21	13.6.47	The Births, Deaths and Burials (Abakaliki Cemetery) Order-in-Council, 1947.	Amendment of Order-in-Council No. 23 of 1929.	37 of 26.6.47
23	18.7.47	The Customs (Prohibited Imports) Order-in-Council, 1947.	Prohibition of Terne Plate.	42 of 31.7.47
36	1.12.47	The Yellow Fever and Infectious Diseases (Cholera) (Immunisation) Order-in-Council, 1947.	Application of Ordinance No. 32 of 1945.	63 of 11.12.47

C. Finance

12. Below are financial statements for the financial year 1946-47 :—

Expenditure by Government :—

A. Medical, Health and Laboratory Services.

					£
Total Revenue, 1945-46	..	..	..	..	120,780
Total Revenue, 1946-47	..	..	..	..	99,898
Total Expenditure, 1945-46	..	..	..	..	691,656
Total Expenditure, 1946-47	..	..	..	..	826,077
Increase	..	..	..	..	134,421
Nett Increase	..	..	..	..	155,303

B. Sleeping Sickness Service :

Total Expenditure, 1945-46	..	..	..	..	40,547
Total Expenditure, 1946-47	..	..	..	..	20,442
Decrease	..	..	..	..	20,105

C. Leprosy Control :

Total Expenditure, 1945-46	..	..	..	..	26,191
Total Expenditure, 1946-47	..	..	..	..	51,664
Increase	..	..	..	..	25,473
Expenditure by Native Administrations	..	..	..	..	324,392

III.—PUBLIC HEALTH

A. European Health

13. Malaria represents 26 per cent of all hospital admissions and 13.6 per cent of all patients coming under treatment.

Comparative figures are :—

		1941	1942	1943	1944	1945	1946	1947
		%	%	%	%	%	%	%
In-patients rate	..	44	35.4	30	27.5	25.8	18.9	26
Total rate		1946	1947					
		10.2%	13.6%					

14. The general health has been good. Apart from malaria infection, minor skin, digestive, respiratory and intestinal disorders predominated. The total non-African population was 9,091 and total in- and out-patients, excluding re-attendance was 18,226 ; an average of two illnesses per person per annum.

15. Invaliding figures for officials were :—

Total population (officials) 2,492. Invalidings forty-eight, deaths 7. The rate of invaliding was 1.92 per cent of which 22 per cent were psychosomatic.

B. General Health

16. Government hospitals figures for the last four years :—

		1944	1945	1946	1947
In-patients	..	97,048	106,083	116,429	121,316
Out-patients	..	947,341	886,449	1,002,244	1,067,029

17. The morbidity of several diseases cannot be assessed from hospital returns alone. For such assessment there are required special and general team surveys, notifications, Native Administration Dispensaries' reports and principal death rates in the limited areas where medical certification of deaths is general. On these bases the following diseases caused high morbidity :—

Malaria.—108,856 cases seen and treated by Medical Officers. This constitutes a fragment of the real occurrence as the disease is universal.

Leprosy.—It has been roughly estimated that there are 400,000 persons suffering from leprosy in Nigeria. 100,000 of these are estimated to be infective ; 300,000 non-infective. 76,293 were under the care of the Central Government Leprosy Service during the year.

Trypanosomiasis.—In a series of surveys by the Sleeping Sickness Service 760,067 persons were examined with 14,474 positive cases of Trypanosomiasis.

Intestinal Helminthic Diseases.—There were 62,671 cases of intestinal helminthiasis treated in hospital by Medical Officers. The majority were cases of *Ascaris* infection, the remainder *Ankylostomiasis*. Field surveys give infestation rates of intestinal helminths of 33 per cent to 50 per cent or over.

Schistosomiasis.—11,044 cases, mainly of *schistosoma haematobium*, give a very incomplete picture of its prevalence in certain districts of the North where it is a major problem, *e.g.*, school surveys in endemic areas of Plateau Province give rates of over 50 per cent.

Guinea Worm Infection is a major problem in several districts of the Northern Provinces, *e.g.*, an estimated 16 per cent infestation in the Katsina Emirate, a high incidence in Adamawa and in Western Oyo.

Yaws.—27,383 cases treated in government hospitals by Medical Officers. Field Surveys shew up to 20 per cent in certain areas of Benue Province and the degree of incidence is widely spread throughout Southern Nigeria.

Venereal Diseases.—44,751 cases seen and treated in government hospitals. This is in no way indicative of the great prevalence of gonorrhoea throughout and of syphilis in the North. Their great prevalence is referred to later.

Skin Diseases.—180,000 seen in hospital and an equal number in Native Administration dispensaries. In the ulcers, which account for half of this number, nutritional deficiency is considered a major causative factor.

<i>Respiratory Diseases</i>	..	..	92,528	
<i>Rheumatism</i>	..	..	66,293	
<i>Smallpox</i>	..	..	5,161	notifications ; 907 deaths.
<i>Cerebro-Spinal Meningitis</i>	..	..	1,573	notifications ; 350 deaths.
<i>Relapsing Fever</i>	..	..	832	notifications ; 35 deaths.

Rabies.—Twenty Canine rabies cases were reported and nine human deaths were notified. There is much more canine rabies than notifications indicate. In the Agbani Area of Onitsha Province canine rabies appears particularly prevalent, but it is reported from all three regions and from Lagos and Colony.

Tuberculosis.—Although hospital returns are scanty, numbering 1,658 pulmonary and 849 other forms, the significance of this disease can be gauged from death certification, as, for example, in the Lagos statistics of deaths given below.

18. *Diseases causing high mortality.*—Apart from deaths in hospitals, medical certification is general in Lagos only. Out of a population of 178,700 in Lagos there was a total of 3,889 deaths. 3,310 of these were certified by Registered Medical Practitioners and the principal causes of death were :—

Tuberculosis	..	..	..	..	..	234
Pneumonia	..	..	..	..	..	309
Malaria	..	..	..	..	..	301
Infantile Convulsions	..	..	..	..	..	235
Enteritis	..	..	..	..	..	283
Dysentery	..	..	..	..	..	62
Heart Diseases	..	..	..	..	..	83

IV. VITAL STATISTICS

19. *Comparative figures for 1945, 1946 and 1947 :—*

Details	Lagos		1947
	1945	1946	
Estimated population	174,200	176,500	178,700
Total Deaths ..	4,051	3,362	3,889
Deaths under one year	996	884	1,091
Death rate per 1,000	23.3	19	21.7
Total Births ..	7,804	8,060	8,678
Birth rate per 1,000	45	46	48.6
Infant Mortality ..	128	109.7	125.7
Enugu			
Estimated population	35,226	35,226	35,226
Total Deaths ..	508	440	475
Deaths under one year	144	130	157
Death rate per 1,000	14.42	12.3	13.54
Total Births ..	1,467	1,574	1,866
Birth rate per 1,000	44.67	44.68	52.97
Infant Mortality ..	98.1	82.5	84.12
Port Harcourt			
Estimated population	34,000	36,000	40,000
Total Deaths ..	215	388	185
Deaths under one year	73	65	69
Death rate per 1,000	6.3	10.8	4.6
Total Births ..	833	954	1,049
Birth rate per 1,000	24.5	26.5	26.2
Infant Mortality ..	87.6	68.1	60.1

V. HYGIENE AND SANITATION

A. Preventive Measures

(1) INSECT-BORNE DISEASES

(a) *Malaria.*

20. The Lagos Anti-Malaria tidal swamp drainage has been completed this year except that sand filling in two areas, Victoria Beach and Mekunwen, is being carried out by the Marine Department's dredgers. Preparations are being made for the handing over of the scheme on 31st March, 1948, to Lagos Town Council.

21. The scheme began in 1942 and an area of about 5,800 acres has been drained and an area double this size so controlled. The scheme consists of twenty-three tide gates, 115 miles of drains, and twenty-six miles of bunds. On the ebb tide the opened gates allow the flow of accumulated rain, subsoil, or storm water into the sea, the Lagos Lagoon, and the Creek. The gates are closed as the tide turns.

22. The effects of Anti-malarial measures are gauged by:—

- (i) *the adult vector capture service*: in 482 rooms catching was carried out. The total anophelines caught were 37,651 of which 30,206 were dissected and 915 found infected, *i.e.*, 3.02 per cent infectivity rate; *c.f.* 1.8 per cent in 1946. The anopheline density averaged 1 per cent catching station per day; this is as last year. It was noted that mosquito infection rate varied inversely with anopheline density; for example, the catch in the fourth week of May, with the establishment of the rainy season, was 2,010 with an infectivity rate of .80 per cent, while in the last week in December, the dry season, the number was 234 with an infective rate of 4.5 per cent.
- (ii) *infant inspection service* consists of visits to two Town Welfare Clinics five days a week throughout the year. Of the total children examined 174 attended with sufficient regularity to enable their first attack to be noted with certainty. Those with positive blood were thirty-six, a first inspection attack rate of 20.6 before the age of eighteen months.
- (iii) *the study of malarial abortion* was begun during the year and fifty cases were studied. There was some technical difficulty in getting satisfactory foetal blood films, but accumulating data is tending to favour the occurrence of intrauterine infection.
- (iv) *population surveys*—(i) in seventeen villages around Lagos, children less than twelve years showed a spleen rate of 72 per cent and a parasite rate of 74 per cent. Gametocyte carriers were 9 per cent. (ii) In fourteen Lagos Town schools 615 children from three to fourteen years showed spleen rate of 69 per cent and a parasite rate of 71 per cent.

