Annual medical and health report / Nigeria.

NIGERIA

ANNUAL REPORT ON THE
MEDICAL SERVICES
FOR THE YEAR 1949-50

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Annual Report on the Medical Services for the Year 1949-50

I.—INTRODUCTION

The Report which follows covers the fifteen months from 1st January, 1949 to 31st March, 1950—a fact which must be remembered when comparing the figures in this with those in previous Annual Reports.

2. It will be noted that considerable improvement in the facilities now offered by the Department has been achieved during the period with a relatively small increase in expenditure.

The results of the extended schemes for training of Junior Service staff are now becoming apparent with an increase in the numbers of qualified staff especially from the Pharmacy Schools, although development on these lines still falls far short of our requirements.

3. That section of the Report dealing with Epidemic Diseases makes sombre reading owing to the havoc wrought in the Northern Provinces by devastating outbreaks of *Cerebro-spinal Meningitis*. It should be noted, however, that, although the figures appear alarmingly high, they are much more accurate than have been available in previous years. For this reason it is an undoubted fact that the epidemics of previous years were only apparently less intense than the outbreaks recorded in this Report.

II.—ADMINISTRATION

A.—Staff

4. Shortage of staff is still a major problem and unless this is settled much that could be done will remain incomplete.

	Government		*Native Administration*	*Mission and Private*
	Approved	*Actual Strength*		
Doctors	236	179	—	165
Dentists	11	6	—	5
Nursing Sisters	124	74	—	—
Sanitary Superintendents	61	38	—	—
Pharmacists	168	123	—	127
Nurses	1,376	906	47	245
Midwives, Grade I	—	128	—	91
Midwives, Grade II	—	—	318	788
Sanitary Inspectors	283	219	—	—
NATIVE ADMINISTRATION:				
Inspectors and Sub-Inspectors	—	—	over 550	—
Dispensary Attendants	—	—	about 550	—

B.—Legislation

5. The following legislation affecting Public Health was enacted during the period under review :—

(1) Regulations

Serial No.	*Date*	*Short Title*	*Provisions*	*Gazette No.*
30/49	12-11-49	Quarantine (Aerial Navigation) (Amendment) Regulations, 1949.	Amendment of principal regulations and 1947 regulations.	60 of 26-11-49
7/50	26-1-50	Births, Deaths and Burials (Calabar Public Burial Grounds) Regulations, 1950.	*Re* Calabar Public Burial Grounds	8 of 2-2-50

(2) Orders in Council

Serial No.	*Date*	*Short Title*	*Provisions*	*Gazette No.*
3/49	14-1-49	Sleeping Sickness (Declaration of Restricted Areas) (Amendment) Order in Council, 1949.	Amendment of First Schedule to Order in Council No. 12 of 1947.	5 of 27-1-49
5/49	22-10-48	Coroners (Fees) Order in Council, 1948.	Amendment of Schedule of fees payable to Medical Officers.	6 of 3-2-49
6/49	28-1-49	Births, Deaths and Burials (Christian Cemetery—Gusau) Order in Council, 1949.	Amendment of Order in Council No. 23 of 1929.	6 of 3-2-49
14/49	30-4-49	Yellow Fever (Warri Province) Order in Council, 1949	Liability to inoculation ..	25 of 5-5-49
25/49	26-8-49	Births, Deaths and Burials (Enugu Cemeteries) (Amendment) Order in Council, 1949	Amendment of Order in Council No. 23 of 1929.	47 of 8-9-49
41/49	12-11-49	Vaccination (Application to the Eastern Provinces and the Cameroons) Order in Council, 1949.	As indicated by the short title	60 of 24-11-49

(3) Rules

Serial No.	*Date*	*Short Title*	*Provisions*	*Gazette No.*
5/49	27-5-49	Midwives (Amendment) Rules, 1949.	Amendment of the Schedule to Rules No. 2 of 1946.	30 of 9-6-49

(4) Bye-Laws

Serial No.	*Date*	*Short Title*	*Provisions*	*Gazette No.*
1/50	18-3-50	Lagos Township (Amendment) Bye-Laws, 1950.	A new bye-law to control the application of bye-laws 2 to 6 inclusive.	17 of 23-3-50

In addition to the above there have been numerous Public Notices concerning the declaration of diseased areas under the Dogs Ordinance published during the period under review.

C.—Finance

6. Below are financial statements for the financial year 1948-49 :—

Medical, Health and Laboratory Services	£
Total Expenditure from Nigeria Revenue 1947-48	1,090,291
Total Expenditure from Nigeria Revenue, 1948-49	1,304,665
Increase	214,374

Sleeping Sickness Service	£
Total Expenditure, 1947-48	52,522
Total Expenditure, 1948-49	59,558
Increase	7,036

7. The sum of £134,861 has been expended from Development Funds on extension of the Medical Service and on Leprosy and other ancillary Services.

III.—PUBLIC HEALTH

A.—Health of Expatriate Population

8. *Malaria*—was the main cause of morbidity amongst Europeans ; it accounted for 27.4 per cent of hospital in-patients, and 12.6 per cent of the total number of patients. In 1948, the comparative figure were 21.3 per cent and 10.6 per cent. A Syrian died of blackwater fever in Lagos in October, 1949 ; no other cases were reported in the expatriate population.

9. General health has been good. During the period sixty-one expatriate officers were invalided.

10. Total number of expatriates in Nigeria at the end of 1949 :—

European	*American*	*Others*	*Total*
9,178	887	2,709	12,774

of these, 2,959 were officials.

B.—General Health

11. Government Hospital figures for 1948 and 1949-50 were as follows :—

	1948	*January*, 1949-*March*, 1950
In-patients	136,928	141,766
Out-patients	1,232,822	1,380,222

12. Hospital and Dispensary returns do not give a true picture of the prevalence of many of the commoner diseases. The morbidity caused by them can only be assessed by field surveys.

13. *Malaria.*—159,975 cases were treated in Government Hospitals and Dispensaries ; this, of course, is a tiny fraction of the actual number of cases.

14. *Trypanosomiasis.*—In a series of surveys and re-surveys during the period 1,162,117 people were examined ; 12,525 cases were treated.

15. *Helminthic Diseases.*—Field surveys give infestation rates of well over 50 per cent in certain areas. Ascariasis is commonest, with hookworm infestation the next most frequent. 97,269 cases were treated by Medical Officers during the period under review.

16. *Venereal Disease.*—During the period, 23,562 cases of syphilis were seen and treated by Medical Officers; of these, 19,919 occurred in the Northern Provinces. 57,591 cases of gonorrhoea were reported, the vast majority from the South.

17. *Rabies.*—The brains of twenty-four dogs were found to be infected during the period. Three human cases were notified.

18. *Tuberculosis.*—2,591 pulmonary, and 1,259 other cases with 406 deaths, were seen in hospitals during the period, but this does not give a true picture of the actual incidence. In Lagos, for example, 12.11 per cent of all deaths were attributed to tuberculosis.

IV.—VITAL STATISTICS

19. In Lagos and in certain other towns registration of births and deaths has been compulsory for several years. Native Administrations are now showing interest in the recording of vital statistics; for example, death registration is now compulsory in most of Ijebu Province and the whole of Katsina Province is now registering births and deaths.

20. At Ilaro, the Malaria Service obtained data for a twelve month period; during this time Infant Mortality rate was 178. In the previous fifteen years 25.2 per cent of children in a sample died before reaching the age of one year. Figures for Port Harcourt over the last decade, however, show a considerable reduction in the Infant Mortality Rate.

21. The figures for Katsina Province are approximate—they show a crude birth rate of seventy, a crude death rate of thirty-two, an infant mortality rate of 150, and a maternal mortality rate of 3.5.

22. In most of the country there is a great deal of suspicion about the reasons for the recording of these statistics, and this will have to be overcome before really accurate figures can be obtained.

23. Statistics from Lagos, the most accurate available, are appended with comparative figures for 1948, 1949 and the first trimester of 1950.

	1948	1949	*January to March,* 1950
Population	180,800	226,500	230,000
Births registered	9,237	10,134	2,607
Birth rate	51	44.7	45.3
Deaths registered	3,371	3,871	841
Infant Mortality rate	105.5	104.2	90.8
Still birth rate	32	32	23

24. It is obvious that the above figures are not really comparable or of statistical value as the population figures for 1948 and 1949 are based on an estimation which is shown to be wrong by the census held in February, 1950. With figures based on a corrected estimate the various rates would approximate to the January to March, 1950.

V.—HYGIENE AND SANITATION

A.—Preventive Measures

(1) Insect-Borne Diseases

(*a*) *Malaria.*

25. All regions report the maintenance and extension of existing schemes for drainage, reclamation, and the use of larvicides.

26. The report of the Senior Malariologist is as follows :—

> " The new Malaria Service began its work in February, 1949, when the Senior Malariologist was appointed. By March, 1950, the Senior Staff consisted of one Senior Malariologist, one Malariologist (selected), two Mosquito Control Officers (one seconded from Medical Headquarters); a Senior Sanitary Inspector was also seconded to the Malaria Service. Efforts were made to obtain an Entomologist, but they failed."

27. Despite the shortage of senior personnel, a serious attempt was made to cover as much as possible of the planned activities of the Malaria Service. During 1949 office and laboratory accommodation was erected at the Yellow Fever Research Institute, Yaba.

A summary of the activities of the Service is appended :

A.—Epidemiology

28. *In African Infants.*—Results so far obtained seem to confirm the hypothesis that a transient humoral immunity is present, probably inherited from the hyper-immune mother. This decreases, and eventually vanishes, during the second half-year of life.

29. *In African Children.*—Surveys in Lagos brought to light little that had not previously been investigated. Day to day variation of the parasite rate was strikingly demonstrated in a group of children, confirming that single blood examination is an inadequate index of actual parasite infestation. *P. ovale* was found in a surprisingly high proportion of cases, sometimes comprising 6 per cent of a sample.

In parturient African Women and in the new-born

30. Sixty-three out of 579 women investigated after delivery showed parasites in their blood ; 568 placentae were examined, and 108 were found to be infected or showed evidence of recent infection. Out of 543 new-born babies only one showed scanty parasites (*P. falciparum*) in the peripheral blood.

B.—Parasitology

31. Preliminary investigations of wild bird, rodent, reptile, and simian malaria were carried out.

C.—Entomology

32. *A. Gambiae.*—An investigation into the morphology and bionomics of *A. gambiae* and *A. gambiae melas* is being pursued, in order to determine the differential seasonal distribution and natural infectivity of the two.

33. Other work included the keeping up of colonies of *Aedes aegypti* and *Anopheles maculipennis atroparvus*, attempts to colonise *A. funestus* and *A. hargreavesi*, and further investigation into the morphology and bionomics of *A. pseudoafricanus*, a possible vector of sylvan yellow fever.

