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Bechuanaland Protectorate Government

24 JUN 1952



ANNUAL
MEDICAL AND SANITARY REPORT
for the year 1950

Office of the Director of Medical Services, MAFEKING

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SECTION I — ADMINISTRATION

1. STAFF.

The position regarding Medical Officers remained comparatively stable throughout 1950. Three new appointments were made but some difficulty was encountered in obtaining suitable temporary replacements for two Medical Officers who took overseas leave.

2. The approved establishment is now ten Medical Officers in addition to the Director of Medical Services. This is one less than the previous year when the position of Medical Officer of Health was abolished. As most posts were filled during the year it enabled two Medical Officers to be posted to each of the four Government Hospitals. This was of paramount importance in the N'gamiland area as it resulted in sorely-needed district work, which had perforce to be suspended, being resumed, and greater supervision being exercised over the considerable duties of the health staff. Some of the district visits in N'gamiland entail journeys varying from 500—850 miles and an absence from headquarters of 7—10 days, as these journeys require to be performed by 3-ton lorry.

3. The presence of only two Health Inspectors for the whole of the territory—an area approximately 300,000 square miles—makes general preventive medicine an onerous duty. One Health Inspector works in the N'gamiland and Kalahari districts and the other is mainly responsible for the area along the railway line which runs through the territory from south-east to north-east. There are two European rodent officers in the N'gamiland district and each Health Inspector has a complement of semi-trained African personnel serving under him.

4. The early establishment of the Colonial Development Corporation Abattoir Scheme at Lobatsi makes the posting of a Health Inspector to this centre imperative. Authority has been sought to make such an appointment.

5. Mr. J. O'N. Anderson, Clerk to the Director of Medical Services, proceeded on leave pending retirement after over 30 years of invaluable service to the Administration in Swaziland and this territory.

6. Four new nursing sisters were appointed, of whom one was an overseas appointment, and the others locally recruited. During the latter half of the year the nursing position became fairly stabilised, though owing to the absence of relieving staff, considerable difficulty is always encountered when nurses go on leave or become ill.

7. Wastage amongst the African nursing staff continues to be high, mainly on account of pregnancy. An effort has been made to increase the minimum standard of education qualification for appointments for nurse training, but it has not always been possible to obtain suitable local candidates. The importation of outsiders often introduces the additional problem of language.

8. Examination successes continued to be of high standard. Of 36 candidates who entered for the examinations, 34 passed. Five females and two males successfully completed the final examination in general medical and surgical nursing, of whom three passed with merit and one with honours. Seven nurses also qualified as midwives, two with honours and two with merit.

9. These results reflect great credit on those responsible for the teaching, as during the first part of the year numerous changes in the European nursing staff resulted in considerable lack of continuity of teaching.

LEGISLATION

10. The following legislation affecting the department was enacted during 1950—

- (a) Proclamation No. 28 of 1950—Bechuanaland Protectorate Nurses and Midwives (Amendment) Proclamation, amending Proclamation No. 15 of 1945.
- (b) Government Notice No. 13—Amendment to Public Health Regulations—High Commissioner's Notice No. 116 of 1938 as amended.
- (c) Government Notice No. 252—Amending Medical Service Regulations—High Commissioner's Notice No. 54 of 1930. Native Outpatients' Fees.

SECTION II — PUBLIC HEALTH

YELLOW FEVER

11. When in July, 1950, revised yellow fever regulations came into force following the delineation by the World Health Organisation of portions of the territory in the African yellow fever zone, a concerted effort was made to inoculate as many Europeans and Coloureds as possible against yellow fever. To this end special trips were made by air and nearly 500 inoculations were carried out, representing the vast majority of the non-African population affected by the legislation.

12. No prior consultation had taken place with the Governments concerned before the delineation, which first appeared in the Weekly Epidemiological Bulletin No. R.E.H. 183 of the 28th June, 1950.

13. Towards the latter part of the year the results of the mouse-protection tests on sera collected from persons in the N'gamiland, Okavango Swamps and Chobe districts during 1949 were made available by Dr. J. H. S. Gear of the South African Institute for Medical Research, to whom the Administration is deeply indebted. The report is published hereto as "Annexure A."

14. While the results indicate that cases of infection with the virus of yellow fever do occur, the number is so small, being approximately 1 per cent. of all the individuals whose blood was tested, and the incidence almost entirely in nomadic tribes, that it can be ruled out that the disease is endemic in this territory. This is supported by the complete absence of evidence of infection of the monkey population with the virus of yellow fever.

15. By invitation, the Director of Medical Services attended a meeting of the Standing Medical Committee of the Central African Council in Zomba, Nyasaland, in September, 1950, at which the latest information regarding the yellow fever survey in the Bechuanaland Protectorate was submitted. The meeting was unanimous in urging the Executive Board of the World Health Organisation, through appropriate channels, to cancel, or at any rate suspend, the application of the declaration of Nyasaland and portions of the Bechuanaland Protectorate as endemic yellow fever zones, pending the further investigations necessary to delimit the southern boundary of the yellow fever area in Africa.

16. The Committee was of the opinion that any mass inoculation of the African population would invalidate any future investigation designed to delimit the southern boundary of the yellow fever endemic zone in Africa.

17. Meanwhile, agreement had been reached with the Union Health authorities on the attitude to be adopted to the fairly considerable mine labour coming from and through the demarcated zone.

18. Towards the end of the year it was learned that the representations regarding the withdrawal of the newly delineated yellow fever zones had been successful, and at page 383 of the Weekly Epidemiological Record R.E.H. 207 of the 13th December, 1950, the World Health Organisation stated that "the notification in respect of Nyasaland and that part of the Bechuanaland Protectorate referred to is accordingly withdrawn." In view of this and of the very satisfactory results of the 1949 survey, all yellow fever legislation and restrictions were withdrawn. Neighbouring territories were informed and acted likewise.

19. As far as this territory is concerned, it is felt that the picture regarding yellow fever is almost complete. What does remain to be done, however, is the collection of bloods for mouse protection tests from persons in the villages in and around Francistown and between Francistown and Maun, particularly in the neighbourhood of the overnight stopping-places of the Witwatersrand Native Labour Association convoys. It is hoped to complete this investigation in 1951. Funds for the purpose are available in a Colonial Development and Welfare grant, and the venues are being supplied by the World Health Organisation.