23. By contrast with Lagos, a wet and dry season survey of Katsina town in the Northern Region revealed a man-made anopheline breeding problem. Over 50 per cent of Hospital attendances and over 50 per cent of deaths of infants and young children were probably from malaria. Spleen rates were from 29 per cent in adults to 93 per cent of age groups three to four with a parallel parasite rate of 17.5 per cent and 78.5 per cent in adults and children respectively. The proportion of *P. Falciparum* infection to *P. Malaria* was two to one in adults and one to one in children. Carriers of *P. Falciparum* crescents were found in children with a maximum of 25 per cent in the three to four age groups. Anopheline density varied eight-fold from dry to wet season, from 0.43 per room per day to 3.4. The vectors were *A. Gambiae* and *A. Funestus* in the proportion of two to one and average anopheline infection rates were 4 per cent and 5.2. per cent respectively. There existed wide deep borrow pits overgrown with pistea vegetation to the number of 280. Through the years they had come to provide for several needs of the town, tanks, bathing pools, and waste water disposal sites. One-third of them held water at the height of the dry season and breeding of both vectors in the same pit was frequent—the *A. Gambiae* in the muddy, sun-bathed edges and the *A. Funestus* in the clear water of the central overgrown area. 300,000 cubic yards of fill are required to close the pits and proposals for providing this formidable amount of material include the use of the ancient crumbling city wall.

(b) *Trypanosomiasis.*

24. The investigation and control of Trypanosomiasis is embodied in the following report of the Senior Medical Officer i/c Sleeping Sickness Service.

25. The Staff position improved gradually in respect of field officers. Leave incidence caused considerable lack of administrative continuity, and the limited medical staff had to undertake much work for the new Field Units. Senior officers are now posted to areas with headquarters at Kano, Anchau, Jos, Wamba or Makurdi. Arrangements were made for the transfer in 1948 to the new West African Institute for Trypanosomiasis Research of an experienced Sleeping Sickness Medical Officer, and of the Entomologist, his research staff and the Katabu field laboratory.

26. *Sleeping Sickness.*—New surveys were made, in four provinces, of districts on the fringes of the known endemic area. A Katsina district (Yandaka) had pockets of high incidence, up to 40 per cent in riverain villages, which contrasts with the finding of only four isolated cases in the same district in 1938. At Zuru, near the Niger-Sokoto border, where fly had been found in and near villages formerly thought to be fly-free, no infection was found in 6,000 examinations. Two districts east of Bauchi town are either free of infection (Darazo), or have sporadic cases (Kirfi—0.06 per cent), but foci of low incidence were found in two districts south-east of Bauchi (Duguri—1.1 per cent; and Zungur—0.7 per cent). Limited examination of villages in Ogoja Division, Eastern Provinces, shewed apparent high incidence, averaging 3.4 per cent. Full surveys are being arranged. At these new surveys a total of 81,000 people were examined and 543 cases of trypanosomiasis diagnosed.

27. Very extensive re-surveys were carried out in eight provinces, a 0.5 per cent infection rate (3,020 cases) being found in the 557,000 people examined. The position in Kano Province, including Hadejia, is most satisfactory, trypanosomiasis affecting only 0.2 per cent of the 250,000 people seen. In Plateau Province, with 1.1 per cent of 160,000 people infected, conditions are less satisfactory. The incidence is greatest in Shendam (1.3 per cent) and in Pankshin (2.4 per cent). Both treatment and control staff will concentrate on these divisions in future dry seasons. Apart from an isolated focus (4.7 per cent) in the Lame district of Bauchi, bordering on Plateau Province, which is to be more fully surveyed, and an incidence of 1 per cent in parts of Niger Province, the remaining surveys revealed rates around the average of 0.5 per cent. The comparative figure for 1946 was 0.98 per cent. Attendance at these surveys was excellent and commonly exceeded 95 per cent of the Native Administration census figures. A very adequate sampling of the endemic zone has been done within the year and no really large focus of serious infection has been found.

28. Dispensary staff, with little prodding from headquarters and with reduced supervision in Benue Province, was less energetic in carrying out local village surveys, examining only 86,000 people in 1947 as compared to 115,000 in 1946. The infection rate found was the same as in 1946, 0.9 per cent.

29. In the restricted mining areas, with a labour force averaging 4,000, over 35,000 examinations were made. The number of cases diagnosed dropped from 227 to 140. In Kabba-Ilorin and in Niger, where the numbers at risk are very small, the index of infections remains between 1 and 1.5 per cent. During the year prophylactic pentamidine was gradually introduced into all the principal camps in Wamba and Jema'a, with a total labour force of 3,500. In each of these areas the index of infections is half of the 1946 figure, and all the cases diagnosed occurred in subjects who had not been pentamidinized. The December returns showed only one case in Jema'a and none in Wamba.

30. Communal Protective Clearance. In infected areas of Shendam (Plateau) fly surveys showed close man-fly contact in numerous isolated small forest islands, many of which are, or contain, sacred groves. By the end of the year clearing of the less hallowed islands began. Detailed surveys were made in the Sumaila and Birnin Kudu districts of Kano, and plans for clearings, to begin early in 1948, were drawn up.

31. Actual clearing was undertaken in two districts. In the Kubau part of Anchau (Zaria) west of the railway and of the Anchau corridor, eight miles of stream were cleared to protect twelve crossings. Fifty-two points of man-fly contact in the Galadima district of Katsina were protected by clearings totalling over twenty miles in length.

32. The Anchau Tsetse-free Corridor. Steps have been taken to effect the handing over of maintenance to the Provincial Development Committee and to the Zaria Native Administration. The interim handing over period will begin in April, 1948, and, in the 1948-49 financial year, the Native Administration will contribute £1,300. During 1947, a Sleeping Sickness Control Officer was in local charge.

33. Eradication of fly in northern Ikara district was completed by the partial clearing of ten miles of stream and by making a ruthless barrier of one mile. This work was done by communal and not by paid labour. The corridor is now fly-free from the Lagos-Kano railway in the north to the Damau hills, South-East of Anchau. Between Damau and Banki, in the narrow neck of the corridor, work was started and over three miles of stream ruthlessly cleared by communal labour. This work will continue southwards to the link the main Zaria part of the corridor with the already-cleared Kano section around Dadinkowa.

34. Corridor villages are in good condition and general prosperity increased. The propaganda team made regular inspections and planted 600 citrus, 350 other fruit trees and 530 shade trees. The local sugar industry continues to expand. Ten new crushers came into operation. The local demand for sugar is high and large quantities are exported to Kano.

35. Farm and village livestock continued in good health. Interest in cattle is increasing and there are now 118 cattle in eighteen villages. Farm breeding stock has been reduced to a minimum and the area under cultivation for fodder correspondingly reduced. Village pig-keepers sold over five hundred weaners to the Agricultural Department for fattening. The Annual Veterinary Department camp attracted 13,570 cattle for immunization and the animal clinic did excellent work.

36. The ten village schools were open throughout the year. Children attend well and benefit accordingly, but adult attendances remain poor.

(c) *Yellow Fever.*

37. No further cases occurred in the areas where yellow fever re-appeared in epidemic form last year. The Mosquito Control Officer was settled in the area for about three months of the year with a staff of thirteen Sprayers and twelve Ex-Service Sanitary Orderlies who were receiving their field training in sanitation with special reference to mosquito control. On completion of work in Ogbomosho, the centre of last year's outbreak, the unit moved in succession into two towns in Oyo Province, Ede and Ife, each with a population of about 30,000. High aedes larval indices exclusively in water pots and dye-pots, co-existing with low larval aedes adult indices in houses, indicated a heavy mortality rate among young aedes and it was demonstrated that intensive house to house inspection in company with a responsible member of the household, to whom the findings were shewn, rapidly reduced the larval aedes index to less than half in each case within two weeks, and appeared so to reduce the adult aedes index that subsequent residual D.D.T. treatment could not significantly lessen it.

38. Railway personnel and their families received special attention and, using pay trains as travelling inoculation centres, employees and families were inoculated. This was carried out by teams under the direction of Sanitary Superintendents, throughout the Eastern and Western regions sections of the Railway and throughout a large part of the section in the Northern region. The number of inoculations exceeded 20,000.

39. The Yellow Fever Research Institute has carried out a wide range of research, much of which is directly applicable to current problems of yellow fever in Nigeria. Profound interest attached to the successful progress reported in the intensive experimentation on the possibility of producing locally a type of vaccine

material, suitable for scratch inoculation, which can be manufactured at low cost and which will be as free from danger and side effects as the 17D vaccine at present in use which will not be available much longer. Over a period of years many millions of doses of this costly vaccine have been freely gifted by the Rockefeller Foundation.

40. Great interest also attaches to the Institute's new lines of enquiry into the biology of mosquitoes, especially the yellow fever vector *Aedes Aegypti*. Using radio-active Isotopes as tracers, highly important information on the length of life and flight range was obtained. These experiments have made possible the precise measurement of those two very important factors in the epidemiology of many insect borne diseases.

(d) *Bwamba Fever.*

41. The Yellow Fever Research Institute continued its investigation into Bwamba Fever. Surveys by intracerebral mouse protection tests revealed this as the commonest virus disease in Nigeria. Further investigation of the disease next year will it is hoped lessen the present ignorance as to its epidemiology and clinical features, and it is thought that much of what passes now for "Malaria without demonstrable parasites" will prove to be this disease.