D.—Field Research on Chemotherapy

34. A survey of the incidence of malaria in the non-African population was carried out by means of questionnaires addressed to the Medical Officers throughout the country and to a representative sample of the non-indigenous residents of Lagos. This survey revealed that during the year 1947-48 the annual malaria morbidity of non-Africans was approximately 225 per 1,000 in the Protectorate and 44.5 per 1,000 in Lagos. Sixty-five per cent of the non-African population were using prophylactic proguanil, and the comparative figures of malaria incidence in four groups taking prophylactic drugs were as follows : 10 per cent in proguanil takers, 21.8 per cent quinine takers, 22.6 per cent in mepacrine takers, and 22.5 per cent in chloroquine takers.

35. The slow therapeutic effect of proguanil and its failure to produce radical cure of *P. falciparum* malaria were confirmed.

36. 245 African school children naturally infected with malaria were divided into four groups. Three were treated with standard courses of proguanil, mepacrine and chloroquine respectively ; the fourth group acted as a control. Preliminary results show that proguanil takes longer to reduce the *P. falciparum* trophozoite infection rate from 100 per cent to nil than the other two drugs. None of the three exhibits any gametocidal action, but proguanil rendered the gametocytes non-infective to mosquitoes.

E.—Field Surveys

37. A malaria (and yellow fever) survey of the Colonial Development Corporation's Groundnut Scheme at Mokwa was carried out in August, 1949. The area was shown to be intensely malarious, spleen-rates in the 1-10 age-group being around 55 per cent and parasite rate 65 per cent. Low adult rate indicated long-standing hyperendemicity ; as usual, the highest percentage of crescent carriers was found in the 3-4 age-group.

38. The only malaria vectors are *A. gambiae* and *A. funestus*, both house-haunting, man-biting species ; the infectivity of *A. funestus* is nearly twice as high as that of *A. gambiae*, and it is the main vector except in May and June. The simultaneous presence of the two ensures a transmission season of at least eight months.

39. In the survey report stress was laid on the possibility of an increased amount of malaria among the African population in the area owing to an influx of migrant labour, and on the considerable risk to non-immunes—adequate protection is essential ; anti-larval and imagocidal measures, personal protection, and chemoprophylaxis are all of importance.

F.—Malaria Control Pilot Schemes

40. *Trial residual spraying at Ijora.*—This showed that residual spraying of a small group of houses situated within a large mosquito-breeding area is of very limited value.

41. *Ilaro Scheme.*—Ilaro was chosen as the site for an experimental mosquito eradication scheme, in the absence of natural barriers. Surveys revealed that malaria in Ilaro is at the lower level of hyperendemicity, with a pronounced subclinical endemic wave that starts shortly after the beginning of the rainy season and lasts for at least four months. *P. falciparum* is the main species, *P. malariae* has an incidence of about 10 per cent, and *P. vivax* is an exceptional finding. *A. funestus* is the main vector, but *A. gambiae* has a seasonal importance.

42. Before *residual spraying* actually began, future arrangements for parasitological and entomological surveys were outlined, and an intensive publicity campaign proved successful in explaining to the people of Ilaro the purpose of the work. Spraying started in March, 1950; Gammexane P.520 wettable powder is to be used, at an average deposit rate of 10 mgm. of the gamma isomer per square foot. The calculated cost involved in spraying the 1,700 houses quarterly is £600, the total annual cost, including staff, equipment, etc., being £1,725 (4s per head per annum).

G.—Field Research on Insecticides and Equipment

43. Field tests were carried out, using larvicidal pellets as a method of controlling breeding in tree-holes and crab-holes, with excellent results.

44. Investigations are proceeding with deodorants (mixed with Gammexane P.520 wettable powder), with DDT and BHC as residual insecticides, with larvicidal oils, with spraying equipment, and with aerosols for aircraft disinsectisation.

H.—Training

45. Three courses in Field Entomology and the Technique of Malaria Control, each lasting two weeks, were given to Government Sanitary Inspectors during the period. A three-day " Symposium on Malaria " was organised for the senior Medical students of the Ibadan University College. An illustrated key to the Nigerian Anophelines has been prepared, and a guide to the technique of residual insecticide spraying is being completed.

I.—Malaria Bulletin of West Africa

46. The lack of any classified and summarised information on problems of malaria research and control in West Africa is a serious disadvantage for malariologists and public health workers; scientific contacts between the various territories are limited. It is now hoped that a twice-yearly Bulletin may be published, the first number later in 1950.

J.—Sleeping Sickness

47. As with Malaria so for Sleeping Sickness there is, and has been for some considerable time, a special service which is practically autonomous. For the purpose of administration the Sleeping Sickness Service is loosely joined under one officer with the Medical Field Units Service with which it will eventually be absorbed. The combined report of these two services is therefore given as an Appendix.

(2) Epidemic and Endemic Diseases

(*a*) *Relapsing Fever.*

48. During the period cases of relapsing fever were reported from various areas in the Northern Provinces. Katsina Province was worst hit, but, as elsewhere, the outbreak was mild. Treatment was carried out by staff engaged on cerebro-spinal fever work and the drug of choice was acetylarsan. Total figures for the 15 months:—cases 1,041 ; Mortality 2.6 per cent.

(*b*) *Cerebro-Spinal Fever.*

49. Sporadic cases were reported from the Eastern Provinces, but it was in the North that this disease took severe toll ; during the period January, 1949 to March, 1950 two devastating epidemics occurred.

50. 1949 *Epidemic* :—Early in the year it became obvious that a severe outbreak was developing in Katsina and Sokoto Provinces ; in Katsina the experience gained in the 1948 epidemic proved valuable, but in Sokoto there was considerable difficulty in obtaining reliable notification and in persuading patients to come for treatment. This was because the Province had had no serious epidemic of this disease since pre-sulphonamide days. Altogether Katsina Province had 8,864 cases with 8.8 per cent mortality, and Sokoto Province 29,999 cases with 22.2 per cent mortality.

51. Bauchi, Adamawa and Kano Provinces also had severe outbreaks ; in these areas 3,625 cases were reported, with a mortality of 15.2 per cent.

52. Temporary treatment centres were set up in as many places as possible. Searching for cases proved a useful measure, as did the recently introduced registration of deaths in Katsina Province. To combat the epidemic, the local Medical and Health staff were joined by all available Field Unit and Sleeping Sickness personnel.

53. 1950 *Epidemic* :—This was still raging at the end of March ; in fact, the peak had not been reached. Notification of cases was prompter and more accurate than before, as a result of previous experience and the widespread propaganda carried out in the latter part of 1949, and this played its part in lowering the death rate in this epidemic.

54. Sokoto Province, especially the Birnin Kebbi area, was again hardest-hit ; Adamawa, Bauchi and the Zuru area in Niger Province were also severely affected. Kano and Bornu had sharp outbreaks, but Katsina was much less affected than in 1949.

55. The total figures for the whole region up to 31st of March, 1950 are as follows:—
Cases 33,603, Mortality 13.4 per cent.

56. As before, treatment was given by provincial, Field Unit and Sleeping Sickness staff at strategically-placed centres. Co-operation between the Administration and the Medical Service was exceedingly good and particular mention must be made of the good work carried out by the Sokoto Administration. Sulphonamides were used, orally, intramuscularly, and intravenously. Some cases in Hospital received penicillin treatment.

57. *Special Investigation.*—A Laboratory Service Unit is working on the Meningococcal carrier rate in Katsina Province.

(*c*) *Leprosy.*

NIGERIA LEPROSY SERVICE

58. The Leprosy Service Control Scheme, started in 1945 with the help of Colonial Development and Welfare Grants, is now nearing the end of the first five-year period. The advantages of a unified service have been amply demonstrated ; the work of Mission Institutions has been extended and made more efficient because of the increased funds available, although this improvement has been by no means proportionate to the increase in expenditure. For the future, it is proposed that Missions which carry out leprosy work in Nigeria should be those invited to co-operate with the Government in a unified scheme; they will be subsidised. In this way Leprosy Control measures may be expanded in areas where the Government, through lack of staff, cannot hope to introduce them. The Leprosy Control Board and the Regional Leprosy Advisory Committees give ample representation to the Missions, so that their leprologists will be able to share in guiding the policy to be followed. All leprosy work in Nigeria can then be co-ordinated by the Nigeria Leprosy Service.

59. During 1949 the three ex-Mission Settlements (Oji River, Ossiomo, Uzuakoli) have been developed and equipped. The new Rivers Province Settlement has begun to admit patients, who will construct their own homes with bricks made by themselves on the site. At 31-12-49, the number of patients in Settlements was :—Ossiomo 1,065, Oji River 1,205, Uzuakoli 1,090. In the four areas of Benin/Warri, Onitsha, Owerri, and Rivers the initial aim has been achieved ; the service has been established and only requires consolidation. Already 36,845 patients are under the care of the Leprosy Service in these Provinces alone.

60. The new policy of leprosy control organisation is not to establish out-patient clinics for treatment but to persuade each community to provide a segregation village for the lepers. Increasing co-operation is being obtained and eight new segregation villages were established during 1949. The combination of leprosy survey and village segregation offers real hope for the future.

61. These measures necessitate a large staff of Leprosy Inspectors who will carry out epidemiological surveys, follow-up work, and, above all, constant propaganda. Inspectors are trained to an approved syllabus, and administration and all relative matters have been systematised.

62. Infective patients are given priority for admission, the aim being that 80 per cent of the in-patients should be lepromatous cases, even though this involves a greater call on hospital beds. The discharge rate was the best so far ; at Uzuakoli 266 out of 1,090 patients were discharged symptom-free. The treatment of children and the observation of child contacts are being given much attention. Each Settlement has its nursery for the infants of leprous mothers ; these are passed to the care of healthy relatives as soon as they are weaned. 3,939 child contacts are under regular observation.

63. In co-operation with the British Empire Leprosy Relief Association, research on the chemotherapy of leprosy proceeded with very satisfactory results. Diamino-diphenyl sulphone is now firmly established as the drug of choice in Nigeria. Treatment with this drug is cheaper (10s to 14s per patient per annum) and far more efficacious than hydnocarpus oil for all active cases of leprosy. It is also simpler to administer, as it can be given orally. A quicker turnover of patients may now be expected.

64. Early in 1949 leprosy surveys were carried out in the Northern Provinces. In Bornu there was an incidence of 2.5 per cent and among the Eggon tribe in the south of Plateau Province over 8 per cent were found to be suffering from the disease.

Mission Activities

65. In the North, nearly all leprosy work is still in the hands of Missions; in the South, although much of the work done in the past by Missions has been absorbed into the Leprosy Service, a great deal is still done by the Missions. Outstanding examples are the Church of Scotland Mission at Itu and the American Baptist Mission at Ogbomosho.