PLAGUE

20. No outbreaks of human plague occurred during the year.

21. Active preventive measures, by means of D.D.T. dusting of huts and rodent destruction, continued to be carried out at regular intervals.

22. A rodent survey in the Ghanzi-Kalahari area in April indicated that the epizootic in the latter part of 1949 had died out and there were signs all round of re-activity. Of 695 huts tested during one survey, not a single flea was produced. These huts are D.D.T.-dusted three times annually. Antagonism towards this dusting was at first widespread, but this attitude is now exceptional and the rodent staff are often asked by the Kalahari people for D.D.T. with which to dust their hair and clothes in order to keep down lice.

23. A total of 28,606 huts in N'gamiland and neighbouring areas were treated with 5 per cent. D.D.T. powder during the year over an area roughly 150,000 square miles. On account of their comparative inaccessibility and the difficulty of getting bulk supplies of D.D.T., cyanogas, etc., to the areas by native dugout, a number of settlements in the Okavango swamps are performed excluded from the routine plague precautionary measures, and are recognised danger spots.

TRYPANOSOMIASIS

24. Twenty-two cases, resulting in three deaths, were admitted to the Maun Hospital during the year. There were two European cases, of which one was probably a recrudescence. Both were Tsetse Fly Control personnel. No admissions took place during the months April-July, cases being fairly evenly distributed amongst the remaining months of the year, with a slightly higher incidence in September-October.

25. Prophylactic quarterly injections of pentamidine isethionate are still given to all tsetse fly control staff, but it is too early as yet to assess the degree of success this measure has produced. Blood smears are taken from all tsetse staff twice every month.

26. During December, blood smears were also taken from a cross section of the people in the Nokaneng area, north-west of Maun, in order to determine whether the position in this area had materially altered so far as human infection was concerned. In all, 227 persons were examined. Preliminary reports, confirmed at the South African Institute for Medical Research, appear to indicate that human cases do not at present exist in this area.

27. The Tsetse Fly Control Committee at Maun met on numerous occasions under the chairmanship of the District Commissioner. This is a very useful committee, comprising as it does members of all the technical departments and a representative each from the European community and from the tribe. The Medical Officer there reports regularly to the committee on the monthly incidence of human infection.

RABIES

28. This disease gave cause for considerable concern during the year. In 1949 the outbreak had been confined to the N'gamiland area and it was only in August, 1950, that muzzling restrictions on dogs were lifted, though movement restrictions remained in force. Over 800 uncontrolled dogs were destroyed in this district.

29. Towards the end of September, 1950, reports of the presence of animal rabies at various places in the eastern portion of the Ngwato Reserve were received. These coincided with reports received of confirmed outbreaks in the adjacent areas of Southern Rhodesia and the Union, and with reports of suspected cases in the Gaborones district in the southern Protectorate. All were later confirmed.

30. Active precautionary measures were immediately brought into force by the Veterinary Department and in anticipation of suspected human rabies, vaccine was sent to the hospitals at Lobatsi, Serowe, Francistown, Maun and Molepolole. Eighty-four courses of the vaccine were subsequently given to suspected human contacts. Not a single person so treated developed the disease, but reports were received of others in isolated villages bitten by allegedly rabid dogs or cats, and not reporting for treatment, having died. It is impossible to obtain accurate figures, but such cases are estimated not to have exceeded three or four, and in any event, in no instance could the diagnosis be established.

SMALLPOX

31. During 1950 fairly widespread outbreaks of this disease occurred with varying mortality. Two hundred and thirty-seven cases with 20 deaths were actually reported by medical Officers and health staff, but it is believed that the actual incidence was higher as many cases are kept hidden. The known distribution was as follows:—

	<i>Cases</i>	<i>Deaths</i>
Francistown	10	—
Gaborones	35	18
Kanye	50	—
Lobatsi	10	—
Mahalapye	5	2
Maun	3	—
Mochudi	3	—
Molepolole	121	—
TOTAL	237	20

32. There is evidence that even after successful vaccination, immunity does not last nearly as long as was once believed. It seems likely that regular vaccination campaigns will need to be arranged far more frequently than has been the case in the past. It would occasion no surprise if this should become an annual necessity.

33. Close on 100,000 vaccinations were performed exclusive of those done at the native recruiting centres.

MALARIA

34. The distribution was as follows:—

Mochudi and Sequani	84
Molepolole	28
Mahalapye	16
Kanye	12
Gaberones	28
Lobatsi	18
Kazungula	232
Maun and district	522
Serowe	642
Francistown	1,242
	TOTAL 2,824

35. Of the 2,824 cases reported from the territory, 522 cases, of which 9 were Europeans, were diagnosed at Maun, the majority originating outside this village. March, April and May were the peak months.

36. The incidence of malaria in Maun itself is extremely low as the result of the continuous anti-malaria measures that are adopted. This is extremely favourably commented on by old residents to whom the vast improvement in living conditions makes a vivid contrast with those existing some years ago, when malaria was rife. Nowadays it is exceptional to hear of a single case being reported during the year under review.

37. In the Mahalapye and Mochudi districts where virulent malaria occurred during the previous year, intensive D.D.T. spraying of pools with M.25 emulsion and mosquito adulticide measures were carried out with the result that very few cases were reported from these areas despite favourable climatic conditions.

38. Of recent years malaria has become more prevalent in the Francistown and Nata areas. Consideration is being given to the introduction in these areas of the measures which have yielded such success elsewhere. The difficulty here is that the same concentration of population as exists in some of the other areas is lacking, so that the procedure becomes far more expensive and one that requires more staff than there are at present funds for.

39. Towards the latter part of the year agreement was reached with the Union Health Department whereby, for an annual payment, the Union would undertake all malaria control measures on the Protectorate side of the Crocodile River on the Tuli Block. This work would be correlated with similar measures undertaken on the Union side of the river. The area concerned is essentially an epidemic one.

40. Simultaneously with this work, it was arranged that whenever possible practical instruction would be given to farmers on the correct procedure to follow regarding control measures on individual farms.

