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Contributors

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Bechuanaland Protectorate

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1956

Mafeking Mail—1/58-1065

ANNUAL MEDICAL AND SANITARY REPORT FOR THE YEAR 1956

CONTENTS

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BECHUANALAND PROTECTORATE

ANNUAL MEDICAL
AND
SANITARY REPORT

FOR THE YEAR 1956

SECTION I - ADMINISTRATION

1. STAFF

SENIOR SERVICE

	Director of Medical Services
1	Medical Officer of Health
13	Medical Officers
3	Health Inspectors
2	Rodent Officers
1	Matron
3	Sisters-in-Charge
9	Nursing Sisters
1	District Nursing Sister
1	Housekeeper
3	Clerks
1	Storeman
2	Lady Clerks

JUNIOR SERVICE

5	Health Assistants
19	Dispensers
1	Microscopist
1	Senior Sanitary Inspector
4	Sanitary Inspectors
2	Pupil Sanitary Inspectors
4	Learner Rodent Assistants
15	Medical Orderlies
25	Staff Nurses
29	Probationer Nurses
2	Male Nurses
4	Male Attendants (Mental Home)
3	Female Attendants (Mental Home)
7	Cooks
5	Clerks
7	Drivers
7	Lorry Labourers
4	Kitchen Helps
5	Gardener/Messengers
6	Labourers
17	Launderers
4	Sewing Women
22	Housemaids.

2. Although extra Senior Service posts were approved in the 1956/57 Estimates, there has been great difficulty in filling them and the number of occupied posts remain substantially the same as in 1955.

3. The Director of Medical Services, Dr. M.L. Freedman, O.B.E. went on overseas leave from 24th March to 17th July, 1956. On 30th December, 1956 he went on leave pending retirement.

4./

4. Dr. B. T. Squires, O.B.E. was transferred to Mafeking as Acting Director of Medical Services as from 31st December, 1956.

5. The position as regards trained nursing staff remained acute during the year. Although a series of locums helped to fill the gaps, the position remained most unsatisfactory. At the end of 1956 only five Sisters were on the fixed establishment out of a total of twelve approved posts, and of these Sisters one was on an overseas course for the last five months of the year.

6. Sister P. M. Leeney was appointed to a World Health Organization Fellowship during the year. She left in August to undergo a two-year Sister-Tutor's course in London.

VISITORS

7. Dr. F. Zumpt, Senior Entomologist, South African Institute for Medical Research.

Miss R. S. Ingle, British Red Cross Society.

Dr. K. Pitchford, World Health Organization consultant in Bilharziasis.

Dr. E. B. Worthington, C.C.T.A., London.

Dr. E. A. Lewis, World Health Organization.

Dr. E. Kjolbye, World Health Organization Tuberculosis Survey Team; leader of the Tuberculosis Survey Team to the High Commission Territories.

Miss Lyle Creelman, Chief of the Nursing Section, World Health Organization, Geneva.

Mr. R. Bogue, Chief of the Health Education Section, World Health Organization, Geneva.

Dr. H. G. Baity, Chief of the Environmental Sanitation Section, World Health Organization, Geneva.

Professor J. E. Azar, Assistant Professor of Communicable Diseases, American University of Beirut.

Dr. K. Martin, World Health Organization, East African Area Office, Nairobi.

LEGISLATION

8. Government Gazette No. 2915 - Proclamation No. 1. Bechuanaland Protectorate Habit-Forming Drugs (Amendment) Proclamation, 1956.

Government Gazette No. 2920, - High Commissioner's Notice No. 9 of 1956. Poisons Amendment List.

Government Gazette No. 2922 - Proclamation No. 16 of 1956. Bechuanaland Protectorate Medical, Dental and Pharmacy (Amendment) Proclamation, 1956.

Government Gazette No. 2922 - Government Notice No. 7 of 1956. Maternity Charges, Ghanzi District.

Dr. L. [illegible] Fairbank, O.B.E. was transferred to Mombasa [illegible]
[illegible] Director of Medical Services at [illegible] [illegible].

The position as regards [illegible] [illegible] medical
[illegible] during the year. Although [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] the [illegible] [illegible] [illegible] out of
[illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] the first [illegible] months of the year.

Sister [illegible] [illegible] was appointed to a World Health
[illegible] and [illegible] during the year. She left in [illegible] to
[illegible] a [illegible] [illegible] post in London.

[illegible]

Dr. [illegible] [illegible], Senior [illegible], South African
Institute [illegible] [illegible].

Miss M. L. Inglis, British Red Cross Society.

Dr. [illegible] Pitchford(?), World Health Organisation
Consultant in [illegible].

Mr. [illegible] [illegible], C.O.S.A.(?), London.

Dr. [illegible] [illegible], World Health Organisation.

Dr. [illegible] [illegible], World Health Organisation Tuberculosis
[illegible] Team, Leader of the [illegible] Survey [illegible]
[illegible] [illegible] [illegible].

Miss [illegible], [illegible] of the Nursing Section,
World Health Organisation, Geneva.

Dr. [illegible], Chief of the [illegible] [illegible] Section,
World Health Organisation, Geneva.

Dr. [illegible] [illegible], Chief of the Environmental Sanitation
Section, World Health Organisation, Geneva.

Professor [illegible] [illegible], Assistant Professor of
[illegible] [illegible], [illegible] University of [illegible].

Dr. [illegible], World Health Organisation, [illegible]
[illegible] [illegible].

[illegible]

Government Notice No. [illegible] - Publication No. 1.
[illegible] [illegible] [illegible] [illegible]
[illegible], [illegible].

Government Notice [illegible] - [illegible] [illegible]
[illegible] No. [illegible] [illegible] [illegible].

Government Notice No. [illegible] - [illegible] No. [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible].

Government Notice No. [illegible] - [illegible] [illegible] No. [illegible]
[illegible] [illegible] [illegible] [illegible].

SECTION II

SECTION II - PUBLIC HEALTH

9. In this report Public Health activities have been described in more detail than heretofore. There is no doubt that, in a territory such as the Bechuanaland Protectorate which represents peculiar and probably unique medical problems (e.g. those connected with the annual semi-nomadic migration from the villages to the arable areas), the preventive side is especially important.

ADMINISTRATION

10. STAFF

Senior Service

1	Medical Officer of Health
2	Health Inspectors
2	Rodent Officers
1	Field Officer (Temporary)
1	Field Survey Officer (Temporary)

Junior Service

1	Senior Sanitary Inspector
5	Sanitary Inspectors
1	Health Assistant
1	Pupil Sanitary Inspector
4	Learner Rodent Assistants

11. Temporary appointments under Colonial Development and Welfare Scheme No. D.2835 on Diphtheria/Whooping Cough Mass Prophylactic Campaign :-

Senior Service

1	Field Officer

Junior Service

8	Field Assistants
2	Clerks
2	Drivers
2	Cooks
2	Lorry Labourers

12. The post-war development programme financed by a Colonial Development and Welfare Fund Scheme provides a third European Health Inspector's post which is still vacant.

13. The Medical Officer of Health covered 11,600 miles on duty during the year; the Health Inspector of the Northern Division 12,689 miles and the Health Inspector attached to the Southern Division 8,252 miles.

14. The two Rodent Officers carried out their usual plague control duties, in addition to which the Rodent Officer stationed at Gaberones was attached to C.D.F. Scheme D.2835 (Diphtheria/Whooping Cough Campaign) for the last four months of the year.

15. Two temporary Field Officers were appointed during the year, one of whom was attached to C.D.F. Scheme D.2835 (Diphtheria/Whooping Cough Campaign).

NOTES ON SOME DISEASES OF PUBLIC HEALTH INTEREST

16. Bilharziasis. At the beginning of the year the World Health Organization arranged for Dr. R. J. Pitchford to make a

rapid/

rapid survey of the present bilharzia risks. Dr. Pitchford arrived in Mafeking in March. During the eight days of his visit he was shown the majority of the sites of recorded human cases and snail vectors between Mafeking and Francistown, and spent parts of two days at Maun. Children and cattle examined at Maun by Dr. Pitchford showed no sign of infestation which fact is in accordance with previous records. Although the known frequency of *Planorbis pfeifferi* among other mollusca was again confirmed in the Maun River, no cases of *Schistosoma mansoni* have been found there. A peculiar feature during 1956, confirmed by Dr. Pitchford, was failure to find *Physopsis* types in the Notwani River at Mochudi. Records of previous workers noted that river as a regular and profuse source of *Bulinus (Physopsis) africanus*. School children at Mochudi used to be heavily infested by the worms. The Notwani River, in and near Mochudi, was dry and free from pools from June onwards and no molluscs were seen during six searches at approximately monthly intervals. *Physopsis* were found this year on the railway dam at Lobatsi, in pools between dams in the village of Palapye, in dams at Tantabane farm near Francistown, in a roadside pool near Bosoli rail siding north of Francistown and along the river banks at Maun. The Palapye stream infestation was heavy.