(2) EPIDEMIC AND ENDEMIC DISEASES

(a) *Relapsing Fever.*

42. An outbreak of louse-borne Relapsing Fever was first reported this year in July from Katsina Province, from the areas of Dutsin Ma and Katsina town about fifteen miles from the French West African border. Thereafter it spread to Kano and Plateau Provinces, including capital towns in both provinces, as well as foci scattered throughout the provinces especially in the Minesfield Areas. The disease nowhere attacked a very high proportion of the population but the total was appreciable—832 with thirty-five deaths—and the multiplicity of foci called for wide dispersal of control staff. Males constituted 98 per cent of the total attacked. Investigating units doing house to house visiting were supported by small mobile dusting units as well as static dusting posts on road and rail trade routes. Isolation posts of temporary construction were provided at those static dusting posts where required and Touring Treatment Units visited in rotation. Over 700,000 dusting treatments with D.D.T. were carried out in Plateau Province alone.

43. The epidemic coincided with a similar one in French Territory with the officials of which liaison was established on the lines laid down in the Anglo French Medical Conference held at Accra in 1946. Co-operation included arrangements for mutual supply of maps, drugs, and personnel when necessary, for concerted control of border epidemics, and for regular informal conferences of Medical Officers. The arrangements worked well in practice both in respect of Relapsing Fever on the northern borders, where units from Katsina hold meetings with French Units who were touring the heavily infected Tassuowa areas, and in respect of Cerebro-spinal Fever outbreak on both the Northern and Eastern

borders. The Medical Officers on both sides of the border co-ordinated their campaigns, erected control posts on main roads, and exchanged information of epidemiological importance. The same procedure was being carried out along the Bornu border.

44. The outbreak was controlled more readily in the towns than in the rural areas. Use was made of the Radio Diffusion Service at Kano to give advice on protection and, elsewhere, pamphlets in the vernacular were distributed. In this, as in other epidemics, village scribes lent valuable assistance.

45. The disease reacted dramatically to Intravenous N.A.B. in dosage of .6 gm-.9 gm repeated after six days. Children were treated with Acetylsarsen with equally satisfactory results and the manifest advantages of the simpler technique of this latter drug, *i.e.*, Intramuscular Injection of an already prepared solution, led to its more general adoption in the treatment of adults by the Touring Treatment Teams. Equally satisfactory results were obtained with 50,000 to 100,000 units of Penicillin either alone or as an adjuvant to N.A.B. treatment.

46. It was difficult to get records of untreated cases, but such as are available appear to indicate a case mortality of between 30 per cent and 40 per cent as compared with that of treated cases of somewhere in the region of 3 per cent.

(b) Cerebro-spinal Fever.

47. The incidence of this was lower than in 1946, 1,573 as compared with 3,107, with 350 deaths. Significant outbreaks occurred in Katsina, Kano, Benue and Cameroons. In the early reporting of cases and provision of temporary isolation, the training given to hundreds of village scribes in the Northern Provinces has proved most valuable. To their duties was added the giving of initial oral medication to suspected cases pending transference to the nearest treatment centre. This consisted of a draught containing 3 to 4 gm of Sulpha-pyridine per measured dose. Later treatment at centres consisted of Sulpha-pyridine suspension per intra-muscular injection and solu-pyridine or its equivalent for intravenous treatment in the worst cases.

48. In addition to the main propaganda on the danger of domestic overcrowding and contact infection, other measures were the temporary closure of markets, especially international markets on the Cameroons border in collaboration with the French Authorities, control of contacts and relatives of patients, and control of funerals, especially in the Cameroons where the ceremony of exorcism involved dissection of the corpse. In house to house investigation in Muslim areas the local temporary recruitment of additional female inspectors was of great value.

(c) Smallpox.

49. The total cases were 5,161 as compared with 7,620 last year. Deaths numbered 907. The epidemic of 1946 at Bauchi continued up till the middle of the year under review and provided 1,963 cases. In Sokoto an epidemic occurred with 962 cases. Elsewhere the disease did not assume grave epidemic proportions

but no province was free from occurrence. Vaccinations were, in the Northern Provinces, 1,514,863 ; Eastern 443,430 ; Western 561,171, totalling 2,519,464. In the Northern Provinces the efforts of Government and Native Administration vaccination staff, including temporary female vaccinators, were greatly aided by the hundreds of village scribes who had received a week's training in the elements of Smallpox control including vaccination. Control measures were formidably reinforced by the staff of the new Medical Field Unit which was called in. Vaccination in the Northern Region exceeded last year's total by half a million.

50. In epidemic diseases control a pleasing feature is the work of the village scribes whose active and informed participation in control measures, including recognition and prompt reporting, has been of great value. Registration of vital statistics, though incomplete and frequently faulty, is another factor which has in the North in many cases provided a valuable aid to epidemic control by the early detection of unusual mortality.

(d) *Leprosy.*

51. The estimated number of lepers in Nigeria is 400,000 of whom 100,000 are in an infective and 300,000 in non-infective stages.

52. The Central Leprosy Unit under a Senior Leprosy Officer, directly under the Director of Medical Services, co-ordinates and controls the work of Government and Government-assisted units in Onitsha, Owerri, Benin/Warri Areas. The C.M.S. Oji River Settlement accepted this control during the year and this settlement will now take charge of leper work in the area in a manner similar to that of Uzuakoli or Ossiomo.

53. The Central Unit has moved from the temporary quarters at Udi to the new premises at Oji River. These premises may in time become the nucleus of a re-sited Oji River Settlement.

54. The Executive units of leprosy work are :—

- (a) Government of Government-sponsored settlements with their dependent segregation villages and treatment centres ;
- (b) Non-government units varying from such projects as Itu Colony to small camps established and supported by Native Administrations, Missions or other bodies.

55. *Leprosy Settlements.*—Of these Uzuakoli (1,600 occupants) Oji River (1,200) and Ossiomo (1,000) are the most important. They segregate and treat infective leprosy patients, provide in-patient hospital treatment for inmates of the settlement, and for segregation village patients, give preventoria care to healthy children of infected parents, provide schooling for young leprosy patients, train nurses, and, at Uzuakoli, are at present engaged in research into the comparative efficiency of Sulphones in the treatment of Nigerian leprosy. Provision for wider research into chemotherapy has been made by the recent posting of Dr J. Lowe of the British Empire Leprosy Relief Association to Uzuakoli.

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56. *Segregation Villages*.—A varying number are linked to and controlled by the parent settlement, *e.g.*, Uzuakoli has thirty-five such villages with a total of 23,000 cases, and Ossiomo has seventeen villages. These villages provide land for food and economic crops, a housing site and often a house, some educational facilities and regular injection and other treatment. They have been on an extended trial as an inexpensive and practical solution to the great problem of how to deal with 100,000 infective cases. They are found to be of great value when under regular and specialised control.

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57. *Treatment Centres*.—Many are attached to parent settlements, as in the case of the twenty-six centres attached to Uzuakoli. These are considered the simplest practical method of coping with the 300,000 non-infective cases.

19
58. *Non-government Leprosy Units*.—These include the large Church of Scotland Unit at Itu, the important American-British Settlement at Ogbomosho with its several daughter segregation camps, nineteen Leprosy institutions in the Northern Region and several in the other regions operated by Missions of all denominations, either independently or in association with the Native Administrations concerned. The expanding Government leprosy service is pursuing its policy of associating itself more closely with the general direction and integration of those units which are adequate and the replacement of those which are less adequate.

59. *Itu Settlement*.—The largest leprosy colony in the Empire, with its 4,000 occupants and its high degree of industrialisation, constitutes a gigantic and successful social experiment where the specific treatment of leprosy is combined with the physical, social and spiritual regeneration of the patients.

60. Current projects of the Leprosy Service are :—

- (a) Advocacy of expanded *Hydnocarpus Niger* Planting, the aim being half a million trees.
- (b) More selective segregation of infective patients to give maximum protection to the vulnerable child population.
- (c) Increase in provision of children's preventoria.
- (d) Improvement of housing and educational facilities in all units.

61. The Central Leprosy Unit has greatly benefitted by the visit and advice of Dr G. A. Ryrie, the Medical Secretary, British Empire Leprosy Relief Association in October.

62. *Leprosy Returns*.—The following are comparative figures :—

	1946	1947
Cases under treatment	61,177	66,939
Cases discharged under observation ..	878	1,460
Treatment with <i>Hydnocarpus</i> Oil ..	2,234,695	2,745,626
Hospital admissions	2,535	2,809
discharges	2,522	2,725
deaths	67	114
Segregation Cases	7,096	7,729
Bacteriological examinations	25,128	25,473

These refer only to work done by the Central Government Leprosy Service and they do not include the many thousands of cases dealt with by Missions, Native Administrations and other bodies throughout the country.

(e) *Venereal Disease.*

63. Gonorrhoea 27,162 cases and Syphilis 16,590 cases, as compared with 29,563 and 17,549 respectively last year, have been treated in Government hospitals. This figure, 2 per 1,000 population, has no relation to the real incidence of the diseases. Gonorrhoea especially is very highly endemic and the first fruits of the Medical Field Unit surveys yielded rates of 25 per 1,000 in Benue and 125 per 1,000 in the Cameroons calculated on examination of males only. Even these are considered conservative figures obtained under field conditions. The Venerealogist, in putting forward during the year a detailed model provincial scheme, was constrained to calculate his requirements on a basis of 800 per 1,000 population requiring treatment.

64. In the Eastern Region, where gonorrhoea is so prevalent, it was estimated that at least 40 per cent were failed Sulpha cases due to inadequate dosage and resulting in either the development of sulpha-resistant strains or the production of a sub-acute or chronic residual prostatitis.