DIPHTHERIA

41. One hundred and fifty-four cases were diagnosed with 4 known deaths. Only in 1948 was the recorded incidence higher. During 1950 the incidence was more widespread.

42. The incidence over the last five years was as follows:—

1946	27
1947	56
1948	242
1949	11
1950	154

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Errata: Omit last sentence of paragraph 36 and read:—
 "Nowadays it is exceptional to hear of a case of black-water fever, not a single case being reported during the year under review."

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and the distribution in 1948 and 1950:—

<i>District</i>	1948	1950
Lobatsi	4	6
Francistown	112	8
Serowe	89	—
Ramoutsa	10	—
Molepolole	37	2
Kanye	—	14
Mochudi and Sequani	—	124
	<hr/>	<hr/>
TOTAL	252	154

43. At the end of the year sporadic cases were still cropping up.

TUBERCULOSIS

44. There was an increase compared with the previous year from 717 to 782 cases of pulmonary tuberculosis, but the incidence of bone, joint and glandular tuberculosis more than quadrupled itself from 215 to 918. To some extent this is considered due to the larger number of persons to whom medical services are now being brought, but the true nature of this increase cannot be determined until such time as a tuberculosis survey of the territory is undertaken. It had been hoped to undertake this survey during the year, but this was found impossible. Every effort is being made to undertake it during 1951.

45. OTHER INFECTIOUS AND CONTAGIOUS DISEASES

<i>Disease</i>	<i>Cases</i>	<i>Deaths</i>
Measles	132	—
Scarlet Fever	8	—
Whooping cough	531	—
Mumps	46	—
Cerebro-spinal meningitis	6	2
Chicken pox	80	—
Anthrax	14	—

GENERAL DISEASES

LEPROSY

46. Thirty-four cases were diagnosed. Wherever possible advantage is taken of the facilities for hospitalisation afforded by the Botsabelo Leper Institution in Basutoland.

DISEASES OF THE RESPIRATORY SYSTEM

47. Nine thousand and fourteen attendances were recorded at out-patients' departments and a further 1,213 cases required hospitalisation. Of these, 1,061 were on account of pneumonia which resulted in only 21 deaths, a mortality rate of less than 2 per cent.

DEFICIENCY DISEASES

48. There was no apparent increase in the incidence though accurate figures are difficult to obtain in view of the signs of such diseases merging into the varying clinical pictures presented by some of the more common diseases.

DYSENTERY

49. Seven hundred cases were reported, of which 36 per cent. were recorded at Kanye. At this centre the Medical Missionary was asked to undertake microscopic examination of the stool in all cases in which a diagnosis of "dysentery" was made. Amoebic cysts were found in 101 cases. Further investigations are being undertaken to determine the reason for the very much increased incidence of this disease in this village.

VENEREAL DISEASE

50. Twelve thousand two hundred and eleven cases were recorded of which syphilis and gonorrhoea accounted for 97 per cent. of the total. Free issues of drugs for the treatment of venereal diseases are made. Owing to the cost, it has not yet been found possible to introduce penicillin as a routine measure for the treatment of syphilis, though this antibiotic is in fact the main treatment for gonorrhoea.

51. At Francistown, of 564 consecutive serological tests carried out in cases not manifestly suffering from venereal disease, the following results were obtained:—

Total number tested 564.

<i>Positive</i>	<i>Negative</i>	<i>Haemolysed</i>	<i>Doubtful</i>
249	268	20	27
44%	48%	3%	5%

52. During the course of the yellow fever survey in the Okavango swamps, Eagle flocculation tests were carried out on sera collected for mouse protection tests, with the following results:—

Total tested 250.

<i>Positive</i>	<i>Negative</i>	<i>Doubtful</i>
126	110	14
50%	44.4%	5.6%

TETANUS

53. Two cases were seen, both at Kanye.

DISEASES OF THE DIGESTIVE SYSTEM

54. This group accounted for 17,578 attendances at the out-patients' departments and a further 492 required hospital treatment. These were mainly constipation, diarrhoea and enteritis. Dysentery was not included in these figures.

BILHARZIA

55. At Mochudi, urine examinations for the presence of bilharzia ova were carried out at the various African schools, with the following results:—

<i>School</i>	<i>Number examined.</i>		<i>Positive results.</i>		<i>Total examined</i>	<i>Total positive.</i>
	<i>Males.</i>	<i>Females.</i>	<i>Males.</i>	<i>Females.</i>		
Junior	85	420	38 44.7%	178 42.38%	505	216 42.77%
Middle	25	24	9 36%	16 66.6%	49	25 51.02%
Bakgatla National	47	229	12 25.53%	86 37.55%	276	98 31.54%

56. These schools are situated on the Notwani River. This overall total of 40.84 per cent. compares with an overall percentage of 63 found when a similar investigation was last made in 1940. All were cases of *S. haematobium* infection.

SECTION III — VITAL STATISTICS

57. These are available only in respect of Europeans:—

Total European population	2,490
Total European births	68
Total European deaths	11
Birth rate per 1,000	27.30
Death rate per 1,000	4.41
Infant mortality	1

Table showing causes of deaths:—

Malaria	2
Cardiac failure	6
Meningitis	1
Gunshot wound	1
Cancer	1

ILLNESS OF OFFICIALS

58. Of a total number of 287 European officials in the Service, 34 were granted more than two weeks' sick leave during the year, for the following reasons:—

Influenza	6
Injuries	3
Malaria	3
Burns	1
Pneumonia	1
Appendicitis	3
Gout	1
Tick-bite fever	3
Ischio-rectal abscess	1
Cystitis	1
Trypanosomiasis	2
Hyperthyroidism	1
Hydronephrosis	1
Herpes Zoster	1
Prolapsed cervical disc.	1
Fibrosis Uteri	1
Erysipelas	1
Cardiac disease	1
Gall stones	1
Hypertensive nephritis	1

One death due to hypertensive nephritis occurred.