17. Fork-tailed *cercariae* emerging from some of the *Physopsis* taken at Palapye were observed by Dr. Pitchford. Species of *Bulinus* have been found in dams and pools along the Maun road to Francistown and beyond. Particularly of note is the rather wide distribution of *Bulinus forskalii* and its presence in some areas where cases of urinary schistosomiasis have been reported during recent years in apparent absence of *Physopsis*. Dr. Pitchford thought that it would be of value to pay especial attention to the possibility of *Bulinus forskalii* being a vector in the Bechuanaland Protectorate. Only one specimen, however, was found after the river pools dried up after March. The harmless snail *Planorbis gibsoni (Guraulus)* has been found at Seruli and at Maun. Live specimens of *Physopsis* taken from Palapye village were delivered to the Johannesburg South African Institute for Medical Research for infectivity tests. The Medical Officer of Health visited the World Health Organization Snail Identification Laboratory at Salisbury during the year and arranged to forward snails for identification and record.

18. Late in November more detailed examination of natural waters was begun in the Southern Division by a team of Africans under a European on temporary employment.

19. Human cases of urinary schistosomiasis are reported every year by various hospitals in small numbers, irregularly distributed. Special urine tests at Mochudi in 1940 yielded 63% positive and again in 1950 Mochudi African schools gave over 40% positive urines. None of these positive cases approached hospitals for treatment until urged to do so after diagnosis by the campaign.

20. Total cases seen during the last seven years in the Protectorate have been :-

1950	1951	1952	1953	1954	1955	1956
197	86	81	54	104	65	229

In 1953 and 1954, out of these totals, three cases were recorded as *S. mansoni*; in 1951, of 180 stool examinations at Maun hospital, no *S. mansoni* were found and only four *S. haematobium*, none of which were considered to derive from the Maun area.

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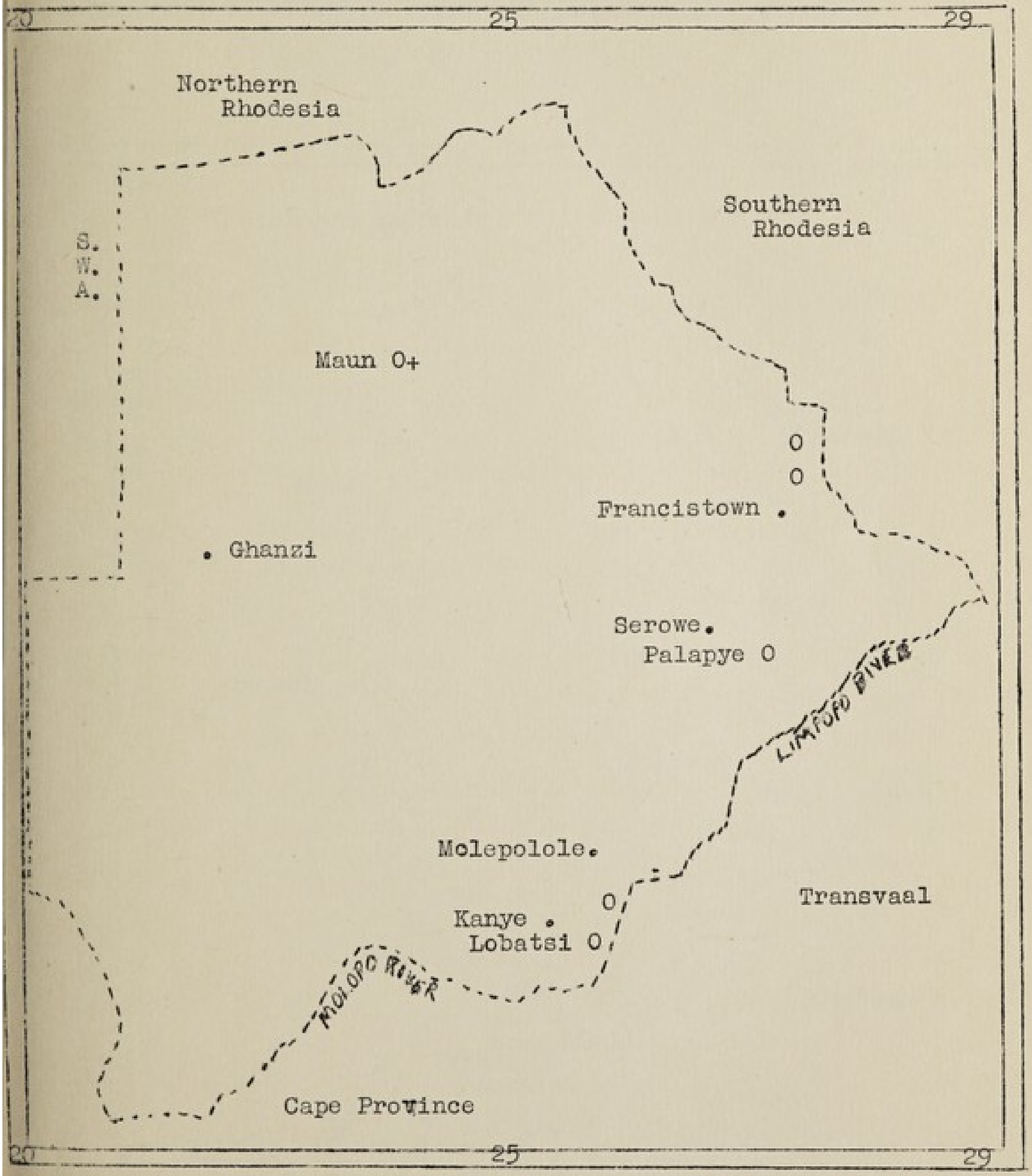
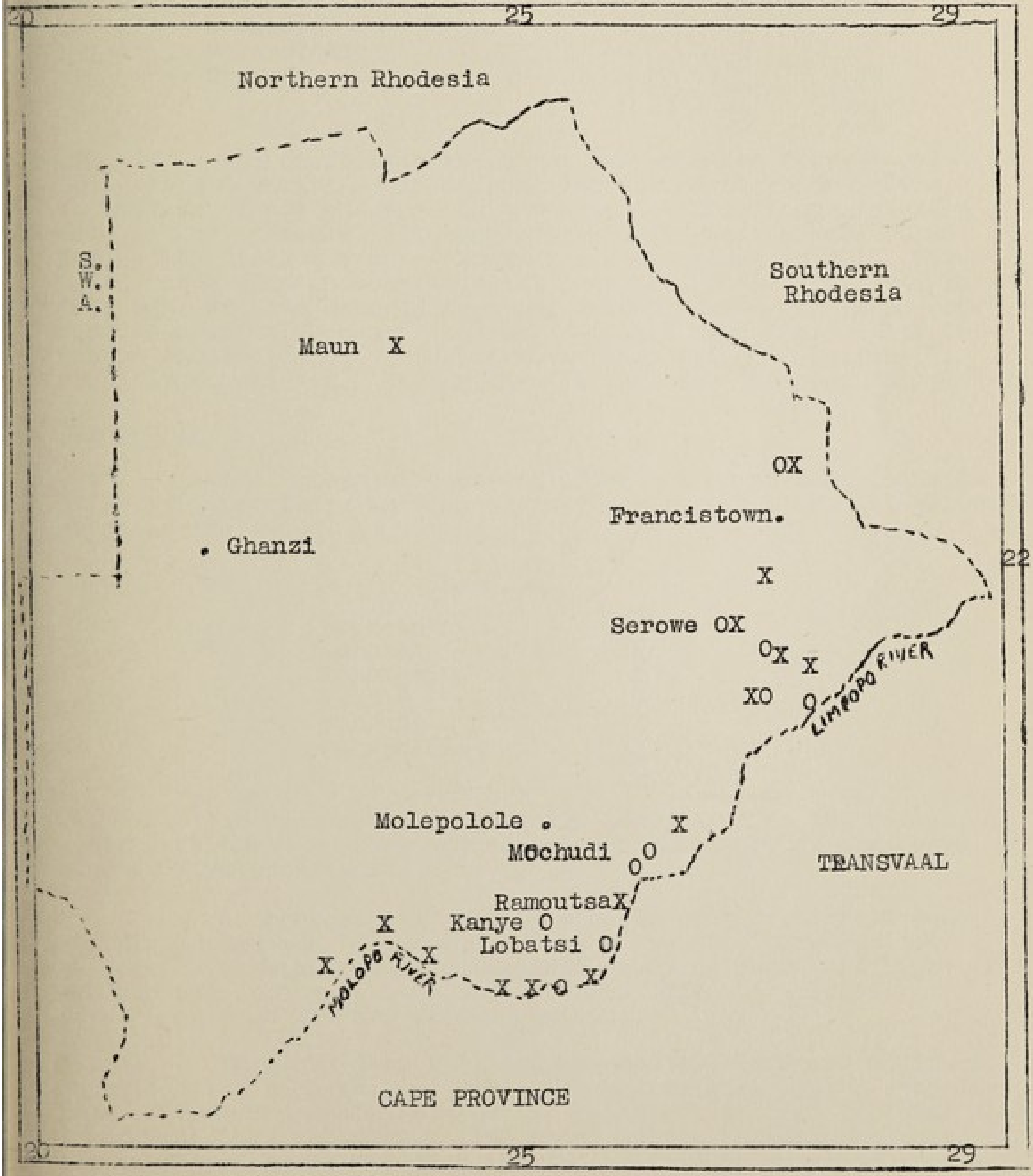
BILHARZIA CARRIER SNAIL HABITATS FOUND IN 1956