65. In the North, in Katsina, successful results with 20 day massive Mapharside Therapy for syphilis and with the one-shot method of 250,000 units Penicillin in oil for gonorrhoea have led to the adoption of these methods as standard.

(f) *Tuberculosis.*

66. No accurate assessment has been made of its magnitude as a Public Health problem throughout the country. A small tuberculin test survey in Bida among children about thirteen years of age gave 20 per cent positive reactors and the survey appeared to show that frank disease when present corresponded to the adult type found in temperate climates. The British Red Cross continued to concentrate their interests on the detection and prevention of tuberculosis in Lagos.

67. A mass miniature radiography set was in process of being assembled in Lagos during the year and an experienced Radiographer is available. The recruitment of a Tuberculosis Officer is in prospect; an expert from the United Kingdom has accepted an invitation to visit and advise on the proper approach to the problem. The possibilities of B.C.G. vaccination were studied, but further progress awaits the investigation of the efficacy of new storage methods of the vaccine which would make the project less difficult.

68. The Orthopaedic Hospital near Lagos has expanded from 60 to 145 beds, largely to accommodate surgical tuberculosis mainly spinal, and is evolving a method of quick iliac grafting which greatly shortens the stay in hospital.

(3) HELMINTHIC DISEASES

(a) *Ankylostomiasis.*

69. The number of cases receiving treatment at hospitals was 5,459, a figure which is no guide to its prevalence. Surveys during the year and laboratory

findings in over 20,000 examinations put the infestation rate at between 15 per cent and 30 per cent. The percentage is higher in selected cases showing signs of malnutrition and it is believed that in the production of the microcytic hypochromic anaemia so frequent in adult females ankylostomiasis is an important factor.

(b) *Schistosomiasis*.

70. The 2,844 cases reported bear no relation to its prevalence. It is particularly common in Adamawa Province (Yola) and Plateau Province, where it is not uncommon in school surveys to find more than half the children are infected with *S. Haematobium*. Foci are also scattered widely throughout other regions. Locally known as 'dog gonorrhoea', it is still closely associated and much confused in the public mind with true gonorrhoea to the detriment of the prophylaxis and treatment of both.

(c) *Guineaworm*.

71. Like Schistosomiasis this is mainly of the Northern Region. In Katsina Province, a 16 per cent case incidence was estimated. In parts of Benue and Yola it is also very common. High incidence was found in the Western Region along the western border where more remote townships without adequate water supply were seriously affected. The programme of well digging has been planned to accord fair priority to such projects as these.

(d) *Filaria Loa-loa*.

72. Cases attending hospital are few but special survey results during the year and the observations of medical officers restate the high incidence of the condition especially in the Cameroons, but also in the adjoining areas of the Northern Region and throughout the eastern part of the Western Region. It was found in close association with *Filaria Perstans* and *Onchocerca Volvulus* infection.

73. In the Cameroons, where a 25 per cent incidence was found in one survey, it was accepted that infection was inevitable within six months of residence. Calabar swellings predominated but ocular loiasis was also common. *Chrysops Silacea* was apparently the vector and naturalistic control of its probable breeding places by removal of vegetation from densely overgrown streams banks presented the serious problem of creating conditions favourable to the breeding of the chief malaria vector *Anopheles Gambiae*.

(e) *F. Perstans*.

74. This parasite was of extremely common occurrence in the Cameroons and was demonstrated at surveys in over 50 per cent of unselected population samples there. The traditional views of the innocuousness of this parasite became less firmly held during the year when attention was focussed on two deaths from unusual cardiac symptoms, of known *filaria perstans* carriers.

(f) *Onchocerciasis*.

75. Of frequent occurrence in some localities, 11 per cent of population samples surveyed had nodules. On the analogy of earlier surveys this indicates a 50 per cent infestation rate. The extent of eye damage attributable to

Onchocerciasis is ill-defined, but there is some evidence that in the Adamawa and Eastern Benue Provinces, abutting on the Cameroons, Onchocerciasis Blindness is of significant occurrence.

B. General Measures of Sanitation

(1) WATER SUPPLY

76. (a) *Urban*.—Of an estimated total population of twenty-two millions, 2,000,000 live in towns of various sizes. The supply to these towns includes fifteen Government and thirteen Native Administration piped water supplies, supplying over nine million gallons to over 1,400,000 persons. There are in hand schemes for three new plants and four extensions and preliminary investigations for a further thirteen are proceeding.

77. (b) *Rural*.—One of Government's aims in the next ten years is to have the number of rural water supplies increased by 18,000. To this end, 676 water supplies have been constructed by Government Departments. Two-thirds of this number consist of wells, while one-third consists of some form of permanent impounding of surface water. Native Administrations, Missions, Schools, and private persons have during the year contributed a great many more as sited, advised and approved by Government or Native Administration Inspectorates.

(2) SEWAGE DISPOSAL

78. With the exception of two small systems in Lagos, sewage systems are unknown. The more highly developed urban areas are required to provide water borne systems with septic tanks and local disposal: in other towns the conservancy system generally obtains. In the Northern Region, composting of nightsoil and domestic refuse on a wide scale has become the method of choice and has made possible the return to the soil of a large amount of a product of high manurial value. In the South this method is gaining ground.

79. In addition there was in Ibadan a successful trial installation of the "Uganda" or "Accra" method of nightsoil disposal. This consisted essentially of direct discharge into a septic tank *via* a smooth vertical cylinder which passed a few inches below the maintained fluid level of the tank. A few buckets of water once or twice daily washed the contents into the main body of the tank and also maintained the water level, causing very little disturbance of the septic tank contents in the process and interfering in no way with the digestion of the contents. It is to be tried out where public latrines are required in many small townships in which absence of fittings, of piped water supply, and of adequate drainage makes orthodox water carriage systems impracticable and where heavy usage makes existing bucket conservancy systems very unsatisfactory.

(3) REFUSE DISPOSAL

80. Up till recently the method of choice of disposal of refuse has been by burning and in many villages incinerators have become prominent features. With the introduction of the composting system, however, a large portion of waste is

now being turned to valuable use in the Northern Region and in many parts of the other regions. Elsewhere as far as practicable in Ibadan, Abeokuta, Akure, Jos and several other towns, a great amount is used in the controlled reclamation of swamps, borrow pits, and similar dangerous areas.

(4) INSPECTION OF NUISANCES

81. House to house inspection for the detection and prevention of statutory nuisances constitutes a very large part of the work of the Sanitary Inspectorate. In the Eastern Region, for example, consolidated returns show that 271,161 house to house inspections were made, that 4,125 abatement notices were served, and 1,254 householders prosecuted for non-compliance with these.

C. School Hygiene

82. Lagos School Medical Service has expanded both in its routine examination of scholars and in the work of its general and special clinics. Records of examination by the Lady Medical Officer of 1,840 girls during the last half of the year have given a good cross-section of child and adolescent health in Lagos. In 12 per cent, Hyporiboflavinosis (deficiency of a Vitamin B component) was found ; in 83 per cent there were intestinal worms ; and sub-Tertian Malaria was demonstrated in 8 per cent of the children as compared with 30 per cent in 1945.

83. In the Clinic section of the school health service, of 11,757 new cases 14 per cent had symptoms referable to the eyes, one-third of these were ocular symptoms of nutrition deficiency (Hyporiboflavinosis) and one-quarter were cases of Myopia.

84. In the provinces, a school service on the Lagos scale is impracticable with present staff, but school visiting forms an important item in the work of medical and sanitary staff on tour. Examination of premises, of school meal arrangements, and of pupils for prevalent disease, signs of malnutrition, or evidence of satisfactory immunization against smallpox, is followed by discussion of the hygiene curriculum and its practical application to personal, school, and home hygiene. Such inspections leave no doubt that the training of school children in personal and community hygiene is one of the major factors in the country's health education.

D. Labour Conditions

85. Labour Health areas have received close inspection during the year. Although over-crowding existed and it was still possible to find two families occupying one room, this improved, and a real effort was made to give a married couple a two-roomed dwelling. Regulations were drafted to improve conditions by getting away from the conception of " lines " and providing either detached or semi-detached dwellings, or terraces containing not more than six dwellings, placing a limit of twelve to number of dwellings per acre, and generally providing some privacy. Some labour housing estates in the Sapele-Benin labour health areas and the Enugu Colliery have anticipated these requirements : others, as in Burutu, made a rapid conversion of buildings by which they provided seventy extra rooms for existing occupants of the quarters.

86. In the North, steps have been taken to frame regulations under the Labour Code Ordinance, 1945, to come into operation in the immediate future whereby much of the minesfield area of Plateau Province and the region abutting on it will become a labour health area. The regulations will give legislative sanction to, and will amplify the existing directions of, the Medical Department's "Sanitation in Mines Camps" pamphlet. Medical arrangements in the Minesfields continue to be of great value to the mining and neighbouring non-mining populations alike. In its operation, the Senior Medical Officer in charge of Minesfield has the assistance of the newly formed Mines Medical Advisory Board. The following statistics of the hospital and dispensary activities of the Minesfield Medical Service show the amount of medical work among miners and the local population :—

	<i>Total In-patients</i>		<i>Total Out-patients</i>		<i>Total Attendances</i>		<i>Mines Accidents</i>
	<i>Mines</i>	<i>Local popu- lation</i>	<i>Mines</i>	<i>Local popu- lation</i>	<i>Mines</i>	<i>Local popu- lation</i>	
Hospitals ..	2,893	6,343	5,174	48,279	26,542	201,038	175
Dispensaries	1,472	874	10,191	21,547	62,188	98,498	—
Total ..	4,365	7,217	15,365	69,826	88,730	299,536	175

E. Housing and Town Planning

87. Town Planning Officers from the Public Works Department have been posted to each region and schemes for several towns, including Kaduna, Kano, Jos, Zaria, Ibadan, Oyo, Enugu and Port Harcourt, are under preparation as are several minor schemes for small townships. Much building is going on in all three regions.