59. Of a total number of approximately 1,117 African officials, other than casual labourers, 28 received more than two weeks' sick leave, for the following reasons:—

	<i>Cases</i>	<i>Deaths</i>
Pulmonary Tuberculosis	6	3
Cardiac failure	1	1
Hypertensive myocarditis	1	
Conjunctivitis	1	
Stricture	1	
Pleurisy	2	
Septic hand	1	
Traumatic synovitis knee	1	
Chronic bronchitis	1	
Burns	3	
Mumps	1	
Malaria	1	
Amoebic hepatitis	1	
Pneumonia	1	
Appendicitis	3	
Abscess of leg	1	
Onyalai	1	
Phlebitis	1	

SECTION IV — HYGIENE AND SANITATION

MEDICAL INSPECTION OF SCHOOLS

60. Regular examinations of the pupils and staff at the Bamangwato Tribal College at Moeng were carried out. It was not yet possible to proceed with school medical examinations at other centres.

61. At the Maun European school additional accommodation is being provided. Sanitary arrangements have been improved by the installation of the R.O.E.C. type of latrines.

MATERNITY AND CHILD WELFARE

62. New maternity sections both for Europeans and Africans were completed at Lobatsi and good progress was made with the new maternity unit for Africans at Serowe.

63. At the Hermannsburg Mission at Ramoutsa, which has 8 beds, 143 cases of normal labour were dealt with and 5,510 out-patients' attendances were recorded; 721 hut visits were made.

64. At the Maun Maternity Centre, run by the London Missionary Society, 85 deliveries were effected of which 5 were abnormal. There was one still-birth. There were 135 ante-natal enrolments and 254 visits were paid to patients' homes. This centre has 10 beds.

65. At the Serowe Government Hospital where the training of pupil midwives is concentrated, the following table shows the work performed by the Maternity unit:—

Normal deliveries	335
Abnormal deliveries	32
Ante-natal attendances	1,981
Child welfare attendances	285

66. At the Francistown location some improvements have been effected. New huts of sound construction have been erected, a new beer-hall has been built and an adequate water-supply is available for residents.

67. The difficulties of control are enhanced by the lack of tribal authority and the fact that the population is mainly a floating one.

68. Two small gold mines have operated in the Francistown area during the year under review. Both were inspected by the health staff and recommendations for improving the sanitation were submitted to the owners.

MINE AND OTHER RECRUITING

69. During the year 18,899 mine labourers from the Territory were recruited through the Witwatersrand Native Labour Association and the Native Recruiting Corporation, of which 8,647 were by the former agency and 10,252 by the latter. The Witwatersrand Native Labour Association is the company concerned with the employ of tropical labour, i.e. from north of latitude 22 deg. S.

70. At Maun and Francistown quite a considerable number of recruits from neighbouring territories are also medically examined by our medical officers. For example, at Maun 6,426 recruits were examined, of which 98 were rejected, i.e. 1.5 per cent; 4,452 repatriates were also examined there prior to being returned to their homes.

71. Recruiting for the Colonial Development Corporation cattle ranching project at Matetsi, near the border between Southern Rhodesia and the Bechuanaland Protectorate, commenced in N'gamiland in October. At the end of 1950, 81 recruits had been attested.

X-RAYS

72. During the year 922 X-rays were carried out at the various Government hospitals.

HOSPITAL VISITING COMMITTEE

73. At Maun, the Committee was instrumental in raising £246 for hospital comforts for both European and African patients.

PRISONS AND ASYLUMS

74. Only minor cases of illness amongst prisoners were reported and no deaths occurred. No prisoner required to be released because of illness. Improvements at the Maun and Molepolole gaols were effected.

75. Additional accommodation for four to six patients was provided at the Lobatsi Mental Home, but the difficulties in accommodating those mental patients who are in need of detention and institutional treatment are still great. The general policy is to insist that the responsibility for the harmless "village idiot" type of mental patient must remain with the family and to resist the strong tendency in such cases to throw the onus on to Government.

76. The cost of a modern Asylum for the three High Commission Territories is likely to be prohibitive, but the possibility of coming to some agreement with institutions in neighbouring territories is being explored. The simple provision of additional accommodation for mental patients, while admittedly necessary as a protective measure for the community, will achieve no results.

MEAT INSPECTION

77. Of 295 cattle, 301 sheep, 380 goats and 4 pigs slaughtered and inspected at Maun over a certain period, the following condemnations, either total or partial, were found necessary:—

	Cattle	Sheep	Goats
Cysticercus bovis	3	0	0
Fluke	43	30	28
Echinococcus cysts	11	6	2
Styletia hepatica	0	43	69
Cirrhosis of the liver	2	1	1
Broncho-pneumonia	2	4	0
Generalised oedema	1	0	0
Emaciation	1	0	0

There was no condemnation in respect of the pigs.

78. At Francistown, 471 cattle, 1,063 sheep and goats and 10 pigs were slaughtered and inspected over a certain period. These revealed the following abnormalities which necessitated partial or total destruction:—

	Cattle	Sheep	Goats
Cysticercus bovis	20	0	0
Cirrhosis of the liver	1	0	0
Generalised oedema	0	1	0
Styletia hepatica		216	

SECTION V — HOSPITALS AND DISPENSARIES

79.—

<i>Outpatients</i>	1949	1950
First attendances	80,180	91,433
Subsequent attendances	247,028	269,684
Total attendances	327,208	361,117
<i>In-patients</i>	6,251	7,444

80. A total of 39 beds is available in hospitals throughout the territory for European residents, and 334 beds for Africans. Of these totals, 35 European beds and 212 African beds are provided by Government institutions, the remainder being provided by Mission hospitals. Based on the last available census figures, this means that there is now one bed for 790.9 of the population.

81. At Maun, the extensions to the hospital were completed and a house for a second doctor was also built. At Lobatsi, two new African wards and a kitchen block have been erected, while at Serowe and Kanye good progress was made with the new Maternity Unit and the Health Centre (which is to have 17 beds), respectively.

82. At the Maun hospital, the installation of new electric light and water was completed. A similar programme was completed at the hospital at Lobatsi. Funds are also available and the necessary plant has been ordered for the installation of another unit at Serowe.

83. At Francistown, extensions to the out-patients' department and a new annexe for the Matron were completed.

84. Water-borne sewerage was installed in the staff quarters at Serowe Hospital.

85. A new ambulance was acquired for the Serowe Hospital and this has been in great demand.

VISITORS

86. In June, 1950, Professor F. Cambournac of Lisbon University visited the Territory as the World Health Organisation Consultant in Malariology. His main purpose was to obtain data for the Conference on Malaria in Africa which was held in Kampala during December, 1950. Unfortunately, his stay was of short duration and he was able to visit only the southern Protectorate.