O Bulinus (Physopsis) species

\+ Biomphalaria pfeifferi

SOME HABITATS FOUND IN 1956 OF NON-CARRIER SNAILS



X Bulinus tropicus
O Bulinus forskalii

21. Distribution of cases reported by hospitals during 1955 and 1956 were :-

TABLE I

	1955	1956
Francistown	-	3
Gaberones	4	6
Kanye	-	1
Lobatsi	7	7
Mahalapye	2	4
Maun	24	2
Mochudi	21	90
Molepolole	2	18
Serowe	5	75
	65	206

22. The disability which the Bechuanaland Protectorate children and adults suffer from schistosomiasis haematobium infections is not referred to the hospitals for treatment as a rule. For instance, although 399 positive urines were found during the field survey at Mochudi schools alone in 1950, the total cases seen in hospitals all over the Protectorate was only 197, many of them derived from the Mochudi survey. Those only went to hospital because they were advised to do so. For this reason the incidence of schistomoma haematobium infections is probably considerably higher than is indicated by hospital returns.

Diphtheria

23. The number of cases notified was 33 as compared with 91 in 1955 but there were no extensive outbreaks. The distribution of cases was :-

TABLE II

Francistown	6
Lobatsi	6
Mahalapye	2
Maun	7
Mochudi	1
Molepolole	11
	33

24. As diphtheria is strictly controlled in the Union, its control in the territory was considered necessary as a measure of co-operative protection.

25. As prophylactic action against both diphtheria and whooping cough can be carried out by means of a single mixed vaccine, a combined campaign against whooping cough and diphtheria was planned during 1954 and 1955 with UNICEF and Colonial Development and Welfare Fund assistance.

26. This overseas help was matched by staff and equipment supplied from Bechuanaland Protectorate sources. UNICEF supplied part of the camp equipment and the technical stores, together with three transport vehicles. The prophylactic inoculation material was purchased by UNICEF from the South African Institute for Medical Research, Johannesburg, who manufactured this inoculum and supplied it as required by the progress of the campaign. Staff and maintenance charges, including very high transport costs, together with additional necessary stores, are shared by the C.D.F. Scheme D.2835 and current Bechuanaland Protectorate medical finance sub-heads.

MONTHLY MALARIAL CASES AT NINE BECHUANALAND PROTECTORATE STATIONS FOR 1956.

STATION	TOTAL	J I	F II	M III	A IV	M V	J VI	J VII	A VIII	S IX	O X	N XI	D XII
Southern Division:													
Lobatsi	8	3	2	-	-	-	-	-	-	1	-	-	2
Kanye	141	6	14	18	30	18	14	6	3	-	13	7	12
Gaberones	12	-	4	2	4	1	-	-	-	-	-	-	1
Molepolole	117	3	4	22	22	14	15	8	11	3	5	6	4
Mochudi	3	-	1	1	1	-	-	-	-	-	-	-	-
SOUTHERN TOTAL	281												
Northern Division:													
Mahalapye	93	-	-	1	25	22	11	17	14	1	2	-	-
Serowe	234	22	25	38	46	36	18	9	7	5	4	8	16
Francistown	422	27	40	46	82	62	33	25	28	25	23	19	12
Maun	932	158	188	164	140	80	68	42	24	17	9	13	28
NORTHERN TOTAL	1681												
PROTECTORATE TOTAL	1962.												

27. Comprehensive and vigorous assistance was received from the Southern Divisional Administration and by the chiefs in the Bakwena and Bakgatla Reserves. It required all the help available to assemble the children in adequate numbers for the two injections which are being offered to the age groups 6 to 18 years because of the very scattered distribution of the population and their itinerant habits in some districts.

Dysentery

28. One thousand, two hundred and thirty (1,260 in 1955) cases were notified, of which 838 (572) were bacillary; 52 (63) amoebic and 340 (625) unspecified. 1 (6) death only was recorded. In the absence of laboratory facilities the differential diagnosis is often difficult.

Enteric

29. The enteric group has been represented by only one case from Francistown Hospital. Considering the lack of basic sanitary effort in all African areas this is remarkable and possibly should not be associated only with a dry climate.

Leprosy

30. 35 (34 in 1955) cases were reported but many of these were long-standing cases. One case only was encountered outside Ngamiland. The Leper Institute at Botsabelo in Basutoland continues to receive the active cases diagnosed in this territory.

Malaria

31. Malaria problems in the Bechuanaland Protectorate may require increased attention following recent World Health Organization pressure for its eradication from Africa. Cases have been reported from all areas of the territory during 1956. The number of cases reported during the year approximated those reported in 1955, being 1,962 against 1,707 in the previous year. 1,753 of these cases were seen as out-patients and only 209 were admitted to hospitals. Three deaths were recorded from the in-patients. One death from blackwater fever was reported. Malignant tertian (Falciparum) accounted for the majority of cases recorded - 1,460 with two deaths. Benign tertian (Vivax) claimed 333 cases with one death and 169 were recorded as unspecified. No cases of quartan (Malariae malariae) were noted. The lack of local laboratory facilities and the large number of out-patients seen at district dispensaries makes accurate diagnosis of malaria difficult.

32. In 1956 Francistown and Maun headed the number of cases recorded; Lobatsi and Mochudi showed the lowest incidence.

33. The migratory habits and wide distribution of a small population during planting seasons favours the continuity of seasonal malaria in the south. For instance, at Molepolole the stream below the village dam contained water throughout the year from local seepage. Some anopheles larvae were taken from this water on several occasions. That breeding ground served as a reservoir during the dry season in conjunction with huts and some poorer type houses situated in the vicinity. The majority of the seasonal increase of cases recorded by the Molepolole Mission Hospital appears to come from the outlying villages of Letleking and Lepephe and from other agricultural areas. The farming lands become more heavily occupied by the Bakwena families when rain facilitates agricultural functions. Good rains convert these agricultural lands from dry, hard soils to pool-sprinkled flats and seepage-sided streams. During several months of the first and second quarters of the year there will be ample suitable water

surfaces/

BECHUANALAND PROTECTORATE - RAINFALL, 1956 (MILLIMETRES)