(*d*) *Smallpox.*

66. The period under review was marked by widespread outbreaks, 21,559 cases were reported, with 3,019 deaths. Each Region reported that well over a million vaccinations had been performed, but there is still a great deal of apathy and even opposition to this procedure among the people. Until this is overcome there will be a constant danger of widespread epidemics.

(*e*) *Yellow Fever.*

67. Three cases were recorded—two in European seamen who died in Lagos, having contracted the infection at Burutu or Warri, and one African at Kaduna, which was also fatal. A mass anti-yellow fever inoculation campaign was carried out in parts of Warri Province. 54,656 inoculations were performed, 20,627 of these using the new combined yellow fever and smallpox ' scratch ' vaccine. Investigations continued at the Yellow Fever Research Institute, Yaba.

(3) Helminthic Diseases

68. These are rife; the intestinal helminthiases, schistosomiasis, and dracontiasis will remain prevalent until great improvements are effected in water supplies.

69. Ankylostomiasis, and especially ascariasis, are universal, whereas, schistosomiasis, particularly common in the more easterly of the Northern Provinces, is more focal in its distribution. Guinea-worm is mainly found in the North, but occurs elsewhere, for example, at Oshogbo.

70. Onchocerciasis is localised in its distribution but the incidence is high in some areas. Filariasis is common in Warri (*Loa loa*) and in the Cameroons (*Loa loa* and *F. perstans*); a Loasis Research Centre was opened at Kumba and much data on the bionomics of the local species of *Chrysops* has been collected. The Research Centre is staffed by the Colonial Research Committee with the aid of the Liverpool School of Tropical Medicine. Professor Gordon, of the School, is in charge of the work and visits Kumba at frequent intervals.

B.—General Measures of Sanitation

(1) Water Supply

71. *Urban.*—Three new piped water supply schemes were started; of these, one is now in operation and the other two are approaching completion. In the Eastern Provinces, capacity was markedly increased in four urban areas. In the Western Provinces, preliminary investigations were carried out in connection with the proposed water supply for four townships. Regular bacteriological examinations are made of specimens of water from all pipe-borne and many well or impounded water supplies.

72. *Rural.*—The Rural Water Supply Section of the Public Works Department has been busily engaged on the provision of protected wells, palm-water tanks, and

impounded springs. For example, in the Western Provinces 279 wells, forty-five tanks, and nineteen dams were completed.

73. Native Administrations, Missions, etc., have erected a large number of wells, sited and approved by Government or Native Administration Inspectorate.

(2) Sewage Disposal

74. The Conservancy systems obtain in all centres of population. In the North, composting of night soil and dry refuse is widely practised in towns where an organised health staff exists. Elsewhere the public are slow to realise the value of compost. Shallow trenching is often adopted, the residue in many instances being recovered after six months, but some larger towns in the South are now composting night soil and dry refuse.

75. Private salgas are used widely, but they are often badly constructed and badly sited.

76. At Sapele and Burutu, the United Africa Company installed the simple and cheap " Gold-Coast " aqua-type system. This is proving very satisfactory with proper supervision.

(3) Refuse Disposal

77. Controlled tipping (for the reclamation of swamps and borrowpits) or composting are steadily replacing incineration as the methods of choice.

(4) Inspection of Nuisances

78. House to house inspections are carried out regularly by the Sanitary Inspectorate and constitute an important part of the work done. Offences against various Ordinances are thus detected and appropriate action taken. Unfortunately, the general populace have not yet come to regard the Sanitary Inspector as the helpful friend he should be.

C.—School Hygiene

79. In Lagos, School Clinics are held regularly ; the services of an Ophthalmologist and a dental surgeon are available.

80. Routine examinations of 28,459 children, and 662 eye examinations, were carried out during 1949. In 763 children (2.7 per cent) evidence of avitaminosis was noted. Otherwise helminthiasis and skin and eye disease were the commonest conditions found.

81. In the Regions, routine sanitary inspections and visits by Medical Officers were made ; hygiene instruction in schools is now general in the South.

D.—Labour Conditions

82. Amendments to, and modifications of the draft regulations controlling labour camps, so as to suit the requirements of the different regions, were formulated during the period under review.

83. The larger firms, particularly, are co-operating in the provision of steadily improving conditions for the workers. One firm has already employed a qualified doctor for workers at Sapele and hopes to erect a hospital there, in addition to another

one at Burutu ; several firms in the larger towns retain the services of private practitioners for the medical supervision of their staff.

84. The Cameroons Development Corporation has an excellent medical service in being, for the benefit both of the employees and the local population.

E.—Food in relation to Health and Diseases

85. Inspection and control of foodstuffs form an important part of the duties of the Sanitary Inspectorate. In Lagos, the seven aerated water factories were inspected and samples were analysed bacteriologically every fortnight. Corn mills and bakehouses were also regularly inspected. Diets in Prisons, Hospitals and other institutions are kept under supervision throughout the country. Medical Field Unit Surveys (*see* Appendix) are providing valuable data on the general state of nutrition. First-class protein is deficient as a rule, and Vitamin B deficiency, especially of riboflavin, is common, mostly in school children divorced from their homes. This is particularly so in Warri and Benin Provinces, and in parts of the Eastern Region, where, in addition, cases of malignant malnutrition were reported in children from rural districts.

86. In scattered areas in Pankshin, Ogoja and Bamenda, shortages of iodine have been noted. Iodised salt is being sold by the Pankshin Native Authority.

87. The drought of 1949 in the North did not result in the severe food shortage that was feared, but prices rose considerably.

VI.—TRAINING OF MEDICAL SERVICES PERSONNEL

(*a*) *Doctors*

88. The functions of the Medical School, Yaba, have now been taken over by the Faculty of Medicine of the University College, Ibadan, and the remaining students of the former school are completing their studies for the Diploma at Ibadan. The Adeoyo Native Administration Hospital and the Jericho Government General Hospital have become the temporary teaching hospitals. The Departments of Anatomy, Physiology and Pharmacology are still at Yaba. The Faculty has now completed its first academic year, and the numbers of students were follows :—

Students for 2nd M.B. examination (at Yaba)	17
3rd Year Diploma Students (at Ibadan)	6
4th Year Diploma Students (at Ibadan)	8

All three final year students obtained the Diploma during 1949.

89. The first 2nd M.B. examination in Anatomy, Physiology, Pharmacology will take place at Yaba in July, 1950, under the auspices of the University of London.

(*b*) *Dentists*

90. There are no local facilities for the training of Dentists, but the University College at Ibadan may later help to satisfy this deficiency. Some potential dental surgeons are studying there. A new scheme for the training of Dental Technicians is due to begin in 1950.

(*c*) *Nurses*

91. Twenty-six Government Hospitals, where Nursing Sisters are stationed, are recognised training schools. Six months or a year of preliminary training, depending on educational qualifications, is now given before candidates are considered for general

training. There are preliminary training schools at Kano, Aba, Ibadan and Lagos. The general training course is of three years' duration. 206 Government Nurses qualified during 1949, and were subsequently registered.

92. There was difficulty in recruiting suitably-educated girls for the Nurses Training School, Ibadan ; at the end of March, 1950, thirty students were in residence. After six months preliminary work, the students continue with the nursing course proper ; the University Clerical Staff reports that the standard is high.

93. The Nursing Council of Nigeria has not yet instituted the intended state examinations for admission to the Register of Nurses, but it is expected that this will come about during the period of the next report. In the meantime, Mission and Native Administration Nurses complying with the present requirements are admitted to the Register.

(*d*) *Pharmacists*

94. There are two Schools for Pharmacists, one at Lagos and one at Zaria. At the Lagos School the entire administration devolved on the Superintendent because of staff changes resulting from the closing of the Yaba Medical School. Seventy-three students were in attendance and sixteen qualified as Chemists and Druggists in the year ending September, 1949. Twenty-three students were in attendance at the Zaria School. It is hoped to raise the examination standards to that of Chemists and Druggists when more students with the requisite educational standards are forthcoming, but at present the standard aimed at is that of the Dispenser's Certificate.

95. Permits for Missionaries to dispense may be granted by the Pharmacy Board. As they give wide powers in regard to poisons, these permits are now granted only in special circumstances.

(*e*) *Midwives, Grade I*

96. It is now the policy that a double qualification in general nursing and in midwifery is a requirement to as great an extent as possible for Government female Nursing Staff. During the period thirty-eight candidates passed the Grade I Examination, the standard of which was almost comparable with that of the Certificate of the Central Midwives Board in the United Kingdom. Standards were kept even by having a touring team of examiners.

97. There has been difficulty in obtaining a sufficient number of suitable trainees, but an improvement may be hoped for when registered nurses begin to come forward for training in midwifery.

(*f*) *Midwives, Grade II*

98. Most of this training, a practical course in maternity and in infant care, is given by Missions. Ninety-eight candidates passed the qualifying examination during the period, and were registered. A further fifty-one whose examination had to be postponed till April, 1950, have now passed.

(*g*) *Sanitary Inspectors*

99. Courses lasting two years are now being given at Lagos, Kano, and Aba (a new School). At Ibadan, a nine-month Sanitary Overseers' Course is given. During the period, thirty-nine Sanitary Inspectors sat the Royal Sanitary Institute Examination, and thirteen were successful. The possession of this Certificate is necessary before promotion above Grade II can be granted to Sanitary Inspectors.

(*h*) *Dispensary Attendants*

100. There are now two training Schools for Native Administrations in the North, at Kano and at Zaria (opened in 1949). Kano had fifty-three students during the period, thirty of whom passed the final test; at a second examination five of the remainder were successful. Zaria School has now twelve candidates in training. Elsewhere these men have a year's training at Government or Native Administration Hospitals before being sent out to the Rural Dispensaries, of which there are over 500 in number. The projected training School at Aba has not yet materialised, though the need for it is greater than ever.

VII.—PORT HEALTH WORK AND ADMINISTRATION

101. During 1949 the incidence of smallpox steadily increased in Lagos, 487 cases being recorded during the year with October (ninety-eight cases) the peak month. The outbreak continued in the first trimester of 1950, and by the end of March, 138 cases had occurred.

102. Two cases of Yellow Fever were diagnosed in European sailors arriving by sea from Burutu in April, 1949—both were fatal. Burutu and Warri were 'infected ports' from 30-4-49 to 17-5-49, appropriate measures being taken. It is found that only a small proportion of the deep sea sailors coming to Nigeria have taken advantage of the Yellow Fever inoculations available in the ports of the United Kingdom. Immunisation facilities also exist in Lagos and other ports of Nigeria.