87. Miss B. M. Borley, Overseas Organiser of the British Red Cross Society, arrived in the Territory in July and stayed for almost three months during which time she visited most centres. As the result of her visit the Bechuanaland Protectorate Branch of the British Red Cross Society was founded. His Honour the Resident Commissioner kindly agreed to be President of the Branch.

FINANCE

88. A matter of vital concern to the Department is the progressively mounting costs of maintaining curative services. This was only too apparent under every heading—foodstuffs, drugs dressings and equipment. It is obvious too, that the peak of the spiral has not been reached. Although the Department was voted a fair share of the Territory's budget, it was found necessary to call for drastic measures in the imposition of all-round economies. My grateful appreciation is due to all staff for their wholehearted co-operation in reducing expenditure to the absolute minimum commensurate with efficiency.

89.—

Total revenue from Hospital and dispensary fees	£4,675	9	3
Total Ordinary Expenditure of the Medical Department:			
(a) Personal Emoluments	£34,732	0	8
(b) Other charges	33,018	19	4
	£67,751	0	0
Total ordinary revenue of the Bechuanaland Protectorate ..	£568,437	0	0
Proportion of ordinary medical expenditure to ordinary revenue of Protectorate		11.918%	
Total ordinary expenditure of the Bechuanaland Protectorate	£570,646	0	0
Proportion of ordinary medical expenditure to ordinary expenditure of Protectorate		11.75%	

The figures are for the financial year ended 31st March, 1950, being the latest audited figures available.

90. In conclusion, it is with gratitude that I record the loyalty and enthusiasm of all grades of the staff of the Department.

M. L. FREEDMAN.
Director of Medical Services.

Mafeking.

ANNEXURE "A"

YELLOW FEVER SURVEY OF N'GAMILAND — 1949.

1. In June and July, 1949, approximately 450 blood specimens were collected from the inhabitants of the villages bordering on the Okavango swamps in N'gamiland, Northern Bechuanaland Protectorate.

2. At the same time approximately 50 blood specimens were collected from monkeys shot in trees in the neighbourhood of the swamps.

3. The sera separated from these blood specimens were submitted to the yellow fever mouse protection test, using the 17D strain of yellow fever virus for the challenge. Several specimens could not be tested because there was insufficient serum, and a few because the blood proved to be contaminated.

4. The results of the tests are enclosed.

5. In interpreting these results, the following criteria, based on previous experience, were adopted:—

If of 8 mice inoculated 6 or more survived	Positive
If of 8 mice inoculated 2 or less survived	Negative
If of 8 mice inoculated 3—5 survived	Inconclusive

6. In a series of tests 10 mice were used to note whether any advantage was gained. In these tests the following criteria were adopted:—

If of 10 mice inoculated 7 or more survived	Positive
If of 10 mice inoculated 3 or less survived	Negative
If of 10 mice inoculated 4—6 survived	Inconclusive

7. It was concluded that no greater accuracy was achieved by the use of a larger number of mice.

8. Where sufficient serum was left over, the tests on those sera giving positive or inconclusive tests were repeated. These repeat tests often revealed that a serum giving an inconclusive result on the first test, gave a negative result on the second test. However, the vast majority of sera gave clear cut results.

9. The following table gives a summary of these results:—

Village	No. of Specimens.			Total
	Positive	Inconclusive	Negative	
Tsau	1	3	51	55
Nokaneng	0	3	52	55
Shakawe	2	8	71	81
Seronga	0	7	80	87
Maun	1	1	56	58
Katchikau	0	3	41	44
Kasane	1	6	44	51
TOTALS	5	31	395	431
	1.1%	7%	91.9%	100%

Monkey Sera.

Ikwoa	} Area	0	1	39	40
Seronga						
Nokaneng						
Kasane						
Serondellas	0	0	3	3		
Kazungula	0	0	1	1		
TOTALS	0	1	46	47		

10. These results are somewhat similar to those obtained in a previous survey undertaken by Dr. Smithburn on bloods collected in 1945.

11. It is important to note that in the meantime there has been no increase in the proportion of bloods giving positive protection tests. Indeed, the proportion of positive sera to negative has declined somewhat. It, therefore, appears that there is no evidence at present

that conditions are building up to an outbreak of yellow fever such as occurred in the Nuba Mountain region of the Sudan.

CONCLUSIONS

12. It may be concluded from these results that there is evidence of the occurrence of cases of infection with the virus of yellow fever in the area of the Okagango swamps. However, the number of such cases is very small, being approximately 1 per cent. of all the individuals whose blood was tested.

13. There is no evidence of the infection of the monkey population of this area with the virus of yellow fever.

14. It appears, therefore, that yellow fever is not endemic in this region. It seems that the small number of human bloods giving positive mouse protection tests are from individuals who owe their immunity either to a transient introduction of the infection or to a visit to an infected area further north. Dr. de Meillon has suggested that the transient introduction of the virus by migrants from further north is the most likely explanation for these infections.

Sgd. J. H. S. GEAR.

Return of
DISEASES AND DEATHS
for the year 1950

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS		†Total Cases Treated	‡Remaining in Hospital at end of 1950	OUT-PATIENTS	
		Yearly Total				Male	Female
		Admissions	Deaths				
I—Epidemic, Endemic and Infectious Diseases.							
1. Enteric Group—							
(a) Typhoid Fever		8	3	8		6	1
(b) Type not defined	1	9	1	10	1		
2. Typhus				9		6	10
3. Relapsing Fever	1	8				9	3
4. Undulant Fever		2		2		1	
5. Malaria—							
(a) Tertian	1	420	3	421	2	548	629
(b) Quartan		8		8			
(c) Aestivo-autumnal	1	247	5	248	2	335	635
6. Smallpox—							
Alastrim		21		21	1	77	109
7. Measles		14		14		60	58
8. Scarlet Fever						3	5
9. Whooping Cough		17		17		203	311
10. Diphtheria		92	4	92	1	32	30
11. Influenza		153	1	153	4	1,053	1,581
13. Mumps		3		3		25	18
15. Epidemic Diarrhoea						7	3
16. Dysentery—							
(a) Amoebic		34		34		122	144
(b) Bacillary		17	2	17		92	75
(c) Undefined or due to other causes	2	26		28		71	117
20. Leprosy	1	3		4	1	17	13
21. Erysipelas		1		1	1	4	4
24. Epidemic Cerebro-spinal Fever		5	2	5	1	1	
25. Other Epidemic Diseases—							
(a) Varicella (Chicken-pox)		14		14	3	31	35
(b) Kala-azar		2		2	2	2	