	JAN.	FEBR.	MAR.	APL.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL	LATITUDE SOUTH		LONGITUDE EAST	
														D	M	D	M
GHANZI	5.80	127.10	39.40	11.50	4.80	-	-	-	3.50	7.10	35.40	44.20	278.80	21	41	21	37
MAUN	54.00	145.20	53.30	25.70	2.80	-	-	-	11.60	4.40	42.40	64.00	403.40	20	-	23	30
KASANE	70.50	126.00	143.00	39.50	-	-	-	-	-	5.00	76.50	94.50	555.00	17	51	25	13
FRANCISTOWN	40.00	89.90	31.10	23.70	5.50	-	-	-	-	14.30	36.90	120.70	362.10	21	13	27	28
SEROWE	55.00	148.00	157.80	4.00	8.50	-	-	-	4.70	27.20	48.00	136.00	589.20	22	23	26	44
MOCHUDI	52.00	158.50	64.70	-	346.00	35.00	-	-	12.90	16.00	40.00	146.50	871.60	24	23	26	7
GABERONES	60.50	219.90	12.10	1.10	34.10	-	-	-	10.50	62.00	75.10	74.40	549.70	24	40	25	54
MOLEPOLOLE	111.00	187.50	49.50	-	110.00	-	-	-	6.50	38.00	39.20	85.50	627.20	24	28	25	32
KANYE	31.00	243.10	47.50	-	51.50	-	-	-	6.00	64.00	34.60	91.50	569.20	24	59	25	22
LOBATSI	27.00	212.00	35.00	1.00	56.00	-	-	-	12.00	72.00	38.00	73.00	526.00	25	15	25	38
TSHABONG	21.50	132.30	93.80	5.50	-	-	-	-	-	1.30	3.50	5.00	262.90	26	6	22	23

BECHUANALAND PROTECTORATE

MEAN MONTHLY TEMPERATURES, 1956

		January	February	March	April	May	June	July	August	September	October	November	December
GHANZI	max	32.70	30.00	29.30	29.00	27.60	24.50	24.60	27.40	29.40	34.70	31.50	32.30
	min	17.30	17.90	16.80	12.50	7.90	4.70	5.40	5.50	11.50	13.60	15.80	16.60
MAUN	max	30.80	29.90	30.50	29.20	27.70	25.50	26.10	30.10	31.00	36.00	32.00	32.50
	min	18.00	18.80	18.20	14.50	9.50	5.70	7.70	6.90	12.90	19.00	17.40	18.10
KASANE	max	30.00	30.50	29.60	29.40	28.44	26.26	26.80	30.70	32.70	36.70	31.00	30.30
	min	18.80	15.80	18.80	16.50	11.37	9.22	10.60	12.70	13.50	13.60	14.90	18.60
FRANCISTOWN	max	28.60	26.20	29.90	27.90	27.20	24.50	24.30	28.20	27.90	32.40	30.60	31.20
	min	13.20	16.30	12.10	12.50	7.51	4.25	5.00	3.37	-	18.80	16.90	17.40
SEROWE	max	27.50	26.70	26.50	25.90	24.22	22.16	25.60	26.50	25.60	31.10	27.90	29.10
	min	14.70	17.00	16.30	13.20	11.31	10.84	11.80	14.40	15.80	19.90	20.30	20.50
MOCHUDI	max	30.10	29.30	29.30	28.70	24.60	23.30	23.50	27.10	27.60	33.10	31.30	29.70
	min	17.20	18.60	17.30	12.50	8.60	4.10	5.10	6.00	10.10	16.00	16.70	18.00
GABERONES	max	34.30	29.70	30.10	28.80	26.00	19.17	23.40	27.40	27.70	33.60	30.70	31.20
	min	16.10	17.70	16.10	9.80	7.43	1.60	3100	3.50	12.40	15.00	14.10	17.10
MOLEPOLOLE	max	31.30	29.20	28.90	28.30	25.30	22.80	23.30	26.40	23.20	32.40	30.80	31.50
	min	15.10	16.40	15.20	11.20	7.10	2.10	2.90	4.80	9.70	16.00	14.70	17.20
KANYE	max	28.30	28.30	20.90	22.10	20.49	20.94	20.00	19.70	22.30	28.80	26.20	27.20
	min	15.60	15.60	16.10	11.20	9.67	7.50	7.20	8.40	9.30	13.40	12.50	14.30
LOBATSI	max	29.10	27.90	26.70	26.40	22.47	20.60	21.40	24.30	25.40	30.70	27.80	28.70
	min	14.90	16.60	15.30	9.40	6.33	1.53	2.10	2.60	7.30	13.80	15.60	14.90
TSHABONG	max	34.20	31.20	29.40	29.60	24.40	22.40	22.70	25.30	27.70	32.80	31.20	33.20
	min	18.10	14.80	16.70	10.90	5.40	2.60	2.50	2.20	5.60	11.60	14.70	16.00
MEAN	max	30.60	29.00	28.30	27.70	25.30	22.90	22.90	26.64	27.30	32.90	30.10	30.60
	min	16.30	16.90	16.30	12.20	8.30	4.90	5.80	6.40	8.90	14.60	14.90	16.20

The Bechuanaland Protectorate lies roughly between 2,000 feet and 5,000 feet above sea level and only a few people live at the cooler altit altitudes from 4,000 to 5,000 feet. The portion of the country inhabited by the greatest number of both Europeans and Natives is adjacent to the only railway line which passes through the eastern side of the Territory for a distance of 403 miles where the average altitude is 3,418 feet.

surfaces to propagate anopheles and the local population can supply the gametocytes which will be carried over from the previous year through the period of drought. There is sufficient movement by ox-cart and by motor vehicles between Molepolole and the wide cultivated lands which surround it to account for the maintenance of anopheles in these seasonally wet areas. The incidence of malaria in the wet season at the Bakwena and Bakgatla agricultural lands must be much higher than the relatively distant hospital can record.

34. In the southern division of the Protectorate the lower average temperatures and apparently lower infection rate suggest that rural control measures would be more rewarding in results than an equivalent effort and expense could attain in the north-eastern areas. The north western Ngamiland area is the most favourable to the maintenance of malaria and would be more difficult to control.

35. The malaria incidence in the south and east of the Protectorate was controlled to a large extent by the temperatures and rainfall of the latter half of 1955 - see the tables of rainfall and temperatures. The annually recurring drought approximating to the four months June to September inclusive, coincides with the period of lowest temperatures, and in the period June 1955 to September 1956 these factors appear to have been important in reducing the incidence of malaria during 1956. The swamp and river districts of the north-west are not so dependent on the local rainfall for maintenance of humidity and mosquito breeding places.

36. The lower incidence of malaria in the south and south-west areas contiguous to the Union is gratifying. The figures of diseases rendered by hospitals in those African reserves of larger area are not likely to reflect the actual disease incidence. This especially likely to be so in connection with more acute maladies among which malaria in this area is to be found.

37. True figures are unlikely to be obtained owing to distances and the poor roads from the chief's village, where the reporting hospital is usually situated, and the "lands" and cattle posts to which the families move for seedtime and harvest. During a somewhat irregular period between September and December a family may unite in the chief's village to rest and sell its produce and to be present during the social season of the tribe. This period is after the malaria season is over in most places and so the hospital returns do not show that rise in malaria cases which might be expected from the greater numbers of people who are staying in the village during the last three or four months of the year. Field surveys alone will show actual incidence.

Malnutrition and Deficiency States

38. The number of cases recorded was 2,604 (1,125 in 1955); of these 68 (53) were diagnosed as beri-beri; 185 (579) as pellagra; 315 (382) as scurvy and 2,046 (1,245) as other deficiency states. Of the total of 2,604 cases, 612 were diagnosed in the Mahalapye area and 540 at Francistown.

39. Dr. B. T. Squires attended the Third C.C.T.A. Nutrition Conference at Luanda, Angola as one of the United Kingdom delegates, in September.

Plague

40. No case of plague was recorded, nor any cases in the territories near the Bechuanaland Protectorate borders.

41. Rodent control in the Ngamiland, Chobe and Kalahari areas was, in consideration of the recent absence of both human and rodent infections, continued on a reduced scale compared with previous years. In April one of the two Rodent Officers was

surfaces to propagate anopheles and the local population can carry the anopheles which will be carried over from the previous season through the period of drought. There is sufficient movement by ox-cart and by motor vehicles between [illegible] and the more cultivated lands which surround it to account for the maintenance of anopheles in these seasonally wet areas. The incidence of malaria in the wet season of the extreme north-east agricultural lands must be much higher than the relatively limited hospital and [illegible].

24. In the southern division of the Protectorate the lower average temperatures and apparently lower infection rate suggest that rural control measures would be more rewarding in results than an equivalent effort and expense would obtain in the north-eastern areas. The north-western Ngamiland area is the most favourable to the maintenance of malaria and would be more difficult to control.

25. The malaria incidence in the south and east of the Protectorate was controlled to a large extent by the temperature and rainfall of the latter half of 1955 - see the tables of rainfall and temperatures. The annually recurring drought approximating to the four months June to September inclusive, coincides with the period of lowest temperatures, and in the period June 1955 to September 1956 these factors appear to have been important in reducing the incidence of malaria during 1956. The swamp and river districts of the north-west are not so dependent on the local rainfall for maintenance of humidity and mosquito breeding places.