103. *Malaria.*—Port installations and small vessels were regularly inspected for anopheline breeding. 10,274 canoes and 4,136 small boats were inspected during the year; larvae being found in three of the canoes and in twenty-six of the small boats.

104. *Plague : Lagos.*—Anti-rodent measures were intensified in 1949. 17,790 rats were caught on ships, wharves, foreshores, at Markets and at Airports, while in January-March 1950 the figure was 4,011. During January, 1949-March, 1950 period, 5,426 rats were examined for fleas, a flea index of 0.55 and an *X.cheopis* index of 0.44 being recorded. In addition 15,348 rats were dissected and examined for evidence of plague infection by the Medical Officer of Health, Lagos, with negative results.

105. *Port Harcourt.*—Routine anti-plague measures continued; 408 live rats were examined for fleas, the flea index being 1.7 and the *X.cheopis* index 1.3. During the period 10,579 rats were caught, 3,760 being examined for plague with negative results.

106. The volume of traffic underwent a considerable increase at Lagos Seaport. At the Ikeja Airport, the number of aircraft arriving and departing on international flights was about the same as last year, although the number of passengers increased. At Kano Airport the volume of traffic was also maintained, night flying being as common as day flying. Kano is a most important intermediate Airport for Central African traffic.

VIII.—MATERNITY AND CHILD WELFARE

107. In the Southern Provinces, the Maternity Service is the most popular branch of the Medical Services. Ante-Natal Clinics are crowded, and the demand for institutional care far exceeds any possible provision for it.

108. At Massey Street Hospital, Lagos, an operating theatre was opened in 1949, to deal with emergency obstetrical cases. The ante-natal and post-natal clinics are now being held at the Infant Welfare Clinic, Oko-Awo. This has allowed space for ten more in-patient beds, and ante-natal attendances have undergone a considerable increase.

109. There were 6,098 admissions to the Hospital during the period, with 4,008 deliveries. The maternal mortality rate was 14.23 and the still-birth rate 58.12; 353 obstetrical operations were performed. The value of ante-natal supervision has been strikingly demonstrated, but increased facilities for the work are essential; the possible solution appears to be the establishment of a domiciliary midwifery service and the reservation of Maternity Beds for abnormal cases. This is under consideration.

110. Throughout the Southern Provinces Government and other services are expanding. Small village maternity homes, locally called " Maternities ", have been steadily increasing in number, especially in the East. Native Administration Midwives are being encouraged to carry on domiciliary midwifery wherever possible.

111. In the North, progress is being made against difficulties, and a clinic at Kano has been a great success. It will be necessary, however, to post Health Sisters to the same Provinces for several successive tours so that the confidence of the women may be gained.

IX.—DENTAL SERVICE

112. At the end of the period under review there were one Senior Dental Officer (acting), and four Dental Officers. This position is unsatisfactory, as the demand for dental treatment is increasing greatly; in addition, a new Dental Centre and a Mobile Unit should be ready soon and both will required a whole-time officer.

113. Survey work has been hampered by unavoidably frequent movements of staff. 750 school-children were inspected at Port Harcourt, and although 39 per cent of the children had some degree of gingivitis, only seventy-six carious teeth were found.

114. During the period extensive touring was done, especially in the Eastern Provinces, and some Northern areas were visited for the first time.

115. *Treatment carried out—(January, 1949 to March, 1950)*

Fillings	4,408
Extractions	6,832
Scalings	1,729
Root treatments	159
Dressings	2,382
General surgical cases	204
General anaesthetics	351
New patients	9,506
Attendances	17,696

X.—HOSPITALS, DISPENSARIES AND OTHER UNITS

A. Existing Facilities

INCREASE OF 21 GOVERNMENT HOSPITALS

INCREASE OF 3 PRIVATE HOSPITALS

DECREASE OF 11 NATIVE ADMINISTRATION HOSPITALS

116. These include:—

	Government	*Native Administration*	*Mission*	*Private*
Hospitals	81	4	34	21
Small Maternity Homes	3	67	75	17
Total Beds available	4,976	2,060	2,763	289
Rural Dispensaries	—	558	—	—

117. Some figures indicative of the use of the facilities include :—

Government and Native Administration Hospital : In-Patients (new cases) . .	141,766
Government and Native Administration Hospital : Out-Patients (new cases)	1,380,222
Native Administration Dispensaries (new cases)	2,803,120

B.—Additions to Hospitals and Training Schools

118. At Shagamu, the maternity and the general wards, out-patient block, and theatre were completed, but staffing difficulties prevented the start of medical work. The new maternity block at Ijebu-Ode is nearing completion ; this is also the case with the hospital at Birnin Kebbi. At Kaduna a new laboratory was built, the old one being converted into a Maternity Ward. The Maternity Block at Owerri, and the female ward at Abakaliki were completed ; work on Onitsha General Hospital is well advanced.

119. Many other examples could be given of the gradual increase in the facilities afforded.

120. The Nurses Preliminary Training Schools at Aba and Ibadan were completed during the period.

C.—Rural Health Centres

121. Two Rural Health Centres have been constructed at Auchi and Ilaro. No Medical Officers have been available, but there is a resident Nursing Sister at Ilaro, and the work there is having good results and is very popular. At Auchi, the Unit had to be placed in charge of a Health Superintendent as a temporary measure ; apart from the usual routine dispensary activities, the main work carried out was mass vaccination.

D.—Medical Field Units

122. (*See* Appendix—" Sleeping Sickness Service and Medical Field Units".)

E.—Research

123. This is carried out mainly by five Units. The Heat Research Institute at Oshodi is investigating various physiological problems of the country ; among others, acclimatization, micro-climate in quarters, metabolism, heat tolerance and the blood chemistry of West Africans. The West African Institute of Trypanosomiasis Research at Kaduna and the Yellow Fever Research Institute at Yaba are continuing their work in their respective subjects. The latter is in process of being transferred from the Rockefeller Foundation to the Government of Nigeria.

124. At Uzuakoli, research work on the chemotherapy of leprosy has proceeded in co-operation with the Research Unit of the British Empire Leprosy Relief Association. Results have been most encouraging.

125. At Kumba in the Cameroons research into loasis is proceeding with the co-operation of the Liverpool School of Tropical Medicine. Kumba was chosen because of the almost universal infection of the population.

XI.—PANEL OF VISITORS

126. Under the Nuffield Foundation visits were paid to this country by the following Specialists :—

Venereal Disease:—Dr R. Lees, M.D., F.R.C.P., Director of Venereal Diseases Department, General Infirmary, Leeds.

Paediatrics:—Professor R. W. B. Ellis, M.A., M.D., F.R.C.P., Professor of Child Life and Health, University of Edinburgh.

Tropical Medicine:—Professor B. G. Maegraith, M.A., M.B., B.SC., D. PHIL., Professor of Tropical Medicine, School of Tropical Medicine, Liverpool University.

XII.—MENTAL HEALTH

127. The Mental Diseases Hospital at Lantoro, Abeokuta, continued its work. At the end of the period thirty-nine patients were under treatment, fifteen of these being criminal lunatics.

128. Although the site for a new and much larger mental hospital has been acquired, its construction has been deferred owing to matters outside the control of the Medical Department. Alterations to the present Asylum have, however, been carried out, in order to provide twenty more beds.

129. Lunatics are also confined in certain prisons throughout the country. At the end of the period 153 criminal and 273 civil lunatics were so confined.

XIII.—LABORATORY SERVICE

130. The programme of expansion continued during the period under review; new laboratories were opened at Yola, Makurdi, Lokoja, Kumba and Benin, the total number of laboratories being brought up to 27.

131. Although the Technical Staff has increased in number to the following: ten Pathologists, eight Laboratory Superintendents and ninety Technical Assistants, it has not yet been possible to post Regional Pathologists to the Eastern and Western Regions. There has been great difficulty in finding suitable trainees for the Junior Service. Two systematic training courses and one refresher course were given during the period.

132. Smallpox vaccine production was re-started in 1949 and over 18,000 grams of pulp were produced. This is a considerable increase on the 1947 figures, but is apparently not now sufficient for the ever-increasing demands. The production of other vaccines continued in addition to the general work of pathological, bacteriological, and biochemical examinations.

133. Some idea of the scope of the work is given by the following figures:—

VACCINES

Smallpox Vaccine issued during the period ..	316,390 tubes 6,327,800 doses
Anti-rabies vaccine	215,835 c.c.
T.A.B. Vaccine	13,035 c.c.

HISTOPATHOLOGY

Number of Sets of tissues examined	661
Number of blocks prepared and cut	1,384

MEDICOLEGAL EXAMINATIONS

Autopsies (all areas)	999
Examinations (Forensic Science Section): for estimation of age	159
Examinations (Forensic Science Section): for blood strains	179
Miscellaneous	155

CLINICAL PATHOLOGY

NUMBER OF EXAMINAATIONS CARRIED OUT

	Blood	*Stool*	*Urine*	*Smears*	*Bio-chemical*
Lagos	18,271	21,869	12,438	15,417	1,715
Eastern Provinces	39,556	42,541	39,532	3,582	158
Western Provinces	15,663	16,678	14,596	3,906	45
Northern Provinces	45,728	61,286	62,665	12,039	1,455
Total	119,218	142,374	129,231	34,944	3,373

SEROLOGY

NUMBER OF TESTS CARRIED OUT

	Widal	*No. Pos.*	*Weil Felix*	*No. Pos.*	*Kahn*	*No. Pos.*	*Ide*	*No. Pos.*
Lagos	415	141	328	5	14,672	3,289	559	249
Eastern Provinces ..	72	26	12	3	2,032	458	3,813	1,179
Western Provinces ..	2	2	2	2	6	4	2,021	548
Northern Provinces ..	230	40	150	7	4,675	1,833	7,168	3,506
Total	719	209	492	17	21,385	5,584	13,561	5,482

APPENDIX

SLEEPING SICKNESS SERVICE AND MEDICAL FIELD UNITS: JANUARY, 1949 TO MARCH, 1950

1. In early 1949 the two mobile services, which, except for two short periods, had been administered together since 1946, were re-joined on a more permanent basis although a true amalgamation of their staffs, records and accounts cannot occur for years. The main benefit, perhaps out-balanced by the fact that only one senior officer was provided for the two, is that some degree of continuity, so essential for the younger service, may be maintained.

2. Staff difficulties grow no less. Of the official panel of fourteen qualified medical men never more than seven were available. Recruitment of superintendents from the Royal Army Medical Corps improved until latterly ten out of fourteen posts were filled, but leave incidence can reduce effectives to half of those required. Tsetse control staff fell from ten to eight because of the transfer of two officers to more attractive education and police jobs. One Sleeping Sickness Service Medical Officer is soon to re-join the service after a tour with the Trypanosomiasis Research Institute; he may in fact become the only active Sleeping Sickness Medical Officer as the others are engrossed with Field Units duties. Advantage is being taken of the new ten-months tours by several officers so that a majority are on leave during the rains but on duty in the busier dry season when epidemics occur and stream clearance is possible. Mallam M. Julde, Senior Technical Assistant, who first joined the old Tsetse Investigation in 1921, has been promoted to the Senior Service as a Superintendent.