	(c) Phlebotomus Fever		1		1	1	1	
	(d) Epidemic Dropsy						3	1
	(e) Trypanosomiasis		20	3	20	2	2	
27.	Anthrax						7	7
29.	Tetanus		1		1	1	1	1
30.	Mycosis		2		2		2	
31.	Tuberculosis, Pulmonary and Laryngeal	10	131	30	141	6	324	317
I—Epidemic, Endemic and Infectious Diseases (contd.)								
32.	Tuberculosis of the Meninges or Central Nervous System		2	2	2		23	4
33.	Tuberculosis of the Intestines or Peritoneum		10	3	10		1	3
34.	Tuberculosis of the Vertebral Column		16		16	2	15	5
35.	Tuberculosis of Bones and Joints	2	14		16		13	9
36.	Tuberculosis of other organs—							
	(a) Skin or Subcutaneous Tissue (Lupus)		1		1			1
	(b) Lymphatic System	2	20		22		47	70
	(c) Genito-urinary						3	
	(d) Other organs						29	16
37.	Tuberculosis disseminated—							
	(a) Acute		1	1	1		12	38
38.	Syphilis—							
	(a) Primary		14		14		1,057	1,175
	(b) Secondary		19		19		1,229	1,756
	(c) Tertiary	3	37	8	40	1	559	834
	(d) Hereditary		12		12	1	1,102	1,174
	(e) Period not indicated	1	45	2	46		80	82
39.	Soft Chancre		1		1		160	129
Total carried forward		25	1,451	70	1,476	33	7,375	9,403

The form shows in the main the arrangement of diseases in the International Nomenclature, 1921 Edition. To save space the unimportant diseases of any class can be grouped in their places as "Other Diseases" of the Class.

*i.e. the year previous to that for which the return is made.

†"Total cases treated" will, of course, include those remaining in Hospital at the end of the previous year.

‡The figure in this column to be carried on to the next year's Return.

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS		†Total Cases Treated	‡Remaining in Hospital at end of 1950	OUT-PATIENTS	
		Yearly Total				Male	Female
		Admissions	Deaths				
Brought forward	25	1,451	70	1,476	33	7,375	9,403
I—Epidemic, Endemic and Infectious Diseases (contd.)							
40. A.—Gonorrhoea and its complications	2	91		93		1,325	1,028
B.—Gonorrhoeal Ophthalmia		8		8		46	57
C.—Gonorrhoeal Arthritis		7		7		67	31
D.—Granuloma Venereum		2		2			
41. Septicaemia		3	2	3		24	31
II—General Diseases not mentioned above.							
43. Cancer or other malignant Tumours of the Buccal Cavity		1		1		2	
44. Cancer or other malignant Tumours of the Stomach or Liver	1	10	3	11		6	6
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum		5	1	5		8	11
46. Cancer or other malignant Tumours of the Female Genital Organs		19	2	19			18
47. Cancer or other malignant Tumours of the Breast		2		2			2
48. Cancer or other malignant Tumours of the Skin		4		4		3	2
49. Cancer or other malignant Tumours of the Organs not specified	1	3	3	4		4	2
50. Tumours non-Malignant	1	37	1	38		49	77
51. Acute Rheumatism		69		69	1	514	751
52. Chronic Rheumatism		43		43		794	1,489
53. Scurvy (including Barlow's Disease)	11	51	1	62	1	209	297
54. Pellagra		5	1	5		119	175

55.	Beri-Beri		23	2	23		106	103
56.	Rickets		1		1		12	13
57.	Diabetes (not including Isipidus) ..		1		1		2	1
58.	Anaemia—							
	(a) Other Anaemias and Chlorosis ..	1	28	2	29		466	832
59.	Diseases of the Pituitary Body ..		1		1			
60.	Diseases of the Thyroid Gland—							
	(a) Exophthalmic Goitre		1		1		1	7
	(b) Other diseases of the Thyroid Gland, Myxoedema						2	26
62.	Diseases of the Thymus							1
64.	Diseases of the Spleen		3		3			
66.	Alcoholism		1		1		8	2
67.	Chronic poisoning by mineral sub- stances (lead, mercury, etc.)		1		1		1	3
69.	Other General Diseases—							
	Auto-intoxication		11		11		44	61
	Diabetes Insipidus		1	1	1			
III—Affections of the Nervous System and Organs of the Senses.								
70.	Encephalitis (not including Encephal- itis Lethargica)		1		1			2
71.	Meningitis (not including Tubercu- lous Meningitis or Cerebro-Spinal Meningitis)		6	1	6		3	1
72.	Locomotor Ataxia		3		3		2	
73.	Other affections of the Spinal Cord ..		3		3		4	4
74.	Apoplexy							
	(a) Haemorrhage		5	2	5		6	8
	(b) Embolism		1		1			1
	(c) Thrombosis		2		2			1
75.	Paralysis—							
	(a) Hemiplegia	1	5	3	6		9	11
	(b) Other Paralyses		3		3		9	17
76.	General Paralysis of the Insane ..		1		1			
77.	Other forms of Mental Alienation ..		11		11	1	22	38
78.	Epilepsy		7	1	7		35	42
79.	Eclampsia, Convulsions (non-puer- peral) 5 years or over						4	10
Total carried forward		43	1,931	96	1,974	36	11,281	14,564