88. The value of some schemes has in recent years been lessened by speculative building designed for subsequent conversion into multiple mean lodgings. Stricter control of this is now being achieved and the first steps in the much needed reduction in building percentage per residential plot from 50 per cent to 33 per cent, and to 25 per cent in the case of two-storied buildings, are now being taken.

89. In Lagos, town planning is a function of the Lagos Executive Development Board. Among its year's activities were :—

- (a) *Lagos Township*.—The preparation of schemes for traffic routes and Railway stations, and the scrutiny of building plans on which 451 building permits have been granted out of a total of 492 applications. A provisional zoning scheme for the whole township has been approved.

- (b) *Lagos Island*.—A new plan for the future development of this area has been prepared with roads, building lines, reclamation areas, open spaces, market sites and zoning.
- (c) *Apapa Area*.—A scheme for future development has been prepared. It includes the concentration of all Lagos wharfage and lays out Apapa as a self-contained area with roads and residential, commercial and industrial zones. The scheme has met with popular approbation after public exhibition and has been finally approved.
- (d) In the Ikeja District, in the environs of Lagos, detailed plans have been prepared for several areas.

F. Food in Relation to Health and Diseases

90. Inspection and control of foodstuffs forms an important part of the duties of the Sanitary Inspectorate. Aerated water factories, of which there are six in Lagos, were inspected and samples were analysed bacteriologically every fortnight. Corn mills and bake-houses were also regularly inspected. There are a great number of African food preparing places and in Lagos alone over 20,000 inspections of these were made during the year.

91. The protection of foodstuffs has been made the subject of Byelaws during the year and the Medical Officer of Health, Lagos, obtained the interest and co-operation of market women and others concerned with food vending, by public lectures and demonstrations with the epidiascope.

92. Nutrition studies, both clinical and dietetic, have been carried out, mainly in the Bida District of Niger Province. Diets of peasant communities in each of three typical hamlets in widely separated areas of the district were studied by full-week surveys repeated at three monthly intervals throughout the year. Diets were measured, analysed, priced and compared. As expected, a high degree of riboflavin lack was found in all the diets and in 62 per cent of the subjects. In addition there was found a lack of Vitamin A, both dietetic and clinical, in the northern hamlets above the palm oil belt. There, night blindness was locally understood as a deficiency disease which disappeared with the seasonal coming into use of the edible green leaves of the baobab.

93. The correlation of riboflavin deficiency and impaired liver function was also studied in this area. 41 per cent of Hyporiboflavinosis subjects shewed impaired liver function as measured by the frank presence of urobilinogen in the urine, while a small control group shewed 6 per cent impairment only. Biopsy from the liver margin in positive cases shewed fatty infiltration and portal fibrosis.

94. Multiple less-sustained surveys were carried out throughout the country by officers on tour. In field and school, in prisons and communities, Riboflavin, Vitamin A, Protein, Chlorine and the factors which prevent Pyorrhoea, were found lacking in most areas, while iodine was conspicuously lacking in Benue and Cameroons.

95. Hyporiboflavinosis varied in incidence from 12 per cent in Lagos children to 62 per cent in Bida. Even special communities such as fisher folk were not immune. In them an adequate supply of protein of high value, and fair Riboflavin Content could not prevent the appearance of very specific signs of riboflavin lack in the tongue, the corners of the mouth, the coverings of the eye, and the glands of the skin.

96. In special and general surveys, pyorrhoea was found in school children to a degree of 75 per cent to 80 per cent. Iodine deficiency localised and long recognised was frequent in Benue and Cameroon Provinces. One survey shewed an incidence of 9 per cent in adult females.

97. Propaganda was focussed on the need for added protein and fat staples as well as riboflavin by using groundnuts as a food crop, as well as an economic one, and by making animal protein supplies more freely available. Attention was also specially drawn to edible green leaves. This required the teaching of no new habit but the stressing of one which, though fitful and weak in normal times, returns with the force of a powerful instinct when famine threatens.

98. For hyporiboflavinosis coming under medical care and for the supplementing of the diet in special communities such as prisons, dried yeast in large quantity was used with great effect.

99. The marketing of iodised salt continued effectively in goitre areas and efforts were made to discourage many of the local salts so deficient in chlorine and so excessive in silica content.

G. Health Education

100. A series of talks on local aspects of general and community hygiene have been given on the Radio Diffusion Service at Ibadan and Kano. The Medical Department's booklet "Food in relation to Health" has become standard and many school diets are modelled on it. In the North a new booklet has been prepared for translation into Hausa. In the Northern Territories there is an increase in the practice of bringing headmen and scribes from villages and giving them a week's teaching in the occurrence and control of prevalent diseases. On their return, they link the Medical Department and the public and form valuable interpreters of Medical and Health policy to the community. The schools are one of the greatest factors in health propaganda. In all of them a comprehensive course in personal and rural community hygiene is given. A number of Provincial Development Committees which co-ordinate projects under the Development and Welfare Plan have taken steps to make health and welfare projects more widely known to the public. The Health propaganda film unit, a pioneering venture planned and operated for many years by the Medical Department, has given throughout Nigeria many hundreds of shewings of the several health films it has made. The unit now functions actively as a section of the Public Relations Department.

VI. TRAINING OF MEDICAL SERVICES PERSONNEL

101. The greatest single factor in the present scheme of expansion of medical and health services is the rate of supply of qualified medical staff and trained ancillary personnel. The existing and projected training facilities are here summarised :—

(a) *Doctors*.—A Medical School at Lagos gives a five-year course on standard lines with the usual pre-medical training. Forty-nine registered practitioners from this school are now in Nigeria ; thirty-five of them are on the medical staff of the Department. The course is accorded partial recognition by the Royal College of Surgeons, England, and Royal College of Physicians, London, and recommended students who have successfully completed the course in Lagos, may, after one year's clinical work in an approved hospital, after having been examined in Anatomy, Physiology, and Pharmacy, present themselves for the final examination of the Royal Colleges. The school in 1948 will commence transfer to the newly created University College, Ibadan, with, eventually, a greatly increased capacity for students and, it is hoped, full recognition by the General Medical Council of the United Kingdom. Six students successfully completed their final examination during the year.

(b) *Dentists*.—No local facilities. Until this faculty is created, University College, Ibadan, may bridge the gap by providing some instruction to Medical Students. A scholarship scheme is being planned under which dental students, or medical practitioners qualified at Lagos Medical School, will proceed to Great Britain for full training as Dental Surgeons. Meantime, six Dental Technicians began training in 1947, and basic standards of technical attainment are being worked out.

(c) *Pharmacists*.—A school exists in association with the Medical School, Lagos, and a three-year course is given to students of University entrance standard. This course is based on the Chemists and Druggists examination requirements of the United Kingdom. Four students passed their final examination in 1947.

(d) *Nurses*.—Twenty-three Government hospitals where Nursing Sisters are stationed are recognised teaching schools. A three-year training before registration is given to selected probationers of adequate educational standard. The course is modelled on standard lines as regards basic instruction, although otherwise freely adapted to serve Nigeria's needs. Native Administration and Mission Hospitals also trained nurses, but hitherto limited recognition, short of registration, has been given. This year approval has been given that units which comply with the requirements of the newly constituted Nursing Council in regard to standards of hospitals, of tutors and of selection of pupil nurses, may present candidates for government examination and subsequent registration. 100 nurses were registered in 1947.

The power of the Nigerian Nursing Council, appointed last year by the Registration of Nurses Ordinance, is to be reinforced by Regulations which deal with its procedure and functions and provide it with Advisory and Executive Regional Committees. It is actively considering details of acceptable standards of

training schools and of the selection and training of nurses, midwives and health visitors, including a compulsory basic training for all these.

(e) *Midwives Grade I.*—Facilities exist for the training of these in Lagos, Calabar and Aba. The course is a comprehensive one of two and a half years, but it is the present intention to increase this to three and a half years in order to include more instruction in general nursing. The standard is comparable with that of the certificate of the Central Midwives Board in the United Kingdom. They serve in Maternity Hospitals or are posted to Government and Native Administration Grade II Midwives' Training Schools. In 1947, twenty-two were trained.

(f) *Midwives Grade II.*—The course is designed to give a good practical training in Maternity and Infant care to women of lesser education and extends over one year. The course is given in five Government Centres, three Native Administration Centres, and in eighteen Mission Centres. In 1947, eighty-six passed the examination.

(g) *Sanitary Inspectors.*—Training schools exist in Lagos and Kano, and a school is being opened in Aba. The course, which admits students of adequate education, is based on preparation for the Royal Sanitary Institute examination for which students frequently present themselves successfully. Last year fourteen students successfully passed the Government test and eight passed the examination of the Royal Sanitary Institute. There is in addition a school at Ibadan giving a year's course of study. This is intended for Native Administration Sanitary Sub-Inspectors; here emphasis is laid on practical rural hygiene and sanitation. Twenty-three passed in 1947.