3. Training of junior staff benefits from amalgamation of the Services. The Makurdi School gave primary, mainly academic, tuition to fifty pupils in a course lasting a year. Buildings have been erected at Makurdi Hospital and at two rural dispensaries to make some practical training possible. The smaller Kaduna School

and Laboratory provides laboratory training lasting one year, and refresher and advanced courses of two to three months for about the same number of pupils. Practical field training has always lagged because of the dearth of medical officers and experienced Superintendents.

Sleeping Sickness

4. This report covers the period of fifteen months up to March, 1950, and not a calendar year as in the past. In this section, to make comparison possible, figures given are for the calendar year of 1949 except where otherwise stated.

5. Largely because of secondment of staff to the Field Units and epidemic duties less than a million people (969,106) were examined in 1949. Cases treated were :—

	1947	1948	1949	1950 *Jan.-Mar.*
Surveys	3,563	3,860	1,996	328
Mines	140	36	9	—
Dispensaries ..	8,191	7,334	6,017	1,429
Hospitals	1,532	1,246	1,264	299
Missions	1,048	1,099	955	228
	14,474	13,575	10,241	2,284
No. examined ..	760,067	1,107,823	969,106	193,011

6. 1949 is the first year since 1931 in which the number of cases diagnosed was in the neighbourhood of 10,000. As the figures in the appendices show, the main endemic area in the central northern provinces was well covered by team and dispensary activities and on the periphery Rivers Province and the Cameroons were given attention.

7. The largest drop in cases comes from team records which are the most reliable figures. Those for all team surveys (primary surveys and re-surveys) are :—

	1947	1948	1949	1950 *Jan.-Mar.*
No. examined ..	638,638	830,573	645,364	116,400
New S.S. Cases ..	3,563	3,860	1,996	498
Percentage Infection	0.56	0.46	0.32	0.43

8. It must be remembered that the elaborate system in force in other British, French and Belgian Territories of combining re-surveys with a laborious follow-up of all old treated cases in the area has never been attempted ; indeed it would be impossible without either an enormous increase of supervisory staff or a neglect of the less-stricken though nevertheless potentially dangerous areas. Results have shown that such a system is not essential in Nigeria however advantageous it might be theoretically. But it would be unwise to accept the rate found at re-surveys (0.32 per cent) as indicating the true incidence of trypanosomiasis except in provinces such as Kano, Adamawa and Ilorin, and divisions such as Kontagora, where there are no dispensaries treating sleeping sickness. Elsewhere, by inference from other figures given below, it is probably at least twice this amount, that is about 0.6 per cent. This however is a very satisfactory figure.

9. A few communities which had never been previously surveyed were examined in 1949. In Benue Province a new Tiv Settlement at Tor Ayiramo near Sarkin Kudu in Wukari Division showed an infection rate of 6.4 per cent (90 cases) among 1,390

people examined. This was of no small interest as large numbers of Tiv have, for several years, been moving eastwards into Wukari Division.

10. At Ilorin a thorough examination of the stock farm villages and School was undertaken after the discovery of two infections in European visitors who might have been infected there. No sleeping sickness cases were found, however. The Bula District of Bauchi Province was likewise examined for the first time, thirty-eight cases being found among 15,995 people (0.24 per cent). Only in the one small village of Gambu, numbering 107 souls, was an infection rate found which would lead one to entertain the possibility of indigenous transmission. Here the infection rate was 3.0 per cent. In Ogoja District a little new ground was broken by a small team led by a Senior Dispensary Attendant; in the areas around Abuochichi and Aburumbede twenty-nine new cases were discovered among 2,002 inhabitants examined (1.4 per cent).

11. In the Brass Division of Rivers Province a new focus was discovered at Lobia; this appears to be the first time that endemic sleeping sickness has been disclosed in this Division. Consequent upon a report by the Medical Officer, Degema, the team operating in Ahoada visited Lobia and found fifteen cases among 521 people, an infection rate of 2.9 per cent.

12. The examination of communities in the Cameroons was undertaken by the Field Unit operating there, and the diseases for which investigations were carried out included trypanosomiasis. Much new information was obtained in this area, and the findings may be summarised thus:—

1. In Kumba Division 8,688 people were examined during 1949 and sixteen found infected (0.2 per cent).

2. In Mamfe Division 8,588 people examined, 162 cases (1.9 per cent).

3. In Bamenda, during 1949, the Monemo—Bafut Region produced one case out of 17,540 people—the negligible proportion of 0.005 per cent.

4. In March, 1950, two pockets of endemic sleeping sickness were found in Bamenda, one at Mukun (3.3 per cent of 1,073 people) and other at Ngamba where the early results in March suggested a final figure of about 10.0 per cent.

13. Other team work consisted, as usual, of re-examination of old endemic areas. In Kano, Katsina, Zaria, Bauchi and Adamawa the incidence was 0.2 per cent or less. Systematic work began in Niger Province, including the Kontagora Division which had been practically neglected since the pre-war initial surveys; the infection rate was 0.3 per cent in Kontagora and 0.4 per cent in Abuja.

14. The central riverine province of Benue provided the highest re-survey incidence, the figures being:—

	Examined	*Cases*	*Infection rate*
1949	130,344	796	0.6 per cent
January to March, 1950	13,318	20	0.15 per cent

15. In some respects infection rates seemed to be proportional to the length of time which had elapsed since a previous survey had been performed, *e.g.*, the Turan clan area of Tiv Division had not been examined for eleven years and had the highest incidence found in the Division during 1949 (6.0 per cent). The overall incidence taken Division by Division was highest in Wukari (0.9 per cent); this is the usual finding and is probably accounted for by the two long stretches of river and tsetse (the Benue and the Donga) which traverse this Division.

16. North of Benue lies Plateau Province whose wooded escarpments still provide an established transmitting ground for sleeping sickness. However, the infection rate at re-surveys has continued to fall throughout the years, thus :—

1947 .. 1.0 per cent, 1948 .. 0.9 per cent, 1949 .. 0.4 per cent.

17. The actual Plateau Province figures for the fifteen months under consideration are :—

	Examined	*Cases*	*Infection rate*
1947	29,890	126	0.4 per cent
January to March, 1950	21,778	61	0.28 per cent

18. The Provinces of Bauchi and Adamawa are to the east of the central infective foci and although re-surveys were carried out in these Provinces as a necessary vigilance only a very low incidence was found :—

	Examined	*Cases*	*Infection rate*
Bauchi, 1949	64,466	102	0.16 per cent
Adamawa, 1949	7,677	8	0.1 per cent
Bauchi, January to March, 1950 ..	12,881	16	0.1 per cent

19. More re-surveys have been done in the Eastern Provinces than in recent years. In the Cameroons, while the Field Unit was investigating new areas, a Dispensary Attendant did repeat surveys of villages near Fontem and reported incidences of 2.0 per cent and 2.8 per cent. In the Obudu area of Ogoja the infection rate remains moderately high (1.5 per cent to 1.8 per cent), much the same as at the initial surveys. The small team operating in Rivers Province not only disclosed the new Lobia focus already referred to but continued re-surveys of the formerly infected Abua—Ahoada area without finding much trace of infection, viz.

	Examined	*Cases*	*Infection rate*
1949	20,309	16	0.08 per cent
January to March, 1950	1,298	1	0.07 per cent

20. Dispensary staff continued their separate programme of village re-surveys begun in 1946, increasing the numbers examined to 319,835 and diagnosing in them 1948 new cases (0.45 per cent), which were thereby brought early to treatment. Although often carried out in the same Provinces and even Districts as team re-surveys the results are not strictly comparable. One reason mentioned in the 1948 report is the tendency to exaggerate attendance figures ; others are that staff tend to visit most those villages where they expect to find some cases and that dispensaries are sited in the worst areas. For the corresponding work in 1947 incidence was 0.9 per cent, in 1948 0.69 per cent ; and 0.45 per cent in 1949, paralleling at a slightly higher level the fall in rates found by mobile teams.

21. The total of all cases treated at dispensaries (re-surveys, voluntary, new infections and relapses) fell in 1949 by almost a fifth from 7,334 to 6,017, continuing the steady drop of about a thousand per year which began in 1946. Bornu and Niger Provinces had minor increases in their small returns, but the Katsina and Bauchi fall was 35 per cent to 40 per cent, probably as a result of intensive surveys in recent years. In the three central provinces, Zaria, Plateau and Benue, where dispensaries are concentrated and in each Province still treat from 1,000 to 2,000 cases a year, the decline was between 15 per cent and 20 per cent ; this is regarded as a solid achievement in the natural homes of human infection in Nigeria. Cameroons returns shew an increase owing to the opening of a new dispensary at Fontem in Mamfe Division.

22. The Benue Province Dispensaries have now been regionalised under a Senior Dispensary Attendant in each of the four Divisions affected by Sleeping Sickness, and Senior Subordinate Staff now work with reduced supervision from Anchau, Wamba and Minna, but further such delegation is hindered by secondment of staff to Field Units. At an increasing number of Dispensaries the Native Administrations are taking over all general medical work and local sanitation ; this permits sleeping sickness staff to do more touring.

23. In the absence of any rigid follow-through methods, the relapse rate among treated cases is difficult to define precisely. It was generally accepted as 15 per cent in Benue Province in 1945 and there seems little doubt that this figure has become the general rule throughout all the endemic areas in recent years. Although fewer cases are now being diagnosed at Dispensaries, it is a matter of clinical observation that a large proportion of new Dispensary cases—about 40 per cent—are suffering from advanced sleeping sickness. The chemotherapy of these advanced and relapsed cases is likely to become a major problem in the future.

24. Restricted Mining Areas, Pentamidine prophylaxis continued. Nine new infections were diagnosed in 1949 before pentamidinization but none after. No detailed investigation was possible.

25. The results of drug trials coming to hand during 1949 showed that the arsenical Malarsen held out greater chances of curing those difficult advanced cases than any other compound so far used in Nigeria, and it is hoped that further work will be done with this drug. The combination of Pentamidine and Tryparsamide also promises good results in cases with slight central nervous system involvement but has yet to prove its worth in relapsed and advanced cases. This combination is gradually replacing the Antrypol—Tryparsamide treatment formerly given as a routine in Nigeria.