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS			†Total Cases Treated	‡Remaining in Hospital at end of 1950	OUT-PATIENTS	
		Yearly Total		Male			Female	
		Admissions	Deaths					
Brought forward	43	1,931	96	1,974	36	11,281	14,564	
III—Affections of the Nervous System (contd.)								
80. Infantile Convulsions.		1		1		2	4	
81. Chorea		3		3		1	4	
82. A.—Hysteria	1	9		10		34	86	
B.—Neuritis		21		21		378	410	
C.—Neurasthenia		5		5		77	75	
83. Cerebral Softening		2	2	2		5	2	
84. Other affections of the Nervous System, such as Paralysis Agitans						1	5	
85. Affections of the Organs of Vision—								
(a) Diseases of the Eye		18		18		82	116	
(b) Conjunctivitis	1	99		100	2	811	866	
(c) Trachoma		2		2		68	106	
(d) Tumours of the Eye		3		3	1	26	43	
(e) Other affections of the Eye	3	64		67	5	463	683	
86. Affections of the Ear or Mastoid Sinus	1	65	1	66	1	559	700	
IV—Affections of the Circulatory System.								
87. Pericarditis		2	1	2		12	15	
88. Acute Endocarditis or Myocarditis		19	5	19		34	64	
89. Angina Pectoris						5	7	
90. Other Diseases of the Heart—								
(a) Valvular		8		8		196	26	
Mitral		18		18		2	18	
Aortic	1	4		5	1	1	5	
Pulmonary		3		3		13	16	
(b) Myocarditis	1	18	6	19		67	84	

91.	Diseases of the Arteries—						
	(a) Aneurism	19		19		1	2
	(b) Arterio-Sclerosis					41	47
	(c) Other diseases	6		6		27	37
92.	Embolism or Thrombosis (non-cerebral)	8		8			
93.	Diseases of the Veins—						
	Haemorrhoids	1		1		13	18
	Varicose Veins					7	17
	Phlebitis	7		8	1	11	10
94.	Diseases of the Lymphatic System—						
	Lymphangitis	5		5		50	60
	Lymphadenitis, Bubo (non-specific)	14		14		86	110
95.	Haemorrhage of undetermined cause	7		7	1	64	78
96.	Other affections of the Circulatory System	13		13		197	299
V—Affections of the Respiratory System.							
97.	Diseases of the Nasal Passages—						
	Adenoids	4		4		21	28
	Polypus	10		10		22	33
	Rhinitis	3		3		76	92
	Coryza	26		26		578	870
98.	Laryngitis	32	1	32		98	123
99.	Bronchitis—						
	(a) Acute	1	126	1	127	2	1,152
	(b) Chronic		50	1	50		797
100.	Broncho-Pneumonia		323	15	323	10	123
101.	Pneumonia—						
	(a) Lobar	4	106	2	110	3	198
	(b) Unclassified	3	92	4	95	3	98
102.	Pleurisy, Empyema	1	32	1	33		63
103.	Congestion of the Lungs	2	379		381		561
104.	Gangrene of the Lungs		1		1		2
105.	Asthma		18		18		161
106.	Pulmonary Emphysema						9
Total carried forward		63	3,577	136	3,640	66	18,574
							23,196

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS		†Total Cases Treated	‡Remaining in Hospital at end of 1950	OUT-PATIENTS	
		Yearly Total				Male	Female
		Admissions	Deaths				
Brought forward	63	3,577	136	3,640	66	18,574	23,196
VI—Diseases of the Digestive System.							
108. A.—Diseases of Teeth or Gums— Caries, Pyorrhoea, etc.	2	29		31	1	736	1,038
B.—Other affections of the Mouth— Stomatitis		17		17		189	272
Glossitis, etc.		1		1		5	12
109. Affections of the Pharynx or Tonsils— Tonsillitis	1	106	1	107		502	683
Pharyngitis		7		7		99	160
110. Affections of the Oesophagus		1		1		2	1
111. A.—Ulcer of the Stomach		1		1	1		2
112. Other affections of the Stomach— Gastritis		32		32		338	554
Dyspepsia, etc.		20		20		909	2,052
113. Diarrhoea and Enteritis— Under two years		55	6	55		833	924
114. Diarrhoea and Enteritis— Two years and over		55	1	55		663	796
Colitis		8		8		45	32
Ulceration		1		1		31	
115. Ankylostomiasis							
116. Diseases due to Intestinal Parasites— (a) Cestoda (Taenia)		12		12		63	80
(b) Trematoda (Flukes)						1	1
(c) Nematoda (other than Ankylos- toma)						1	2
Ascaris		2		2		52	41
Strongylus						11	17
(d) Unclassified						26	36

117.	Appendicitis	1	25		26	2	4	35
118.	Hernia		19	1	19		94	61
119.	A.—Affections of the Anus, Fistula, etc.	2	6	1	8		16	47
	B.—Other affections of the Intestines—							
	Enteroptosis		1	1	1		1	
	Constipation	1	37		38	1	2,128	3,386
122.	Cirrhosis of the Liver—							
	(a) Alcoholic		1		1		3	1
	(b) Other forms		5	1	5		6	7
123.	Biliary Calculus		1		1		1	
124.	Other affections of the Liver—							
	Abscess						12	12
	Hepatitis		18	2	18	1	20	27
	Cholecystitis		4		4		9	66
	Jaundice		7	1	7	1	8	7
125.	Diseases of the Pancreas						4	3
126.	Peritonitis (of unknown cause)		3	1	3			1
127.	Other affections of the Digestive Sys- tem	1	11		12		188	232
VII—Diseases of the Genito-urinary System (Non-Venereal).								
128.	Acute Nephritis		13	2	13		94	100
129.	Chronic Nephritis		11		11		150	111
130.	A.—Chyluria						6	3
	B.—Schistosomiasis		8		8		79	110
131.	Other affections of the Kidneys—							
	Pyelitis, etc.	1	39		40	1	84	145
132.	Urinary Calculus		1		1		2	
133.	Diseases of the Bladder—							
	Cystitis	3	20	1	23		244	957
134.	Diseases of the Urethra—							
	(a) Stricture		19		19	1	24	1
	(b) Other		4		4		48	35
135.	Diseases of the Prostate—							
	Hypertrophy		3		3	1	4	
	Prostatitis						18	
Total carried forward		75	4,180	155	4,255	76	26,327	35,246