26. The lower incidence of malaria in the south and south-west areas continues to the [illegible] qualifying. The figures of diagnoses rendered by hospitals in those African Reserves of larger area are not likely to reflect the actual disease incidence. This especially likely to be so in connection with more acute [illegible] among which malaria in this area is to be found.

27. True figures are unlikely to be obtained owing to distances and the poor roads from the chief's village, where the reporting hospital is usually situated, and the "lands" and cattle posts to which the families move for ploughing and harvest. During a somewhat irregular period between September and December a family may move to the chief's village to rest and sell its produce and to be present during the social season of the tribe. This period is after the malaria season is over in most places and so the hospital returns do not show that rise in malaria cases which might be expected from the greater numbers of people who are staying in the villages during the last three or four months of the year, [illegible] correlations with the actual incidence.

Malnutrition and Deficiency Diseases

28. The number of cases recorded was 2,606 (1,107 in 1955); of these 68 (2%) were diagnosed as kwashi-orkor; 180 (7%) as pellagra; 218 (8%) as scurvy and 2,068 (79%) as other deficiency states. Of the total of 2,606 cases, 671 were diagnosed in the Ngamiland area and 590 at [illegible].

29. Dr. R. W. [illegible] attended the Third C.C.T.A. Nutrition Conference at Luanda, Angola as one of the United Kingdom delegation in September.

Plague

30. No case of plague was recorded, nor [illegible] cases in the territories near the Bechuanaland Protectorate borders.

31. Rodent control in the Ngamiland, Ghanzi and Kalahari areas was, in consideration of the recent threats of both human and rodent infections, continued on a reduced scale [illegible] permanent patrols. In April one of the two [illegible] and

withdrawn with his team from Maun to survey the northern area of the eastern part of the territory. More rapid means of communication and the dense population of the eastern region might facilitate the spread of the disease should a focus of infection appear.

42. Random spot surveys in Francistown and in the Tati Concession around the villages along the Southern Rhodesian border and subsequently at Mahalapye, Palapye, Mochudi, Molepolole and Gaberones showed rodent activity, but no infected fleas nor any unusual rodent deaths.

43. Plague control equipment was improved by the issue of new cyanogas pumps, the construction of strong sub-divided storage boxes for lorry transport, the use of new instruments and equipment for dealing with rodent and flea specimens and by the provision of new traps and other items.

44. A Health Inspector and one Rodent Officer were given one month's tuition in rodent control work and in methods of dealing with specimens in relation to scientific reports. The Ecologist of the Plague Research Laboratory, Johannesburg took much trouble in providing instruction, both in the laboratory and in the field. The field work which they attended was particularly useful because the area visited in the Union had recently yielded a plague-infested flea, necessitating a major investigation under the threat of a possible outbreak.

45. Routine inspections of North, Central and South Ngamiland, the Chobe and Kalahari areas were carried out by the rodent control team from Maun and rodent destruction was undertaken where necessary. Flea destruction was continued in huts and specimens of fleas were sent to the South African Institute for Medical Research to be tested for presence of P. Pestis.

46. In March two cases of human plague were notified by the Union Health Department from Bothaville, Orange Free State. Thereafter our plague survey was intensified within the Eastern and Southern parts of the Protectorate with satisfactory negative results.

47. In August a report from a trader of marked rodent activity near Sefhophe was found to be a fact on investigation.

48. Rodents in great numbers were found between Maun and Shakawe, being particularly bad at Sepopa. Trapping, poison and gassing soon reduced the rodent population. "Bexacot" dusting and D.D.T. spray dealt with the huts against flea infestation, notably at Sepopa. Eighty fleas taken during this period of activity were all reported negative to <u>P. pestis</u> by the South African Institute for Medical Research. Similar negative findings were noted by the South African Institute for Medical Research for fleas and rodents taken by the other team which was touring the eastern and southern areas.

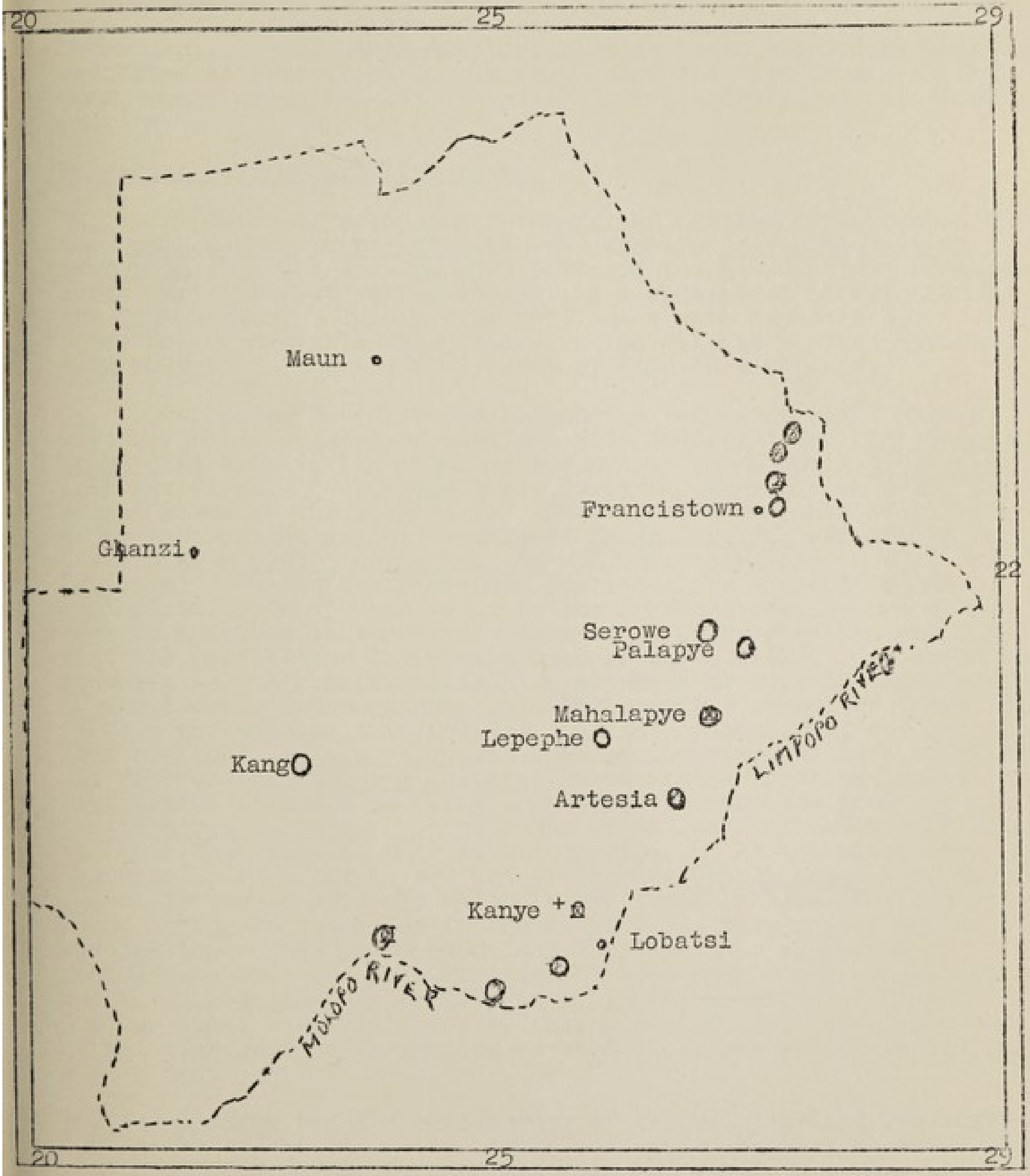
<u>Poliomyelitis</u>

49. The first issue of vaccine from the Poliomyelitis Research Laboratory of the South African Institute for Medical Research, Johannesburg was distributed to Medical Officers in the Protectorate during September in proportion to the lists of requirements submitted by them. At the end of the year 417 first doses had been administered. No second doses had been given owing to the temporarily restricted supply situation.

50. Two (0) cases only of Poliomyelitis were reported, both persons living on the border just within the Protectorate. No other hospital notified this disease. This low case incidence is in contrast with the notification by the Federation of Rhodesia

and /

1956 ORNITHODORUS MOUBATA SURVEY



⊗ Searched but none found in huts.

O O. moubata found in huts: not infected.