26. A three-year follow-up of cases treated with 70A (Butarsen) showed this drug to be valueless in Trypanosomiasis. No less than 36 per cent of *early* cases had relapsed. (Figures obtained by Dr Hutchinson, of the West African Institute of Trypanosomiasis Research). Other drugs of an experimental nature were also found to be unsuitable for use under Nigerian Field conditions.

27. The figures for the first three months of 1950 show little significant change from those of the whole of 1949. In areas of low or moderate endemicity it is difficult to demonstrate any gradual improvement in the epidemiological position over so short a period.

Tsetse Control

28. Control Staff were posted to Kano, Katsina, Zaria and Benue Provinces, with the Entomologist at Kano, but no Officer was available for the Plateau.

29. There was a general change from the traditional Nigerian policy of protection of villages and other focal points by short ruthless protective clearings, a policy which arose essentially from shortage of both staff and funds and from reliance on communal labour. Wherever practicable clearance is now planned to eradicate tsetse-fly from complete stream systems, thus freeing both man and his stock from cyclical infection and rendering safe for cultivation and grazing much fertile valley soil hitherto unused. Ruthless protective clearance is reserved for emergencies and for small isolated communities whose man-power is insufficient to maintain work on long stretches of river. Otherwise partial clearance of whole stream systems is the rule.

30. In 1949 a scheme was prepared and submitted for the utilization of £365,000 of the Colonial Development and Welfare Grant to effect eradication of riverine tsetse-fly in neighbouring areas of Kano, Katsina and Zaria, and to begin protection of major cattle routes leading to the southern markets. It was approved by the Secretary of State but funds cannot be provided until the Nigerian Ten-Year Development Plan is revised in 1950.

31. In preparation for the expansion entailed by this scheme a control officer attended a course in the interpretation of aerial photographs and the Survey Department arranged to photograph selected areas. It should now be possible to make reasonably accurate maps of stream systems from which control work can be planned sometime before the properly made maps with all details are obtained. The same officer is to conduct regular training courses for fly-boys. The Entomologist also spent two months in the Gold Coast during 1949. Much valuable experience was gained as a result of which, several useful ideas have been incorporated in control technique. Fly traps of the same pattern as those used with success in the Gold Coast, both as a control measure in certain conditions, and as a check of the efficiency of normal methods, are being constructed.

32. In the two dry seasons of 1949 and 1950, which this report (January, 1949 to March, 1950) covers, eradicative measures were applied to 749 miles of stream.

33. Although in Kano Province only forty-eight miles of stream were cleared in the Tudun Wada, Birnin Kudu and Karaye Districts, surveys were made of the Challawa River system including its Katsina tributaries, an area of approximately 2,000 miles. Eradicative clearance of the Southern part of the system will form a large block of tsetse-free country linking with existing cleared or partly-cleared areas in Katsina and Zaria.

34. Progress in actual control was more rapid in Katsina where fly was eradicated from approximately 150 square miles of land in Galadima and Danja by the partial clearance of 164 miles of river. The former district was severely affected by sleeping sickness in recent years. The local Agricultural Development Officer is kept informed and concentrates on the establishing of new mixed farmers in cleared areas. The Shika River system in Northern Zaria, running mainly through Giwa and Makarfi Districts, and enveloping with its tributaries the Agricultural Stock Farm which had in the past been given limited protection, was selected for eradicative work and 122 miles of it were cleared. In Southern Zaria work began in Lere District in 1949 using communal labour only and in two seasons initial heavy clearance was done at little expense on 276 miles of stream. South of Kaduna in Chikun district, a modification of the Gold Coast Technique of selective clearance was tried on twenty-six miles of stream. This area was kept under regular observation both before and after clearing by the institution of "fly-rounds." These produced much interesting information and indicated that the clearing had been a complete success. Maintenance problems (rate of regeneration, effects of complete stumping, etc.) are now being investigated there. Including minor clearances in the Kubau and Anchau areas and in the Home Districts, 480 miles of stream were partially cleared in Zaria Province.

35. Preliminary surveys were made around Gboko in Benue Province south of the Benue River in 1948, and clearance began in January of the following year round the town, the Agricultural Station and the Mkar Leper Colony. Despite labour difficulties and heavy vegetation a block of approximately seventy-five square miles has been made tsetse free by the clearance of fifty-seven stream-miles. For the first time Fulani Zebu

cattle have remained throughout the year in this area. The Tiv are reluctant to see any "Tukuruwa" (*Raphia vinifera*) destroyed because of its value for building; arrangements must yet be made to leave "Tukuruwa" reserves which would, of course, be fly-infested until some technique to deal with them is proven. In addition, fly surveys were carried out over an area of approximately 200 square miles.

36. Routine inspection and supervision of re-slashing was done in a reasonable proportion of old clearings, and fly surveys were continued in many areas, results being communicated to the Research Institute. Special surveys in connection with development schemes were carried out in Plateau, Niger, Bauchi and Bornu Provinces. An area in Southern Division, Plateau Province has been under regular observation. Interim results are interesting and the observations are being maintained. While large-scale clearing would be very expensive and undesirable, the field results that are being obtained would be of great use in applying any new technique that may be produced by the Institute. The supervision of all development at Anchau excepting inspection of clearings, was handed over in April, 1949 to the Zaria Native Administration advised by the Provincial Development Committee; a Development Officer took over at Anchau.

Medical Field Units

37. By late 1949, six units were in the field and two training at Makurdi. Only three of the six established units had a full-time medical officer; one lacked a medical officer and one a superintendent; two were supervised by Sleeping Sickness Medical Officers. This, and the unprecedented occurrence of over a hundred thousand cases of cerebro-spinal fever over the two successive dry seasons, retarded the practical general training of junior staff although they naturally gained unusual experience of meningitis. The established units are in Abeokuta, Cameroons, Benue, Plateau, Sokoto and Bornu; those in training will go to Warri and Rivers Provinces. The variety of climate, peoples, diseases, and duties is such that the work of individual units is barely comparable. Co-ordination of their routines, techniques, reports and programmes has been hindered by the limitation of the Senior Medical Officer's inspection tours to the Northern Provinces owing to the pressure of epidemic and administrative duties.

38. The Cameroons Unit, with two officers, undertook ten surveys in Mamfe, Kumba and Bamenda Divisions, seven general, and three special surveys for trypanosomiasis, schistosomiasis and filariasis respectively. Two sections worked separately until June, 1949, after which they amalgamated in order to give the medical officer more opportunity for clinical and special investigations. Three minor outbreaks of Cerebro-spinal Fever, dysentery and measles were attended to. A section assisted, and the Kumba headquarters buildings were loaned to, the Filariasis Research Scheme. The Medical Officer also continued some work on loasis after the departure of most of the research staff. Fly-boys of the Trypanosomiasis Research Institute were attached to the unit and did tsetse surveys of considerable value.

39. Attendances for examination at surveys were moderate among the apathetic peoples of Kumba and Mamfe but excellent and more spontaneous in Bamenda. The longer the unit remained in a Division and the better its work became known, the better were attendances; the difficulty is to retain the Unit in one area of this huge and needy territory, which is now sub-divided into two Provinces. It is proposed to reinforce it with a superintendent and six dressers so that both Provinces may get reasonable attention.

40. The Medical Officer drew special attention to :—

(1) *Diet and Nutrition* :—In Kumba and Mamfe, anaemia, the stigmata of vitamin deficiencies, and lethargy are all too common, although gross nutritional deficiencies are few ; the people of the Bamenda grasslands are more enterprising, active and productive, with better physique and healthier skins.

(2) *Filariasis* :—Latterly staff were trained in the technique introduced by the research staff, and at Menomo (N.W. Bamenda) found *Chrysops spp* in a hitherto unsuspected area and a high but localized incidence of *Mf. perstans* and *Mf. loa.*

(3) *Paragonimiasis* :—Cases were seen at all Kumba surveys. Work on the intermediate hosts (snails and crabs) was begun on lines suggested by Professor Gordon but had to be discontinued.

(4) *Helminthiasis* :—This is almost universal with roundworm commonest, 57 per cent of 15,500 specimens.

(5) *Venereal Diseases* :— 7 per cent of the 11,000 adult males examined had gonorrhoea, much of which seemed sulpha-resistant.

(6) *Leprosy* :—The incidence was 0.6 per cent ; the majority of cases seen were tuberculoid ;

(7) *Mass treatment* :—One-day intensive mapharside therapy gave satisfactory results in yaws. Tetmosol 5 per cent in palm oil, was excellent for scabies. Ulcers, helminth infestations and trypanosomiasis were also treated as a routine.

41. The Abeokuta Unit, under a superintendent, after experience of field work in Ogoja and of meningitis duty in Sokoto, began the first survey in its home province in June, 1949. Although attendances were very poor at first and much propaganda was required, 11,000 people were seen in four months. Examination was incomplete in many instances but useful experience and knowledge were obtained regarding the commoner illnesses, malaria, yaws (20 per cent affected), the helminthiases, filariasis, anaemia and avitaminosis. At a second survey of 3,000 people in Ilaro adequate samples of children and adults were more fully examined, but until a medical officer is available the team cannot be expected to do really valuable work apart from routine elementary treatments and epidemic duties. In early 1950, owing to leave incidence, a supervision of the Abeokuta Unit had to be undertaken by officers of the Malaria Service. Shortly afterwards most of the junior staff were dispersed to assist in cerebro-spinal fever work in the North, smallpox on the Western Abeokuta-Dahomey border, and a health survey undertaken by Professor Ajose, of Ibadan University College.

42. In Benue Province, the first formed team continued to suffer from its use as a training unit, from complete lack of a medical officer for some months, and from normal, often nominal, supervision by an officer responsible also for much sleeping sickness work in two provinces which are in different political regions. Locally it provided staff for an epidemic of smallpox in Oturkpo and a minor outbreak of Cerebro Spinal Fever in Wukari, externally the greater part or the whole of the Unit was mobilized in both dry seasons for Cerebro Spinal Fever duties farther North. In 1949, it moved from Wukari to Birnin Kebbi, in Sokoto, a distance of almost 800 miles by road and rail; in 1950 to Bauchi and Gombe, somewhat less distant.

43. During 1949 and early 1950 the greater part of Wukari Division, excluding the eastern Trust Territory was surveyed. Little detailed work could be done as medical supervision was slight, and concentration was made on vaccination, the

treatment of trypanosomiasis (0.8 per cent) yaws (12.6 per cent), scabies, ulcers and obvious venereal infections. Leprosy was diagnosed in 518 people (1.2 per cent) but 307 of these were in a known heavily infected focus near a mission leper centre at Takum. The avitaminoses were not noted separately but the Unit recorded under-nutrition or mal-nutrition in 8 per cent of 42,000 people seen. Goitre (3.5 per cent) is endemic in Wukari : iodised salt is on sale. Latterly the Unit was able to make its first detailed survey of a small group in N.W. Wukari. Further work of this nature is planned and will include drug trials on schistosomiasis which is endemic in the area now entered.