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS		†Total Cases Treated	‡Remaining in Hospital at end of 1950	OUT-PATIENTS	
		Yearly Total				Male	Female
		Admissions	Deaths				
Brought forward	75	4,180	155	4,255	76	26,327	35,246
VII—Diseases of the Genito-urinary System (non-Venereal)—contd.							
136. Diseases (non-Venereal) of the Genital Organs of Man—							
Epididymitis	2	4		6		89	
Orchitis	1	3		4		32	
Hydrocele		13		13		31	
Ulcer of Penis		8		8		40	
137. Cysts or other non-malignant Tumours of the Ovaries	1	8		9			43
138. Salpingitis—							
Abscess of the Pelvis	3	78	1	81	1		2,433
139. Uterine Tumours (non-malignant) ..		28		28			170
140. Uterine Haemorrhage (non-puerperal)		5		5			676
141. A.—Metritis		10		10			94
B.—Other affections of the Female Genital Organs—							
Displacement of Uterus	1	17	1	18			157
Amenorrhoea							1,067
Dysmenorrhoea		13		13			2,400
Leucorrhoea		12		12			1,765
142. Diseases of the Breast (non-puerperal)—							
Mastitis	2	2		4			52
Abscess of Breast		7		7			85
VIII—Puerperal State.							
143. A.—Normal Labour	6	625	4	631	10		393
B.—Accidents of Pregnancy—							
(a) Abortion	1	49	1	50	2		161

	(b) Ectopic Gestation		4	1	4	1		4
	(c) Other accidents of Pregnancy ..	1	49		50			118
144.	Puerperal Haemorrhage		1		1			2
145.	Other accidents of Parturition ..		13	1	13			28
146.	Puerperal Septicaemia		5	1	5	1		22
147.	Phlegmasia Dolens							1
148.	Puerperal Eclampsia		4	1	4			2
149.	Sequelae of Labour	1	29	1	30	2		32
150.	Puerperal affections of the Breast ..		5		5			32
	Ante-natal	3	355	9	358	16		4,281
IX—Affections of the Skin and Cellular Tissues.								
151.	Gangrene						18	22
152.	Boil—							
	Carbuncle	1	37		38	1	423	563
153.	Abscess—							
	Whitlow	2	74	1	76	1	242	292
	Cellulitis							
154.	A.—Tinea		2		2		98	130
	B.—Scabies		14		14	1	497	627
155.	Other Diseases of the Skin—							
	Brythema		12		12		212	258
	Urticaria	2	10		12		390	640
	Eczema	1	13		14	1	463	677
	Herpes		3		3		110	199
	Psoriasis						91	134
	Elephantiasis		1		1	1	1	2
	Myiasis						3	
X—Diseases of Bones and Organs of Locomotion (other than Tuberculosis).								
156.	Diseases of Bones—							
	Osteitis		12		12		45	39
157.	Diseases of Joints—							
	Arthritis	2	56		58		182	237
	Synovitis	1	40		41		247	118
158.	Other Diseases of Bones or Organs of Locomotion		2	1	2		240	369
Total carried forward		106	5,803	178	5,909	114	29,781	53,571

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1950

DISEASES	*Remaining in Hospital at end of 1949	IN-PATIENTS			OUT-PATIENTS		
		Yearly Total		†Total Cases Treated	‡Remaining in Hospital at end of 1950	Male	Female
		Admissions	Deaths				
Brought forward	106	5,803	178	5,909	114	29,781	53,571
XI—Malformations.							
159. Malformations—							
Hydrocephalus		4		4		5	11
Spina Bifida, etc.						8	6
XII—Diseases of Infancy.							
160. Congenital Debility		2		2		66	81
161. Premature Birth		10	7	10		14	10
162. Other affections of Infancy		1		1		52	45
163. Infant neglect (infants of three months or over)		13	5	13	1	32	43
XIII—Affections of Old Age.							
164. Senility—							
Senile Dementia		3		3		32	49
XIV—Affections produced by External Causes.							
166. Corrosive Poisoning (intentional)						1	
168. Suicide by Hanging or Strangulation						1	1
170. Suicide by Firearms						1	
175. Food Poisoning—							
Botulism		1		1		1	3
176. Attacks of poisonous animals—							
Snake Bite		12	1	12		39	20
Insect Bite		9		9		41	42
177. Other accidental Poisonings	2	11*	1	13		5	9
178. Burns (by Fire)	4	77	2	81	4	433	426
179. Burns (other than by Fire)	2	16		18	1	56	73
181. Poisoning by Gas (accidental)		1		1		1	

183.	Wounds (by Firearms, war excepted)		4		4		4	1
184.	Wounds (by cutting or stabbing Instruments)	7	71	1	78	4	324	192
185.	Wounds (by Fall)	2	90		92	1	377	420
186.	Wounds (in Mines or Quarries)		12		12	1	47	22
187.	Wounds (by Machinery)		5		5		80	28
188.	Wounds (crushing, e.g. railway accidents, etc.)	2	11	1	13		25	13
189.	Injuries inflicted by Animals, Bites, Kicks, etc.	1	77	2	78	2	285	152
192.	A.—Over Fatigue						26	23
	B.—Hunger or Thirst						1	
194.	Exposure to Heat—							
	Heatstroke						2	2
	Sunstroke		1		1			2
195.	Lightning Stroke		1		1		3	1
196.	Electric Shock						2	1
198.	Murder by cutting or stabbing Instruments						1	
199.	Murder by other means							2
201.	A.—Dislocation	3	14		17		25	18
	B.—Sprain	1	28		29		77	40
	C.—Fracture	10	96	1	106	5	138	82
202.	Other external injuries	4	254	1	258	3	334	215
XV—III-Defined Diseases.								
204.	Sudden Death (cause unknown)		1	1	1			
205.	A.—Diseases not already specified or ill-defined—							
	Ascites	1	13		14		6	9
	Oedema		22		22		12	21
	Asthenia		27	1	27	1	267	417
	Shock							1
	Hyperpyrexia		94		94		61	65
	B.—Malingering		2		2		5	3
	Born in Hospital	2	71	2	73	1		
XVI—Diseases, the total of which have not caused 10 Deaths.								
		14	430	10	444	19	2,101	545
TOTAL		161	7,283	214	7,444	157	34,768	56,665

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