\+ At Kanye one batch of O.moubata infected with Borrelia duttoni

Survey started by Dr. Zumpt of the South African Institute for Medical Research and continued by the Protectorate's Medical Department, but all specimens identified by Dr. Zumpt in Johannesburg.

and Nyasaland where 77 cases were reported up to December, 1956, and is low in comparison with the Union of South Africa.

Rabies

51. One (0) confirmed case, which proved fatal, was reported during the year. The presence of the disease has, however, been verified in animals taken for examination by the Veterinary Department. The human case occurred at Kanye but others were suspected at several places in the Serowe and Palapye areas. All human cases of animal bite seen were given a course of anti-rabies vaccine.

Relapsing Fever (spirillum fever)

52. Cases of relapsing fever of the African type, caused by the *Spirochaeta recurrentis* (Lebert) synonym *Spironema duttoni* have been reported from various parts of the Bechuanaland Protectorate during recent years, suggesting a widespread infestation by the tick vendor. Twenty nine (61) cases were reported by Government and Mission hospitals. The disease may be confused with malaria in absence of laboratory aids to diagnosis.

53. During November and December a temporary Field Survey Officer, while engaged on public health duties, found *Ornithodorus moubata* at Kang in the Kalahari but not at Werda where *O. savigny* only was found. *O. moubata* was found at other places along the Molopo River in the territory. It is considered that local records of previous finds may have confused *Argus persicus* and *Ornithodorus* savigny with *Ornithodorus moubata* and may, therefore, not be reliable. Dr. Zumpt from the South African Institute for Medical Research, Johannesburg, during his visit to the Protectorate, made more careful searches in the border area north of Francistown and found that the habitations there were free of these ticks. He noted the cleanliness and exceptionally high standard of life of the Africans around Tsessebe, Ramaquabane and Bosoli siding as one of the possible factors influencing this freedom from infestation, but on the other hand he found *Argus persicus* in some of the Tsessebe huts which were all free of *Ornithodorus moubata*, which finding made him doubt the high living standard as being the reason for freedom from *Ornithodorus moubata*. Dr. Zumpt noted the difficulty of finding the spirillum tick in huts in the daytime. At one place the superficial check of an old hut yielded no *Ornithodorus* but, when the walls were completely pulled down, large numbers of ticks were found hiding in the holes in the walls. This factor may be of special importance in Bechuanaland where so many occupiers of fenced compounds do not pull down old huts when a new one has been built. Possibly the ticks resting in the dilapidated huts prolong their survival there by biting fowls, and thus give a period of relative rest to the humans on whom they grew while the old hut was in use.

54. Along the southern border of the Bechuanaland Protectorate the leader of the field collecting team noted an absence of *Ornithodorus* from the huts of the coloured people who make up a large proportion of the population there, whereas several collections of *Ornithodorus* ticks were made in African huts and from shady sandy dryish earth under trees near the haunts of domestic animals.

Respiratory Diseases

55. The number of cases recorded was 18,349 (14,268); of these 2,090 (2,030) were diagnosed as pneumonias, of which 545 were lobar pneumonia, 947 broncho-pneumonia and 598 atypical and unspecified forms. The total number of deaths in the case of these disorders treated in hospitals was 41 or 2%. Cases diagnosed as influenza numbered 1,933 (1,599).

Smallpox /

56.

Smallpox

56. As in 1955 no cases were recorded in the territory; records over the last few years suggest that the persistence of vaccinators is now being rewarded by limiting the effect of infectious cases coming in over the borders. Vaccination was maintained at a good level of community protection, both by the district and central hospital action.

Trypanosomiasis

57. Ten (4) cases of human trypanosomiasis were reported from the north-western portion of the Protectorate infected in the tsetse-infested bushlands which lie mainly in Ngamiland. One of the cases was from Sehitwa which has not hitherto been recognised as a fly area. Cattle are more seriously affected by the fly than man in that area. The main block of tsetse infested bush consists of an isolated rhomboidal patch of lands situated between 20° 18° and 45' S and between 22° 24° and 35' E, with a small projecting tongue pointing a quarter of a degree further east outside the African reserve into crown lands. The cases were all associated with this block of bushland wherein the range of distribution of the vector flies fluctuates only slightly from year to year. A slow advance of the tsetse fly in that area during recent years is being met by organised tsetse control schemes applying current practice. This work is mainly funded by Colonial Devdlopment and Welfare grants matched by Protectorate provisions through Veterinary and Medical Department resources.

58. A small portion of one of the Northern Rhodesian pockets of tsetse bush extends over the Bechuanaland Protectorate's northern border around the Chobe River. This pocket lies mainly in the Batawana Reserve of Ngamiland with a narrow projection eastward into the Crown lands of the Chobe district along the northern border.

59. A World Health Organization adviser on tsetse control, Dr. E. A. Lewis, flew from England to repeat his inspection of the territory's tsetse and trypanosomiasis scheme of control. Later he held discussions at the Secretariat in Mafeking, which were attended by senior administrators, also by Veterinary and Medical staff and by the Tsetse Control Officer. In September the Medical Officer of Health attended, as one of the three Protectorate observers, at the International Scientific Committee on Tsetse and Trypanosomiasis Research in Salisbury, Southern Rhodesia.

60. The sleeping sickness threat in the Protectorate appears to be limited to that semi-tropical and generally moister part of the territory which supports the typical double canopy shade casting bushlands, somewhat similar to the other Glossina morsitans infested areas further north in Africa. The Ngamiland pocket is situated in semi-desert type surrounds unlikely to shelter tsetse flies.

Tuberculosis

61. Tuberculosis received increased attention this year as part of a long-term plan of control. A World Health Organization Tuberculosis Assessment Team, led by Dr. E. Kjolbye, spent several months in the Protectorate, collecting specimens of sputum and acquiring clinical data from remote and from more accessible centres. A random survey plan which had been worked out beforehand was followed. Special air freight cold packing equipment enabled the team to receive B.C.G. and to return specimens to their central laboratory in Europe with speed and without loss of virulence. This was facilitated by efficient co-operation of a firm of travel agents at the Johannesburg airport. By the kind help of the customs officials the airport agents were permitted to replenish the cooling ice during transit delays.

62./

62. Increased accommodation was completed during 1956 for Tuberculosis in-patients at Francistown hospital. Development plans envisage further extensions for the early future, for there continued to be more cases than available accommodation.

63. The number of cases diagnosed in 1956 was 1,673 (2,079), of which respiratory tuberculosis accounted for 1,098 (1,466), tuberculosis of bones and joints 94 (122), intestinal tuberculosis 83 (85) and tuberculosis of the central nervous system 11 (29), with other forms 387 (377).

Venereal Diseases

64. The total number of cases recorded was 13,979 (13,499) of which 13,972 were due to syphilis and gonorrhoea. The remaining seven included 2 (41) cases of lymphogranuloma venereum, one (2) case of granuloma inguinale and four (10) cases of unspecified venereal disease.

Whooping Cough

65. Whooping Cough prophylactic was used, combined with the diphtheria inoculations to the age groups of children 0 - 5 years; this entailed three injections. It has proved extremely difficult to persuade mothers to bring their babies for the second and more so for the third injection, but the intensity of interest shown by the district administration provided every encouragement to persevere with this effort from September when the campaign began to the end of the year.

66. It is certain, however, that the project of inoculating the entire 120,000 estimated child population of the Protectorate must either take considerably longer than the two years of the original estimate or that more teams will be required in the field, moving more slowly than hitherto. The distribution of whooping cough has been widespread and of relatively high incidence for a number of years in this territory.

67. Figures shown in the accompanying table are not high compared with more densely populated territories but they represent a notable proportion of the notified diseases from hospital centres :-

TABLE III

Francistown	283
Gaberones	158
Kanye	237
Lobatsi	35
Mahalapye	21
Maun	77
Mochudi	100
Molepolole	403
Serowe	39
Various small Mission Dispensaries	319
Total:	1,672

Miscellaneous Infectious and Contagious Diseases

68. The recorded incidence of these diseases was as follows :-

Measles	820	(952 in 1955)
Cerebro-spinal meningitis	8	(21 in 1955)
Scarlet Fever	1	(7 in 1955)
Chicken Pox	181	(182 in 1955)

MEAT INSPECTION /

MEAT INSPECTION

69. Meat inspection and slaughter control can be exercised at present only in the larger villages, four in number and widely separated.

70. Meat inspection at the Export Abattoir of the Colonial Development Corporation, situated in the village of Lobatsi and at the Lobatsi village abattoir where the kill is for local consumption, is undertaken by specialists on the staff of the Director of Veterinary Services. Discussions have been held with the object of passing all meat inspection over to the Veterinary staffs whose interest, training and local facilities enable them to carry out this work more efficiently, especially in the smaller villages.