(h) *Laboratory Technical Assistants.*—The syllabus and training of these is designed to produce a high standard of reliability and competence comparable with that of trained United Kingdom Laboratory Technicians. Students of Middle VI or Cambridge School Certificate educational standard are given a three years' course in the Pathology Department, Lagos. During the year there was introduced an intensive whole-time preliminary three months' training course by a Senior Laboratory Superintendent at the Medical Research Institute. Students were limited in number to nine.

In Kano, the Regional Pathologist is commencing the training of Technical Assistants and is providing facilities for training Native Administration Laboratory Assistants.

In Port Harcourt, a preliminary three months' course on the lines of the above has been introduced. Successful candidates thereafter are trained in Lagos.

(i) *Assistant Physiotherapists.*—Twelve Assistant Physiotherapists-in-training, of a suitable educational standard, have completed their first year at Igbobi (Lagos) Orthopaedic Hospital. This unit, with an Orthopaedic Surgical Specialist, two certificated Physiotherapists, a certificated Radiographer and several Limb-fitters, has 145 beds and has full facilities for orthopaedic surgery and rehabilitation, including adequate equipment for X-ray, Electro-therapy, Massage, Gymnasium, Swimming, Occupational therapy. Teaching is modelled on the three years'

syllabus of training of the Chartered Society of Massage and Medical Gymnastics and recognition will be sought from this body in addition to local certification.

(j) *Dispensary Attendants*.—The training of Native Administration Dispensary Attendants consists generally of being posted to the local Government or Native Administration hospitals. In Kano, there was opened in April of this year a school for Native Administration Dispensary Attendants from all over the Northern Region. This aims at raising the standard of training generally and in particular giving attendants some knowledge of the causes and prevention of diseases as well as simple methods of treatment.

(k) *The Medical Field Unit School* at Maiduguri has already been referred to. It has a capacity for 100 pupil orderlies per annum and completed the training of the first 100 at the end of the year.

(l) *Miscellaneous*.—In many units throughout the country there is carried out the important though less formal training of Sanitary Orderlies, Microscopists, Leprosy Attendants and many others.

VII. PORT HEALTH WORK AND ADMINISTRATION

102. No sea-port or air-port has been declared infected during the year. Lagos sea-port and environs have shown a decline in incidence of formidable epidemic disease, as follows :—

	1945	1946	1947
Smallpox	155	123	28
Typhus (murine)	14	9	6
Cerebro-spinal Meningitis	10	3	2

103. *Malaria* among merchant seamen amounted to fifty cases, twenty being in one ship lying for several months under repair in the Pool. Permanent actual and potential anopheline breeding grounds were found to exist in the form of derelict vessels and lighters, while canoe and small boat inspections (18,138 inspections) revealed forty-one anopheline breeding foci.

104. *Plague*.—The Medical Officer of Health, Lagos, examined 7,840 rats for plague, with negative result. The rat population is maintained by the presence of permanent breeding grounds, notably the stone revetment along the foreshore from the Yacht Club to the North Custom Wharf. The effect of gassing on this is a very temporary palliation and a permanent remedy is being sought. In parts of the Eastern Region, 15,000 rats were examined for plague, with negative result. The average *Xenopsylla Cheopis* flea index was 1.13.

105. *Venereal Disease Prophylaxis*.—At the Venereal Diseases Clinic, Apapa, 1,236 prophylactic treatments were given to merchant seamen. These are in addition to prophylactic treatments given in Lagos General Hospital Venereal Diseases Clinic.

106. A Sanitary Superintendent has been appointed to Ikeja Airport for the more efficient carrying out of quarantine regulations in view of the great increase in air traffic. During the last six months of 1947, the Lagos Airport

Health Services dealt with 1,182 arrivals and 1,182 departures of aircraft on international flights. At Kano Airport, the health service dealt with 1,150 aircraft during the year and was particularly concerned with the prevention of the entrance of Cholera from Egypt by this route.

VIII. MATERNITY AND WELFARE SERVICES

107. The demand for these services is very great in the South and rapid extension, especially of Native Administration services, is the rule. Homes are multiplying at a rate that sometime embarrasses owing to the difficulty of supervision. Expanding training facilities for staff and the projected institution of Government Rural Health Centres will it is expected provide the staff and the supervision necessary. The Northern Region is most conservative in this respect for racial and religious reasons. The southern fringe of the Northern Region is largely of Yoruba culture and to them these services are very attractive. Some progress, however, can be recorded in the farther north, where efforts are made to ensure continuity of service of the supervising Nursing Sisters. From Kano there were 992 ante-natal cases and 2,400 infant welfare cases. From Katsina, 656 ante-natal cases and 2,414 home visits, in addition to which, touring in the districts by the Supervising Nursing Sister has interested many mothers. In Sokoto there were 123 ante-natal cases, and 2,668 ante-natal visits were paid by Health Visitors to women in Purdah. In the Eastern Region, in Port Harcourt, 44 per cent of registered births subsequently attended the infant welfare clinic.

108. The training facilities referred to elsewhere are being expanded. The fifty-four-bed Maternity Hospital at Massey Street, Lagos, has last year doubled its intake of pupils. This institution also provides staff and material for theoretical and practical training in Obstetrics and Gynaecology in the Medical School.

109. At this hospital alone, 7,350 new ante-natal patients were seen, with a total ante-natal attendance of 34,350, compared with 5,454 and 24,702 respectively in 1946. Items in general ante-natal examinations which were found of especial local significance included :—

- (a) Blood Pressure : abnormally low blood pressure in pregnant mothers of Lagos was frequent and significant.
- (b) Routine Pulse and Temperature : this resulted in the detection of many cases which, though but slightly outwith the limits of normality, clearly shewed lowered resistance to labour and its complications.
- (c) Diet Enquiry : Balanced diets and prevention of avitaminosis, including the intelligent use of palm wine and red palm oil were taught verbally and by printed pamphlet.
- (d) Routine Kahn Tests especially of Primiparae.

110. Admissions to the hospital totalled 2,258 obstetric cases with thirty-nine deaths ; of these there were : Eclampsia simple or combined (8) Obstructed labour (7) Postpartum haemorrhage (8), Retained Placenta (4). 523 ante-natal cases were admitted with nine deaths, four of which were from acute anaemia.

The neo-natal death rate increased from thirty-six to forty-five. One of the main causes of maternity and neo-natal mortality was a persistence of belief in the efficacy of local medicines and of tribal obstetric methods, as found frequently in the case of admission of regularly attending mothers and practically always in the case of emergency admissions.

111. The gynaecology section of Massey Street Hospital shewed 592 new cases, more than half of which were for sterility. Sixty-two tubal insufflations were performed.

IX. DENTAL SERVICE

112. A Senior Dental Officer was appointed and took up his duties in October. Despite staff shortages for much of the year, a considerable increase in work is recorded.

113. The Lagos Dental Centre has had under training four Technicians, while both at Jos and at Enugu, a Technician is under training, making a total of six. Basic standards of technical attainment are being worked out preparatory to the classifying and grading of those technicians.

114. The Dental Officer, Enugu, carried out a Dental inspection of over 4,000 school children, covering the age groups of Primary Middle and Secondary Schools, and reported that only 3.2 per cent had carious permanent teeth compared with about 60 per cent in England in similar surveys. In sharp contra-distinction to the freedom from caries was the high prevalence (75 per cent to 80 per cent) at surveys throughout the country of heavy 'tartar' deposits of salivary calculi on the teeth, with the inevitable production of pyorrhoea and the not infrequent sequelae of osteomyelitis of the jaw in neglected cases. Soft food, lack of mastication and hypo-vitaminosis were considered factors in the production of the alkaline mouth in which those conditions developed.

115. A comparative summary of dental work carried out is as follows :—

	1946	1947
Extractions	2,499	3,927
Fillings	1,767	3,437
Scalings	800	1,063
Dentures	474	823
Dressings	—	744
Root Treatments	—	105
Repairs	191	274
General Surgery	—	67
General Anaesthetics	—	136
New Patients	2,018	7,279
Attendances for treatment	6,054	11,720

X. HOSPITALS, DISPENSARIES AND OTHER UNITS

A. EXISTING MEDICAL FACILITIES

116. These include :—

	<i>Government</i>	<i>Native Administration</i>	<i>Mission</i>	<i>Private</i>
Hospitals	59	15	34	18
Small Maternity Homes	—	56	59	—
Maternity and General Hospital beds	3,724	1,928	2,850	225
Rural Dispensaries	—	510	—	—

117. Some figures indicative of the use of hospital and other medical facilities include :—

	1946	1947
Government and Native Administration Hospital In-patients (new cases).	118,912	121,316
Government and Native Administration Hospital Out-patients (new cases).	1,015,553	1,067,092
Government and Native Administration Hospital Major Operations.	—	28,549
Government and Native Administration Hospital Minor Operations.	—	23,597
Government and Native Administration Hospital Maternity Cases.	—	19,941
Native Administration Dispensaries ; new cases ..	1,775,261	1,972,926
Native Administration Dispensaries ; total attendances.	6,230,926	6,238,066
Government Sleeping Sickness Service ; total examinations.	508,745	760,067
Government Leprosy Service ; total treated ..	61,177	76,793
Total Injections ; Hydnocarpus preparations ..	2,234,695	2,745,626

B. ADDITIONS TO HOSPITALS AND TRAINING SCHOOLS

118. At Akure a new hospital has been under construction throughout the year and the first instalment of 30-bed Ward Unit, Operating Theatre, Kitchen, Laundry, Nurses' Quarters and Mortuary is nearly complete and will be used for males. Concurrently the existing hospital is being remodelled to cater for in-patient females both maternity and general medical and surgical.