44. Field Unit's junior staff was first seconded to Plateau Province in 1948 when relapsing fever broke out. Early in 1949 they came under a Sleeping Sickness Medical Officer and soon had to deal with cerebro-spinal fever in Bauchi and Adamawa. When these epidemics waned the Unit was formally constituted as such and was given training in examining school children in Jos Town. Field work began in Jos Division in June. Following the posting of an experienced superintendent, surveys, mainly for Sleeping Sickness were extended to Shendam Division off the high plateau. In Jos Division the Medical Officer undertook general surveys of 20,000 people in four tribal areas, a detailed survey of various small communities at Vom, the Veterinary Department Headquarters, and serial surveys of school children. At the first the principal chronic endemic diseases were shewn to be malaria (spleen rate 33 per cent), anaemia (80 per cent), avitaminosis (40 per cent), under-nutrition (16 per cent), eye diseases (18 per cent) and scabies (20 per cent). Special attention was paid to the avitaminoses and helminthiases and to developing techniques which might improve the value of survey findings. Deficiencies of Vitamin A, of nicotinic acid and of riboflavin are common. Signs tend to be mainly on the skin and eyes. Some appear to be aggravated or simulated by the severity of the dry season climate, and the value of some as an indicator of deficiency is doubtful, *e.g.* excess conjunctival tissue. The serial surveys of 200 children in five rural schools may assist in evaluating the seasonal changes in and the relative value of these signs of deficiency, as well as shewing the seasonal changes in spleen and parasite rates, haemoglobin, and hookworm burden, etc.

45. For ankylostomiasis the McMaster counting slide, designed for veterinary use, has been introduced to estimate hookworm loads. Its accuracy has been checked by actual work counts, the results shewing that the egg count by this method does give a reasonable estimate of the worm load. Although hookworm infestation is moderately common on the plateau (7.6 per cent of 13,600 stools) the worm load is very low, usually below ten, and hookworm "disease" is rare ; no correlation was found between anaemia and hookworm infection. Schistosomiasis is not common on the plateau but small numbers of cases have been treated, in Jos Hospital, with a two-day course of stibophen (Fantorin) ; toxicity is low ; efficacy has yet to be determined by follow-up examinations. For diagnosis locally-made cercarial antigen proved of little value but a schistosome antigen obtained from Anglo-Egyptian Sudan was excellent. A Colony of *Physopsis* and *Planorbis* snails has been maintained, and the co-operation of the Yaba Medical Research Institute secured.

46. In a small series of people serum protein was estimated by the copper sulphate method. The findings were mostly within normal limits and could not be correlated with signs of malnutrition. Talquist scales used to estimate blood haemoglobin were found to vary very widely and generally to read too low. The Sahli instrument was much more satisfactory but may fade under field conditions ; one was found after a fortnight's exposure to read 6 per cent too high at 95 per cent. All Sahli instruments

are now regularly checked against that in Jos Hospital which is little exposed. An interesting sideline was the scripting and photographing by the Medical Officer of a film on Tapeworm with a commentary in three languages, and of a film strip on Field Units work. A demonstration on nutrition is being prepared for the local Health Week.

47. The Sokoto Unit had an unfortunate start at Maru near Gusau. Attendances were very poor, and population sampling quite erratic, very few adult women being seen. The incidence of schistosomiasis found (12 per cent) is low for this Province, but that of hookworm (67 per cent) was unexpectedly high. Malnutrition and anaemia affected one-fifth of those seen and one-quarter had had smallpox. The Unit moved to the Gwandu Emirate to begin a survey of the very conservative Moslem townspeople of Kalgo, nine miles from Birnin Kebbi. With adequate preliminary propaganda, an efficient co-operative District Head, and the assistance of the Medical Officer's wife, attendances have been excellent. The survey was interrupted by the 1950 cerebro-spinal fever epidemic but is soon to be resumed. The analysis of the figures being obtained from this close examination of 5,000 people should be of great value.

48. In December, 1949, Bornu staff began field surveys at Konduga, twenty-five miles from Maiduguri. In two month's work, much interrupted by public holidays, Mohammendan festivals, the nocturnal irruption into staff quarters of a herd of elephants and, finally, by the cerebro-spinal fever epidemic they examined 2,600 people, 92 per cent of the census total. Owing to the presence nearby of a swampy lake, malaria was found in formidable proportions; the spleen rate was 78 per cent, the parasite rate 64 per cent, and the average enlarged spleen 1.82 (Hackett). Urinary schistosomiasis affected 18 per cent of the 1,250 whose urines were examined, incidence rising to a peak of 40 per cent of males in the age group eleven to twenty. Rectal schistosomiasis also occurred (0.4 per cent). Other alimentary helminths were rare, the highest incidence being 1.8 per cent for hookworm. As evidenced by the scars, guineaworm is common; in one village most males over five years of age had large numbers of such scars. The incidence of the avitaminoses was reckoned at 40 per cent, but experience gained during the survey in appreciating lesser degrees of skin abnormalities shewed that the true rate is much higher; as elsewhere, the main deficiencies are of Vitamin A and the B complex. Anaemia (Haemoglobin below 80 per cent) was estimated by the Talquist scale to occur in 87 per cent of 1,030 people, by Sahli's method in 92 per cent of eighty-five people. All pregnant women seen at Konduga are being followed up so that some simple vital statistics may be obtained.

49. At all surveys records were made regarding smallpox and vaccinal state. Of 117,531 people seen 7,308 (6.2 per cent) had had smallpox. The records show :—

	Previous Small-pox percentage	*Previous successful vaccination percentage*	*Primary vaccinations done by Unit*	
			No.	*Percentage successful*
Cameroons	0.4	7	18,213	52.3
Plateau	2.6	37.5	5,157	25.8
Abeokuta	2.8	1.8	12,276	84.3
Benue	9.3	14.3	32,990	78.7
Sokoto	25.7	0.4	2,140	51.8
Bornu	49.2	2.6	1,280	48.4

United Medical Officers are agreed that the problems of maintaining the potency of vaccine lymph in bush conditions and of successfully vaccinating a high proportion of the rural population are not yet solved, particularly in the semi-arid Provinces. Units are supplied with refrigerators and thermos flasks but these will keep lymph viable only at or near base headquarters, on arrival at which the lymph may give not more than 75 per cent of " takes ". The primitive cooling methods normally used by itinerant vaccinators cannot long maintain even this state of potency, *e.g.*, Konduga with 49.2 per cent smallpox and only 2.6 per cent previous successful vaccinations is only twenty-five miles from Maiduguri hospital and visited more than once by vaccinators in the past two years. The use of dried combined small-pox yellow fever vaccine, plus more efficient transportation and refrigeration may make for improvement. Units are now forming a vaccination section which will co-operate with existing local health staff in vaccination campaigns.

50. In early 1949, a few dressers were sent to the Sapele-Burutu area of Warri Province to assist in mass inoculation against yellow fever ; they remained in the area for almost a year. For each of the 1949 and 1950 epidemics of cerebro-spinal fever over a hundred dressers and Dispensary Attendants were mobilized. At Gombe in Bauchi Province, a Sleeping Sickness Medical Officer with Field Units' staff conducted an investigation into venereal diseases in an urban Moslem population and arranged treatment ; a follow-up is shortly to be done.

51. Much has been done to assist local staff to combat a variety of Nigeria's epidemic afflictions, particularly cerebro-spinal fever, relapsing fever, smallpox and yellow fever. Indeed the formation of the units was most opportune, for these infections have been unusually common since 1946. In dealing with them the new service has had to lean heavily on the more experienced senior and junior staff of the Sleeping Sickness Service. The other principal function of the Field Units, that of investigating the incidence of endemic diseases, of assessing their relative importance, and of introducing and evaluating measures of control has not been altogether neglected. These investigations are, of course, much less spectacular and more puzzling to the peasant except in areas where work on trypanosomiasis and yaws had been done in the past. The importance of adequate preliminary propaganda even in such areas has been made obvious. The results obtained are as yet mostly in the form of simple figures of the incidence of the more easily diagnosed diseases, some of which are given as an appendix ; these are an advance on previous knowledge most of which related to self-selected samples of urban or semi-urban communities near hospitals and not to the peasant farmer and his family, Nigeria's only source of wealth. Medical Officers are now beginning to assess the actual damage caused by the commoner diseases encountered and the help of the Government Statistician is being sought to facilitate analysis of reports.

52. Although as yet no organised campaign has been made in any area against one or more specific diseases, a considerable amount of valuable treatment has been given to many of the 117,000 people examined, *e.g.*, to 12,000 cases of yaws, many of whom have been given intensive one-day Mapharside treatment, under strict supervision, for venereal diseases ; to all scabies cases, by the very effective and cheap mixture of 5 per cent Tetmosol in palm oil ; to those with intestinal helminths. The Benue Unit, and perhaps others, will shortly select areas where an attempt will be made to control the common and serious local diseases.

CASES TREATED AT DISPENSARIES, 1949

Northern Provinces	S.S. Dispensaries		N.A. Dispensaries		Total, 1949	
	New	*Relapsed*	*New*	*Relapsed*	*New*	*Relapsed*
Bauchi	145	14	176	16	321	30
Benue	574	170	906	364	1,480	534
Bornu	—	—	59	15	59	15
Kano	201	68	—	—	201	68
Katsina	—	—	190	26	190	26
Niger	76	9	129	30	205	39
Plateau	236	89	692	126	928	215
Zaria	698	308	208	28	906	336
Kabba	17	7	—	—	17	7
Total, Northern Provinces ..	1,947	665	2,360	605	4,307	1,270

Eastern Provinces

Provinces	S.S. Dispensaries		N.A. Dispensaries		Total, 1949	
	New	*Relapsed*	*New*	*Relapsed*	*New*	*Relapsed*
Ogoja	—	—	136	94	136	94
Cameroons	181	13	11	—	192	13
Total, Eastern Provinces ..	181	13	147	94	328	107

Rivers Province

Provinces	S.S. Dispensaries		N.A. Dispensaries		Total, 1949	
	New	*Relapsed*	*New*	*Relapsed*	*New*	*Relapsed*
Owerri	—	—	4	1	4	1
Total, Rivers Province ..	—	—	4	1	4	1
Total Dispensaries, Nigeria ..	2,128	678	2,511	700	4,639	1,378

RE-SURVEYS FROM DISPENSARIES, 1949

(N.B.—Cases detected have been included in the above Dispensary figures).