71. The abattoirs at Francistown and at Lobatsi are Government owned and maintained. The other villages do not yet possess central slaughter places; each licensed butcher in them kills at his own slaughter pole. This factor complicates the functions of meat inspection and is to be eliminated by provision of central slaughter houses when funds and staff permit.

72. The following table gives data on cattle condemnation of whole carcases or portions thereof at Serowe, Lobatsi and Francistown (excluding Export Abattoir, Lobatsi) during 1956. It indicates the high proportion of detentions and condemnations due to Cysticercus bovis :-

TABLE IV

Cysticercus bovis	115
Peritonitis	3
Septicaemia	1
Lymphadenitis	2
Pleurisy	5
Pneumonia	89
Mastitis	50
Sarcocystosis	10
Nephritis	10
Pericarditis	8
Pimply Gut	7
Necrosis	1
Bruising	5
Abscess	34
Echinococcus	155
Cirrhosis	7
Inflammation	38
Haemangioma	7
Actinomycosis	3
Tumours	1
Total:	551

73. Cestode infestation by Taenia saginata is reported in slaughter cattle more than through hospital records of human cases of tapeworm.

Housing and Town Planning

74. Medical headquarters examines all plans of new buildings in co-operation with the Architect on the staff of the Director of Public Works. District Commissioners all over the territory forward plans and data for this work and receive advice in return from Mafeking.

75. The new Welfare Clinic at Gaberones was completed and brought into use. Prefabricated houses have been erected for senior Government staff at all stations.

76. The new wing was completed for tuberculosis cases at Francistown hospital and is in full use. New stores and offices were also provided at headquarters.

77. New layouts have been studied for several future medical centres.

SECTION III - VITAL STATISTICS

78. The figures for the census taken in 1956 are not yet available for Africans; Europeans, Asiatic and Coloured are given below :-

TABLE V

Europeans	3,174
Africans	292,755 +
Asiatics	248
Coloured	676
Total population:	296,853

+ 1946 Census.

This total gives a population density of just over 1 per square mile. There is no compulsory registration of African births and deaths.

European Births and Deaths

TABLE VI

European births	75
Births per 1,000	30
European deaths over 1 year of age	18
Deaths per 1,000	7
Deaths under 1 year of age	2

Causes of European Deaths

TABLE VII

Road Accident	1
Coronary Thrombosis	5
Gastric Enteritis	2
Diphtheria	1
Fractured Skull	1
Myocarditis	1
Senility and Cardiac Failure	1
Cardiac Failure	1
Pneumonia	1
Cancer	1
Diabetic Coma	1
Old Age	1
Blackwater Fever	1

Illness of Officials

79. Causes of sickness amongst Senior Service and Junior Service officers who were off duty for more than 14 days are given in Table VIII.

80. The number of Europeans in Government employ is 440

and Africans 1,420.

TABLE VIII

Senior Service

Amoebiasis	4
Appendicitis	4
Bronchitis	1
Fracture	1
Haemorrhoids	1
Gastritis	1
Gastro-Enteritis	1
Injuries	2
Derangement of knee	3
Pneumonia	2
Tick Bite Fever	2
Trypanosomiasis	1
	23

Junior Service

Appendicitis	4
Bilharziasis	1
Dysentery	2
Erysipelas	1
Gastric Ulcer	1
Haematuria	1
Hepatitis	1
Hypertension	1
Influenza	1
Injuries	5
Jaundice	1
Liver Abscess	1
Measles	2
Meningitis	1
Mumps	1
Neurasthenia	1
Perforated ear drum	1
Pleurisy	1
Pneumonia	6
	34

There were two African deaths.

SECTION IV - MATERNITY AND CHILD WELFARE

81. There were 2,389 (1,775) normal confinements recorded at the various hospitals. A further 315 (251) cases were admitted for complications, not including abortions or miscarriages.

82. The increase in the number of African women seeking hospital accommodation for normal confinements is encouraging in that they make use of the hospitals, but is indicative of the need for a domiciliary midwifery service in order that hospital beds may be available for complicated cases.

83. One hundred and seventytwo (146) cases of abortions and miscarriages were treated in hospital.

Ante and Post-Natal Attendances

84. Ante-natal attendances numbered 22,607 (13,952) and post-natal 1,876 (631). Attendances at child welfare clinics numbered 1,555.

85. Towards the end of the year a doubly-registered African staff nurse was posted at Pilikwe to inaugurate maternity and child welfare services; stores are supplied from Serowe hospital.

SECTION V - HOSPITALS AND DISPENSARIES

TABLE IX

Out-Patients:

First attendances	138,857	(116,442 in 1955)
Subsequent attendances	358,893	(329,247) ")
Total:	497,750	(445,689 in 1955)

In-Patients:

86. The number of admissions was 12,430 (10,146) which, with the addition of 383 (352) remaining in hospital at the end of the year, gave a total of 12,813 (10,498), an increase of 315 (362) compared with the figures for 1955.

87, At the end of 1956 the number of beds available in Protectorate hospitals, both Government and Missionary, was 631 (583); of these there were 29 beds for Europeans, 518 for Africans and 86 cots. The ratio of hospital beds to total population is approximately 1 bed per 500 population. The increase in the number of African beds is due to the opening of the new tuberculosis shelters and of Gaberones Health Centre.

88. The distribution of beds, patients etc. is given in Table X.

TABLE X

	Beds		Cots	Patients		Operations	
	European	African		Admissions	Deaths	Major	Minor
Francistown	5	67	14	2,601	77	52	764
Gaberones	-	8	1	34	1	-	276
Kanye (Seventh Day Adventist)	2	64	6	1,430	28	138	325
Kanye (Moffat Hospital, United Free Church)	1	26	6	629	7	51	107
Kgale (Roman Catholic Mission)	-	5	-	14	-	-	-
Lobatsi (including Mental Home)	11	117	6	1,503	27	284	166
Mahalapye	-	13	1	381	3	-	387
Maun	5	34	4	714	18	32	161
Maun Maternity Centre (London Mission Society	-	12	10	121	2	-	-
Mochudi (Dutch Reformed Church	-	31	6	495	15	20	108
Molepolole (United Free Church)	-	49	-	1,027	6	55	176
Ramoutsa (Hermannsburg Mission)	-	13	-	236	-	-	-
Serowe	5	79	32	3,245	82	254	173
Total:	29	518	86	12,430	266	886	2,643

Dispensaries /

Dispensaries

89. There are Government dispensaries at the following centres :-

Dikgatlong
Gabane
Gaberones
Ghanzi
Good Hope
Kalamare
Kalkfontein
Kasane
Machaneng
Mahalapye
Moeng
Mokane
Nokaneng
Palapye
Rakops
Ramoutsa
Sefhare
Sehitwa
Shakawe
Shoshong
Tsau.

90. The following centres were visited regularly by Mission doctors :-

Digawana
Ga-Thamaga
Kakia
Letlakeng
Magweraapitse
Molapojan
Mmathete
Mmankodi
Moshupa
Nogomane
Moshaneng
Ntswelatsu
Pitsani-Molopo
Ranaka
Tshane
Tshidilamolomo

91. The dispensary at Ghanzi completed the first year's work at the end of 1956. Total first attendances were 920, with 1,163 subsequent attendances. Much maternity and district work has been carried out by the sister-in-charge who visits out-stations as well. During the year the Ghanzi ambulance travelled 5,800 miles in the district. One of the medical officers at Maun visits Ghanzi monthly. There is no doubt that the appointment of a district nursing sister at Ghanzi helps to fulfil a long-felt want.

92. The dispensaries at Kalkfontein, Shakawe, Tsau and Rakops are staffed by resident African dispensers.

93. Kalkfontein was visited twice during the year by the medical officer, Maun. On both occasions a visit was paid to Nojane and patients seen at villages on the way. When a medical officer is appointed to Ghanzi it is hoped to expand the medical work in this area.

94. Shakawe was visited weekly by the medical officer, Maun, who travels in the W.N.L.A. plane. On a number of occasions patients have been brought to Maun hospital by this plane, for which courtesy this department is deeply appreciative.

95. Visits to Nokaneng were made by the dispenser at Tsau: one week a month is spent there.

96. Rakops is visited monthly by the medical officer, Maun, when possible. There is, however, no regular transport between the two places.