At Abakaliki, the first instalment of the new hospital was completed ; it includes a 30-bed ward, theatre, kitchen, mortuary, staff quarters, and this unit has been brought into use.

At Victoria, a 120-bed hospital was opened in February and became very popular. It comprises general and maternity and welfare sections.

At Offa, a hospital has been completed and will be opened early in the new year.

Adeoye Hospital construction during the year has made provision for 138 beds in place of 88. These are to be opened in 1948.

At Onitsha, work has commenced on the construction of a new hospital.

At Okigwi a maternity ward was opened.

At Enugu, new temporary wards were added to the General Hospital, thus making an additional 60 beds available.

At Degema and Obubra housing for staff has been constructed.

At Aba, a Sanitary Inspectors' Training School has been virtually completed and a Nurses' Training School has been commenced.

At Makurdi, a training school for Field Unit Orderlies was adapted from available army huts.

C. RURAL HEALTH CENTRES

119. All that has been accomplished is the siting of the first centres. There has been much discussion of their prospective functions and it can be said that in addition to their supervising and unifying that network of Native Administration dispensaries, maternity homes and sanitary posts which is the major part of the Native Administration's great contribution to the health service of the country, these units will aim at providing means whereby the surrounding population can reach and sustain their own maximum capacity for health. In this they will co-operate with the department of Social Welfare in their aim to promote improved conditions of rural living and their plan for the provision of community centres in rural areas. This application of sociological concepts and methods to medical projects is of course no new thing to Nigeria where the Anchau Tsetse-Free Corridor in the Northern Region and the Church of Scotland settlement for leprosy in Itu have already taken their place among the successful experiments in social medicine of our time.

D. MEDICAL FIELD UNITS

120. Provided with a base and equipped for mobility, composed of a Medical Officer, Sanitary Superintendent and at least 25 Orderlies, the medical field unit is designed for operations in general public health in a way comparable to Sleeping Sickness Teams in their particular field. It is an instrument for rapid control work in epidemics and for organising on a field scale the investigation, treatment and control of endemic diseases and states of subnormal health. Two were established during the year in Benue Province and the Cameroons.

XI. MENTAL HEALTH

121. An Alienist and a Head Mental Nurse from the United Kingdom assumed duty during the year and have re-organized the existing small mental hospital at their headquarters in Abeokuta. Systems of treatment have been laid down and put into effect and include a wide variety of planned occupational and recreational pursuits. A course of training for Mental Attendants both at Abeokuta and Lagos has commenced. This is a stage in the eventual formal training of Mental Nurses to Nursing Council standards. A fortnightly clinic for Mental and Nervous diseases has been established in Lagos by the Alienist.

II. LABORATORY SERVICE

122. The Laboratory Service consists of two headquarters units, at the Medical Research Institute, Yaba, and at the Pathological Department of the General Hospital, Lagos, and of twelve outstation units in principal centres up country.

123. *Headquarters, Lagos.*—In addition to the administration of the laboratory service, the work done consists of Clinical, Pathology and Bacteriology, Manufacture of Vaccine and Sera, Teaching and Training of Medical Students and Technical Assistants and Research.

I. *Clinical Pathology Examinations* (Note—The figures in brackets refer to 1946).

Blood—11,625 (8,052) of which 13. 6 per cent (11.2 per cent) were positive for Sub Tertian Malaria.

Faeces—9,117 (7,200) with Ascaris and Hookworms predominating.

Urine—7,463 (6,169) urethral smears with a 50 per cent positive incidence of gonococci.

Sputum—3,376 (4,286) with 21 per cent positive incidence of Tubercle Bacilli.

Nasal Smears for Leprosy—55 (124).

Biochemical—600 (218).

Miscellaneous—291 (407).

Histopathology—992 sets of tissues were examined (956). In 146 (131) malignant tumours were encountered, squamous Carcinoma of the skin (16 per cent) and Malignant Melanoma 8 per cent predominating.

Liver Research—1,704 (1,241) blocks of tissue were prepared for continuing research on the liver of the local population.

Rabies Investigation—Sixty-eight brains were examined by section and animal inoculation and twenty positive cases drawn from all three regions were found.

Yellow Fever—Ten specimens (20) of suspected liver were examined and none (10) were found positive.

Post-mortem—These totalled 507 (556) sixty of these were Broncho Pneumonia, sixty-five all forms of tuberculosis and fifty-two Sub Tertia Malaria, Cerebral and otherwise.

II. Bacteriology :

A. *Serology*—A total of 1,187 (1,273). Agglutination tests were performed ; these included

- (1) *Salmonella* and enteric type organisms 444 (570) with 102 (85) positive findings.
- (2) *Brucella* 175 (198) with 2 (2) positive findings.
- (3) *Weil Felix*—444 (544) with Proteus O₁k positive. 34 (7) O₂ positive 2 (1) and protein O₁9 positive 35 (47).
- (4) *Kahn Tests*—9,960 (5,947) with 2,356 positive.
- (5) *Ide Tests*—Confirmatory of doubtful kahn tests and on sera insufficient for kahn test, 668 (486) with 347 positive.

B. *Cultures* in blood urine and faeces numbered 1,078 (954), 935 of these were faeces cultures with 11.7 per cent positive isolations. In one-third of the cases the organism was *Shigella flexneri* 11 (W).

Miscellaneous tests including routine culture from inflamed eyes from Cerebrospinal fluid, suspected Anthrax Lesions. Examinations of the Yellow Fever Research Institute vaccine preparation numbered 821 (551).

C. *Antigen and Media Preparation*—This amounted to Kahn Antigen 708 (740) Ide Antigen 2,114 (187) Culture Media of different types 225,150 (293,260) of which as in previous years about 20 per cent was for army use.

D. *Vaccine*—Smallpox Vaccine—The yield of pulp was 13,294 gms from 402 sheep (19,251 : 524). The importance of rapid usage of animals in maintaining a low mortality rate was again noted. Delay in usage during the non-production season led to high mortality from pneumonia and respiratory diseases to which Kano sheep on a Lagos diet appear particularly prone. Vaccine issued totalled 2,613,620 doses (2,316,720) including 10,000 doses to the Army and 160,000 doses and 100,000 doses respectively to Gold Coast and Monrovia. Stocks of vaccine are at such a level that production will be suspended until 1949. Reconstituted French Dried Vaccine was used in a trial vaccination of three months old children with generally good results.

Research in vaccine production—The use of lanolated vaccine and glycerinated and lanolated vaccine as seed virus for vaccine production was found to give generally good results.

Rabies Vaccine—81,600 ml. (70,370) were prepared. The potency and stability of the vaccine were tested and found satisfactory.

T.A.B. Vaccine—3,410 cc (3,375 cc) of the same Felix strain as before were produced.

1,640 (1,845) Yellow Fever inoculations were given to meet the travel requirements of residents of Lagos and environs.

Teaching—In the course of the year five students out of eight presented, passed the second professional examination in Pathology, Bacteriology and Parasitology.

Special Investigation—Dr B. G. Elmes and R. B. T. Baldwin have made a further contribution to the continuing study of "Malignant Disease in Nigeria". In so far as his absence during a large part of the year allowed, Dr Cannon's Rat Nutrition Experiments in connection with liver studies in the Lagos population have continued.

124. *Out-station Work*—Notable features are the opening of two new stations at Abeokuta and Ibadan, which raises the total to twelve.

The augmentation of the status and scope of Kano by the posting of an Area Pathologist has been effected.

The following examinations were made in out-stations :—

Blood films 34,467 (30,106) with 25 per cent positive for S.T.M.

Urine examinations 22,027 (21,958).

Faeces 20,921 (23,260) with a 30 per cent infestation of Ankylostomiasis.

Ide Tests for Syphilis 8,610 (3,310) with a 25 per cent positive findings.

Sputum examined 3,377 (3,120) with 16.6 per cent positive Tubercle Bacilli.

Miscellaneous Smears 8,719 (7,781) and examinations.

Post-mortems 404 (257).

XIII.—METEOROLOGY

125. The following are the meteorological returns for the year :—

<i>Station</i>			<i>Absolute Shade Maximum °F</i>	<i>Absolute Shade °F</i>	<i>Mean Maximum °F</i>	<i>Mean Minimum °F</i>	<i>Mean Real Humidity % 7 a.m.</i>	<i>Total Rainfall (inches)</i>
Calabar	..	..	93	65	86.2	73.2	97	111.02
Enugu	..	..	96	62	87.8	72.4	90	90.57
Ibadan	..	..	102	56	88.5	69.3	99	54.81
Ilorin	..	..	101	55	89.9	70.9	90	55.56
Kaduna	..	..	100	52	89.1	65.5	72	46.25
Kano	..	..	105	47	91.8	66.4	61	31.40
Lagos (Ikeja)	..	..	96	61	87.7	71.7	98	69.95
Lokoja	..	..	102	59	90.2	73.3	89	40.04
Maiduguri	..	..	108	45	94.6	66.0	76	25.11
Yola	..	..	108	57	94.5	72.2	68	34.36

TABLE I
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1947
EUROPEANS AND AFRICANS