Provinces	*No. examined*	*S.S. Cases*	*Infection percentage*
Bauchi	4,173	50	0.12
Benue	126,468	514	0.4
Bornu	23,218	100	0.43
Kano	19,849	94	0.47
Katsina	13,959	118	0.85
Niger	3,074	30	0.97
Plateau	23,950	200	0.83
Zaria	93,920	312	0.33
Ogoja	8,155	44	0.54
Kabba	1,727	18	1.0
Owerri	1,342	6	0.44
Total	319,835	1,486	0.45

CASES TREATED AT DISPENSARIES—JANUARY-MARCH, 1950

Northern Provinces

Provinces	*Total New*	*January-March, 1950 Relapsed*
Bauchi	69	13
Benue	342	128
Bornu	10	5
Kano	66	18
Katsina	45	5
Niger	26	3
Plateau	185	39
Zaria	328	66
Kabba	—	—
Total, Northern Provinces	1,071	277

Eastern Provinces

Ogoja	33	28
Cameroons	—	—
Total, Eastern Provinces	33	28

Rivers Province

Owerri	—	—
Total, Rivers Province	—	—
Total Dispensary, Nigeria	1,104	325

RE-SURVEYS FROM DISPENSARIES

(N.B.—Cases detected have been included in the above Dispensary figures).

Provinces	*No.*	*S.S. Cases*	*Infection percentage*
Bauchi	749	2	0.26
Benue	31,531	133	0.42
Bornu	1,630	5	0.3
Kano	4,246	38	0.89
Katsina	1,552	13	0.83
Niger	38	1	2.7
Plateau	4,955	47	0.94
Zaria	30,797	95	0.3
Ogoja	1,113	3	0.27
Kabba	—	—	—
Owerri	—	—	—
Total	76,611	337	0.44

DISTRIBUTION OF ALL CASES OF TRYPANOSOMIASIS, 1949

JANUARY-MARCH, 1950

Provinces	*Surveys*	*Mines*	*Dispensaries*	*Hospitals*	*Missions*	*Total*	*Total*
NORTHERN REGION							
Kano	350	—	269	441	—	1,060	201
Katsina	23	—	216	—	—	239	50
Bornu	—	—	74	—	—	74	15
Zaria	29	—	1,242	11	73	1,355	431
Niger	211	—	244	83	—	538	99
Plateau	126	9	1,143	360	200	1,838	519
Bauchi	102	—	351	122	—	575	126
Adamawa	8	—	—	—	1	9	1
Benue	796	—	2,014	169	559	3,538	596
Kabba	—	—	24	1	—	25	—
Ilorin	—	—	—	2	—	2	—
Total ..	1,645	9	5,577	1,189	833	9,253	2,038
EASTERN REGION							
Ogoja	109	—	230	64	122	525	132
Rivers	17	—	5	1	—	23	31
Cameroons	225	—	205	10	—	440	83
Total ..	351	—	440	75	122	988	246
TOTAL, NIGERIA ..	1,996	9	6,017	1,264	955	10,241	2,284

TEAM SURVEYS, 1949—NORTHERN REGION

Provinces	*Examined*	*S.S. Cases*	*Infection percentage*
Kano	255,888	350	0.13
Katsina	10,717	23	0.2
Zaria	26,616	29	0.1
Niger	68,118	211	0.3
Plateau	29,890	126	0.4
Bauchi	64,466	102	0.16
Benue	130,344	796	0.6
Adamawa	7,677	8	0.1
Ilorin	2,343	—	—
Total	596,059	1,645	0.24
EASTERN REGION			
Ogoja	6,042	109	1.6
Rivers	36,046	17	0.04
Cameroons	7,217	225	3.1
Total	49,305	351	0.7
Total, Nigeria	645,364	1,996	0.31

Provinces	*Examined*	*S.S. Cases*	*Infection percentage*
Niger	181	—	—
Wamba Plateau	2,338	6	0.25
Jema'a	1,488	3	0.2
Total	4,007	9	0.22

TOTAL EXAMINED RE-SURVEYS, 1949

	319,835
	596,059
	49,305
	3,907
Total	969,106

TEAM SURVEYS—JANUARY TO MARCH, 1950

Provinces	*Examined*	*S.S. Cases*	*Infection percentage*
Kano	52,638	43	0.08
Katsina	—	—	—
Zaria	—	—	—
Niger	7,587	30	0.39
Plateau	21,778	61	0.28
Bauchi	12,881	16	0.1
Benue	13,318	20	0.15
Adamawa	—	—	—
Ilorin	—	—	—
Total	108,202	170	0.16

EASTERN REGION

Ogoja	1,556	44	2.8
Rivers	3,796	31	0.8
Cameroons	2,846	83	2.9
Total	8,198	158	1.9
Total, Nigeria	116,400	328	0.28

MINES LABOUR—JANUARY-MARCH, 1950

NO. TEAM EXAMINATIONS OF MINES LABOUR

Total Examined Re-surveys, January to March, 1950

	76,611
	108,202
	8,198
Total	193,011

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1949-50

No.	Diseases	In-Patients	Deaths	Out-Patients	Deaths
1	Typhoid and Paratyphoid Fevers	71	16	9	—
2	Plague	—	—	—	—
3	Scarlet fever	1	—	9	—
4	Whooping cough	146	11	1,505	—
5	Diphtheria	3	—	1	—
6	Tuberculosis of the respiratory system	1,593	406	998	—
7	All other forms of tuberculosis	649	58	610	—
8	Purulent infection and septicaemia (non-puerperal)	244	45	762	2
9	Dysentery	3,975	191	26,717	1
10	Malaria	12,869	297	147,106	1
11	Syphillis	6,122	82	17,440	11
12	Yellow Fever	3	2	—	—
13	Smallpox	2,746	397	930	1
14	Rabies	3	3	50	—
15	Typhus fever	9	—	2	—
16	Diseases due to helminths	5,022	23	92,247	—
17	Other infective or parasitic diseases	1,884	190	52,905	1
18	Cancer and other malignant tumours of the bucal cavity and pharynx	14	3	6	—
19	Cancer and other malignant tumours of the digestive organs and peritemeum	92	18	1,679	1
20	Cancer and other malignant tumours of the respiratory system	3	—	3	—
21	Cancer and other malignant tumours of the uterus	29	6	23	—
22	Cancer and other malignant tumours of the breast	45	2	40	1
23	Cancer and other malignant tumours of other or unspecified organs	188	7	227	—
24	Non-malignant tumours or tumours of undetermined nature	1,038	32	2,813	—
25	Rheumatic fever	134	5	2,377	—
26	Chronic rheumatism and gout	1,927	17	103,507	—
27	Diabetes meltitus	168	19	270	—
28	Diseases of the thyroid and parathyroid glands	173	7	738	—
29	Other general diseases	35	—	542	—
30	Vitamin-deficiency diseases	586	22	13,694	—
31	Pernicious and other anaemias	1,742	135	14,819	—
32	Leukaemias and other diseases of the blood and blood-forming organs	278	15	6,114	—
33	Chronic or acute alcoholism	57	—	61	—
34	Other Chronic poisonings	109	9	23	—
35	Non-meningococcal meningitis	332	71	116	—
36	Diseases of the medulla spinal cord, other than locomotor ataxia	19	3	23	—
37	Intra-cranial lesions of vascular origin	396	56	398	—
38	Mental disorders and deficiency	394	21	137	—
39	Epilepsy	241	18	736	—
40	Other diseases of the nervous system	786	25	19,063	—
41	Diseases of the eye, ear and their annexa	3,525	9	108,318	—
42	Pericarditis (including chronic rheumatic pericarditis)	13	3	34	—
43	Chronic affections of the valve and endocardium	145	19	116	—
44	Diseases of the myocardium, including aneurysm of the heart	530	100	585	—
45	Diseases of the coronary arteries and angina pectoris	72	47	45	—
46	Other diseases of the heart	443	112	1,900	—
47	Arteriosclerosis and gangrene	125	16	68	—
48	Other diseases of the circulatory system	1,302	13	10,569	—
49	Bronchitis	4,548	63	82,805	4

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1949-50—*continued*

No.	*Dieasses*	*In-Patients*	*Deaths*	*Out-Patients*	*Deaths*
50	Pneumonia and brocho-pneumonia	7,379	549	4,554	4
51	Pleurisy (non-tuberculosis)	446	23	1,240	—
52	Other diseases of the respiratory system except tuberculosis	549	12	13,103	—
53	Ulcer of the stomach or duodenum	355	10	1,867	—
54	Diarrhoea and enteritis (under two years of age)	1,178	66	18,801	12
55	Diarrhoea, enteritis and ulceration of the intestines (two years of age and over) ..	2,515	160	47,811	4
56	Appendicitis	249	8	1,052	—
57	Hernia, intestinal obstruction	9,963	219	7,586	—
58	Cirrhosis of the liver	453	77	350	—
59	Other diseases of the liver and biliary passages, including biliary calculi	1,982	60	72,044	—
60	Other diseases of the digestive system ..	2,160	73	38,927	—
61	Nephritis	808	120	1,696	—
62	Other diseases of the Kidneys and ureters ..	357	17	465	—
63	Calculi of the urinary passages	80	6	346	—
64	Diseases of the bladder, except tumours ..	546	14	3,232	—
65	Diseases of the urethra, urinary abscess, etc. ..	1,389	48	3,633	1
66	Diseases of the prostate	57	1	97	—
67	Other diseases of the genital organs, not specified as venereal or connected with pregnancy or the puerperal state	8,497	62	27,740	—
68	Diseases and accidents of pregnancy ..	1,188	61	3,562	—
69	Abortion without mention of septic conditions	2,054	8	2,097	—
70	Post abortive infection	412	2	33	—
71	Infection during child birth and the puerperium	229	18	5	—
72	Other accidents and diseases of child birth and puerperium	13,178	102	271	—
73	Diseases of the skin and cellular tissue ..	16,815	243	247,809	1
74	Diseases of the bones and organs of movement, except tuberculosis and rheumatism ..	2,089	27	27,618	—
75	Congenital malformations (still-births excepted)	165	26	237	2
76	Congenital debility	237	34	1,816	—
77	Premature birth (still-births excluded) ..	718	47	2	—
78	Injury at birth (still-births excluded)	39	16	60	—
79	Other diseases peculiar to the first year of life ..	479	79	1,100	—
80	Senility, old age	109	22	183	—
81	Suicide	22	1	5	—
82	Homicide	45	1	37	—
83	Automobile accidents (all motor-driven road vehicles)	378	10	487	2
84	Other voilent or accidental injuries (automobile accidents injuries excepted)	7,775	164	109,292	—
85	Injuries of persons in military service during and of civilians due to operations of war ..	36	—	1,587	—
86	Legal Executions	—	—	—	—
87	Causes of illness unstated or ill-defined ..	1,801	86	26,338	—
	Total	141,766	5,057	1,380,223	49

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