<i>Diseases</i>	<i>In-Patients</i>	<i>Deaths</i>	<i>Out-Patients</i>	<i>Deaths</i>
1. (a) Typhoid Fever	58	12	2	—
(b) Paratyphoid Fever	12	—	—	—
2. Typhus	31	3	—	—
3. Relapsing Fever	544	31	7	—
4. Undulant Fever	1	—	1	—
5. Smallpox	544	106	128	—
6. Measles	215	3	935	—
7. Scarlet Fever	1	—	1	—
8. Whooping Cough	151	15	2,402	—
9. Diphtheria	2	—	1	—
10. Influenza :—				
(a) with respiratory complications	35	—	160	—
(b) without respiratory complications	—	—	2	—
11. Cholera	—	—	—	—
12. Dysentery :—				
(a) Amoebic	1,482	71	2,679	—
(b) Bacillary	493	58	456	—
(c) Unclassified	1,219	69	7,683	—
13. Plague :—				
(a) Bubonic	1	—	—	—
(b) Pneumonic	—	—	—	—
(c) Septicaemic	—	—	—	—
14. Acute Poliomyelitis	20	2	7	—
15. Encephalitis Lethargica	7	3	5	2
16. Cerebro-spinal Fever	285	83	58	2
17. Babes	—	—	—	—
18. Tetanus	363	153	99	—
19. Tuberculosis of the respiratory system	1,007	265	651	—
20. Other tuberculous diseases	460	65	387	—
21. Leprosy	190	5	719	—
22. Venereal Diseases :—				
(a) Syphilis	4,325	48	12,265	—
(b) Gonorrhoea	5,976	27	21,186	—
(c) Other venereal diseases	776	3	2,123	—
23. Yellow Fever	—	—	—	—
24. Malaria :—				
(a) Benign	21	1	8	—
(b) Subtertian	3,288	55	12,007	2
(c) Quartan	17	—	162	—
(d) Unclassified	5,440	107	87,913	1
25. Blackwater Fever	20	4	22	—
26. Kala-azar	8	—	12	—
27. Trypanosomiasis	759	41	1,006	—
28. Yaws	246	—	27,137	—
29. Other protozoal diseases	14	—	11	—
30. Ankylostomiasis	1,575	10	3,884	—
31. Schistosomiasis	955	8	1,889	—
32. Other Helminthic Diseases	1,987	12	60,684	—
32a. Onchocerciasis	21	—	37	—
33. Other infectious or parasitic diseases	2,156	52	7,681	—
34. Cancer and other tumours :—				
(a) Malignant	250	60	84	—
(b) Non-malignant	855	30	1,646	—
(c) Undetermined	194	12	476	—
35. Rheumatic conditions	1,339	10	64,954	—
36. Diabetes	126	10	244	—
Carried Forward	—	—	—	—

TABLE I—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1947

EUROPEANS AND AFRICANS

Diseases					In-Patients	Deaths	Out-Patients	Deaths
Brought Forward					—	—	—	—
37. Scurvy	..	..	..	..	18	—	154	—
38. Beriberi	..	..	..	..	277	76	1,022	—
39. Pellagra	..	..	..	..	90	2	2,175	—
40. Other diseases :—								
(a) Nutritional	..	..	..	..	102	3	3,125	—
(b) Endocrine glands and general ..	..				117	11	805	—
41. Diseases of the blood and blood-forming organs	..	..	..	..	1,485	123	17,587	—
42. Acute and chronic poisoning	..	..	..	..	63	2	28	—
43. Cerebral Haemorrhage	..	..	..	..	384	81	350	—
44. Other diseases of the nervous system ..	..	..	..	..	1,462	117	15,265	—
45. Trachoma	..	..	..	..	53	—	247	—
46. Other diseases of the eye and annexe ..	..	..	..	..	1,457	3	31,017	—
47. Diseases of the ear, and mastoid sinus ..	..	..	..	..	291	—	24,310	—
48. Diseases of the circulatory systems :—								
(a) Heart	..	..	..	..	650	275	1,995	1
(b) Other circulatory diseases	..	..	..	..	1,616	30	10,919	—
49. Bronchitis	..	..	..	..	2,672	60	68,941	—
50. Pneumonia :—								
(a) Broncho Pneumonia	..	..	..	..	1,924	259	1,320	1
(b) Lobar Pneumonia	..	..	..	..	3,302	234	1,108	—
(c) Otherwise defined	..	..	..	..	1	—	5	—
51. Other diseases of the respiratory system ..	..	..	..	..	1,071	49	12,394	—
52. Diarrhoea and enteritis :—								
(a) Under two years of age	..	..	..	..	256	32	5,671	—
(b) Over two years of age	..	..	..	..	2,189	178	38,062	—
53. Appendicitis	..	..	..	..	168	8	199	—
54. Hernia, Intestinal Obstruction	..	..	..	..	6,224	151	5,096	—
55. Cirrhosis of the liver	..	..	..	..	231	60	79	—
56. Other diseases of the liver and biliary passages	..	..	..	..	1,190	97	3,338	—
57. Other diseases of the digestive system ..	..	..	..	..	2,864	119	117,550	—
58. Nephritis :—								
(a) Acute	..	..	..	..	305	49	660	—
(b) Chronic	..	..	..	..	265	49	292	—
59. Other non-venereal diseases of the genito-urinary system	..	..	..	..	6,190	131	28,146	—
60. Diseases of pregnancy childbirth and the puerperal state :—								
(a) Abortion	..	..	..	..	1,704	10	1,406	1
(b) Ectopic gestation	..	..	..	..	468	7	4	—
(c) Toxæmiac of pregnancy	..	..	..	..	680	55	1,109	—
(d) Other conditions of the puerperal state ..	..	..	..	..	11,645	149	713	—
61. Diseases of the skin, cellular tissue, bones and organs of locomotion	..	..	..	..	14,162	162	209,371	—
62. Congenital malformation and diseases of early infancy :—								
(a) Congenital debility	..	..	..	..	603	117	1,935	—
(b) Premature Birth	..	..	..	..	441	93	5	—
(c) Injury at birth	..	..	..	..	39	21	8	—
63. Senility	..	..	..	..	69	18	61	—
64. External causes :—								
(a) Suicide	..	..	..	..	14	3	2	2
(b) Other forms of violence	..	..	..	..	10,198	265	95,845	—
65. Ill-defined	..	..	..	..	1,594	75	13,588	—
Totals	..	..	..	..	106,012	4,608	1,026,521	12

TABLE II

I.—CASES OF TRYPANOSOMIASIS TREATED IN NIGERIA

	1945	1946	1947
New Surveys	624	—	543
Re-Surveys	1,174	3,503	3,020
Dispensaries*	10,126	9,707	8,191
Mines Labour	293	277	140
Hospitals, etc.	3,107	3,286	2,580
Total Examinations made	281,493	508,745	760,067

II.—NEW SURVEYS

Province	Number examined	S.S. Cases	Infection per cent
Katsina	14,822	140	1.0
Niger	6,029	—	—
Bauchi	57,615	298	0.5
Ogoja	3,076	105	3.4
Total	81,542	543	0.7

III.—TEAM RE-SURVEYS

Province	Number Examined	S.S. Cases	Infection per cent
Kano	248,861	424	0.2
Bornu	7,593	41	0.5
Zaria	92,350	373	0.4
Niger	12,864	137	1.0
Plateau	159,890	1,805	1.1
Bauchi	817	39	4.7
Benue	26,247	153	0.6
Cameroons	8,474	48	0.6
Total	557,096	3,020	0.5

* Total includes dispensary re-surveys cases.

IV.—DISPENSARY RE-SURVEYS

<i>Province</i>								<i>Number Examined</i>	<i>S.S. Cases</i>	<i>Infection per cent</i>
Kano	..	..	..	..	..	..	..	5,481	83	1.5
Zaria	..	..	..	..	..	..	..	59,155	490	0.8
Plateau	..	..	..	..	..	..	..	446	10	2.2
Bauchi	..	..	..	..	..	..	..	9,047	109	1.2
Benue	..	..	..	..	..	..	..	11,878	99	0.8
Total								86,007	791	0.9

V.—MINES LABOUR

<i>Province</i>								<i>Number Examined</i>	<i>S.S. Cases</i>	<i>Infection per cent</i>
RESTRICTED AREAS :										
Kabba-Ilorin	..	..	..	..	..	..	..	2,730	40	1.5
Niger	..	..	..	..	..	..	..	1,596	15	1.0
Wamba (Plateau)	..	..	..	..	..	..	..	21,180	35	0.1
Jema'a (Plateau)	..	..	..	..	..	..	..	9,916	50	0.5
Total								35,422	140	0.4

VI.—DISTRIBUTION OF ALL CASES OF TRYPANOSOMIASIS

<i>Provinces</i>	<i>Surveys</i>	<i>Mines</i>	<i>Dispensaries</i>	<i>Hospitals</i>	<i>Mission</i>	<i>Total</i>
NORTHERN PROVINCES :						
Katsina	147	—	407	—	—	547
Kano	424	—	419	411	—	1,254
Bornu	41	—	64	—	—	105
Sokoto	373	—	171	5	39	2,188
Zaria	137	15	304	132	—	588
Niger	—	—	—	—	—	—
Plateau	1,805	85	1,969	332	415	4,606
Bauchi	337	—	659	228	—	1,224
Adamawa	—	—	—	—	9	9
Benue	153	—	2,331	289	585	3,358
Kabba	—	40	—	73	—	—
Ilorin	—	—	—	3	—	—
Total, Northern Provinces ..	3,410	140	7,924	1,473	1,048	13,995
SOUTHERN PROVINCES :						
Ogoja	105	—	230	12	—	347
Cameroons	48	—	23	47	—	118
Owerri	—	—	14	—	—	14
Total, Southern Provinces ..	153	—	267	59	—	479
Total, Nigeria ..	3,563	140	8,191	1,532	1,048	14,474





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