97. A dispenser was appointed to Kasane in May. The medical officer, Maun paid five visits during the year. The dispenser also visited Panda-ma-Tenka and Kachikau areas at irregular intervals; lack of regular transport prevents regular attendance.

98. The Kalahari area was visited six times during the year by one of the medical missionaries from the Seventh Day Adventist Mission, Kanye. Each visit lasted 2 - 3 weeks and clinics were held at Kakia and Kukong in the Bankwaketse Reserve and at Tshane in the Crown lands. It is hoped to extend these services in 1957.

99. Regular visits were made to Digawana, Mmathethe and Pitsani-Molopo areas by the Medical Superintendent in charge of

the Moffat /

the Moffat Hospital, Kanye.

100. The medical officer, Mahalapye made regular visits to Shoshong, Dikgatlong, Kalamare and Sefhare during the year.

101. The medical officer, Gaberones started a weekly clinic at Kumakwane towards the end of the year.

102. The Superintending Missionary of the Scottish Livingstone Hospital, Molepolole held regular dispensaries at Ga-Thamaga, Mmankodi, Letlakeng, Ntsweletau and occasional ones at Lephephe and Tsetseng.

Nursing Examinations

TABLE XI

Nursing Examination Results

	Number of Candidates	Number Passed	Number Failed
First Year General Medical and Surgical Nursing	17	12	5
Second year do	19	9	10
Third year do	15	10	5
Final Midwifery	9	8	1

There were in all five passes with merit.

General

103. The number of operations performed was 866 (648 in 1955) major and 2,643 (2,341) minor. 3,520 (2,753) x-ray examinations were conducted.

Medical Examination on First Appointment

104. 289 examinations were made and in each instance an x-ray report was submitted as well.

SECTION VI - GENERAL

African Labour Recruitment

105. During 1956 67,147 (58,234) recruits and repatriates passed through the various depots. Of these 47,972 (40,510) were transported from and to Shakawe, Nyasaland and Barotseland. Of these 46,652 (39,358) were moved by air transport, the total number of miles flown being 1,476,001 (1,429,884) without accident.

106. The number of recruits examined at other centres is given in Table XII below:-

Table XII /

TABLE XII

Station	Number of Recruits Examined	Number of Rejects
Francistown	1,462	230
Gaberones	1,524	66
Kanye	1,828	42
Lobatsi	2,900	72
Mahalapye	1,468	56
Maun	647	22
Mochudi	333	4
Molepolole	3,042	137
Ramathlabama	450	-
Serowe and Palapye	3,618	158
Shakawe	2,355	38
	19,627 (18,550)	825 (669)

107. Rejected candidates constituted 4.3% of the total. The chief causes of rejection were poor physique, under-age and chronic chest affections.

Prisons

108. Regular weekly gaol inspections are held whenever a Government medical officer or medical missionary is available. A sick parade is held at the same time but prisoners may also report for medical attention at all other times in case of need.

109. Rations were provided according to the diet prescribed in 1952; no complaints were received. In general, the health of the prisoner population was good.

110. Lobatsi is still the only prison where water-borne sanitation is provided; the rest use the bucket system. The only case of notifiable disease reported were three cases of pulmonary tuberculosis diagnosed and these patients were removed to hospital. Two deathsnwere reported.

Mental Home

111. The Lobatsi Mental Home, which accommodates 24 patients, remained full throughout the year. During the year 4 patients were admitted, 2 were transferred to Ingutsheni Mental Hospital, Southern Rhodesia and there was one death due to senility.

112. The general health of the inmates was good. Facilities for out-door occupations, mainly gardening, were available throughout the year.

World Health Organization and UNICEF

113. Four representatives of World Health Organization visited the territory during 1956nand the Director of Medical Services attended the Sixth Session of the Regional Committee for Africa of World Health Organization at Luanda in September.

114. Schemes in progress and contemplated at the end of the year were the following :-

(a) Extra-Venereal Treponematosis, World Health Organization Scheme Bechuanaland 1.

Mass treatment with penicillin continued in the field during the whole year. As a medical officer from World Health Organization was not available to succeed Dr. A. M. Merriweather on the return of the latter to his post as Medical Superintendent of the Scottish Livingstone Hospital, Molepolole, a Government medical officer had to be seconded and was still in charge at the

end of 1956. A field laboratory was in operation in Ngamiland during the latter part of the year. The number of persons who received penicillin during the year was 85,775.

(b) Tsetse-Fly Control, Bechuanaland 2

World Health Organization provided a short-term consultant. A scheme is being continued and the services of the consultant have been requested for 1957.

(c) Tuberculosis Control, Bechuanaland 3

At the end of the year decisions on this project were held up pending the receipt of a report from the Tuberculosis Assessment Survey Team whose activities are recorded elsewhere (paragraph 61).

(d) Whooping Cough/Diphtheria Immunization Campaign Bechuanaland 4.

This campaign, which is also reported elsewhere (paragraphs 25 and 65), was due to start in May but unforeseen difficulties delayed the commencement until September.

(e) Health Education and Development of Rural Health Services, Bechuanaland 5

In August Miss Lyle Creelman, Chief of the Nursing Section, World Health Organization, and Mr. R. Bogue, Chief of the Health Education Section, visited the territory in connection with the above subject. At the conclusion of the visit discussions were held in Mafeking. At the end of the year action was still delayed pending the submission of a report and recommendations.

(f) Environmental Sanitation, Bechuanaland 6

Dr. Baity, Director of the Division of Environmental Sanitation, World Health Organization, Geneva, visited the Protectorate during the fourth week in August and early September. He visited all main stations including Maun. His visit was made for the purpose of assessing in what manner the World Health Organization best could help to solve Bechuanaland rural health problems in response to the application for assistance. Dr. Baity's advice on the control of nuisances arising at the Export Abattoir, Lobatsi, was instrumental in initiating more comprehensive nuisance control measures than had been considered previously by the Colonial Development Corporation.

Colonial Development and Welfare Fund Schemes

115. Scheme D.1037 was concluded, save for capital expenditure, on completion of the Gaberones Health Centre.

116. Scheme D.2835 (Diphtheria and Whooping Cough Prophylaxis) was approved and commenced in September.

117. Scheme D.3067 (Development of Medical Services) was started during the year.

Habit-Forming Drugs

118. 15 Import permits were issued during the year.

119. Drugs imported during the year were :-

Morphine	776.136	grammes
Cocaine	85.049	"
Indian Hemp	22,450	"
Pethidine	228.8	"

Publications./

Publications

120. Squires B.T. : Nutrition in the Bechuanaland Protectorate, Central African J.Med., 1956, 2, 112.

Finance.

121. The total revenue from Government hospitals and dispensary fees was £9,907. 17. 8 (£7,523. 5. 8.) made up as follows :-

Francistown	£2,056	15	0
Gaberones	872	10	0
Lobatsi	1,468	13	6
Mafeking	31	4	0
Mahalapye	1,416	5	0
Maun	1,812	10	0
Serowe	2,251	0	2
Total:	£9,907	17	8

122. The total ordinary expenditure of the department for the financial year ended 31st March, 1957 was :-

Personal Emoluments	£71,235
Travelling Expenses	3,860
Maintenance and Running of Vehicles	3,100
Upkeep of Hospitals and Dispensaries	12,500
Pathological Investigations	1,000
Specialist Medical Attention	700
Maintenance of Lunatics	2,000
General Stores	19,340
Grants to Missions and Union Hospitals	2,561
Public Health Measures	7,500
Miners Phthisis Patients	5
Treatment of Indigent Persons	50
Maintenance of x-ray plants	500
Expenses High Commission Territories Nursing Council	150
Transport	3,000
Office Furniture and Equipment	100
Bicycles and Accessories	35
Total:	£127,636

123. The total estimated ordinary revenue of the Bechuanaland Protectorate during the period 1956/57 was £1,238,594. The proportion of estimated ordinary medical expenditure to ordinary estimated revenue of the Protectorate was 10.3%.

124. The total estimated ordinary expenditure of the Bechuanaland Protectorate during the period 1956/57 was £1,394,586. The proportion of estimated ordinary medical expenditure to estimated ordinary expenditure of the Protectorate was 9.15%.

125. As in previous years it is a pleasure to acknowledge the loyalty and co-operation of the staff of this department.

B. T. SQUIRES

DIRECTOR OF MEDICAL SERVICES

MAFEKING.
14 August, 1957.

ANNEXURE I.

BECHUANALAND PROTECTORATE.

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS					OUT-PATIENTS	
	*Remaining in Hospital at end of 1955	Yearly Total Admissions	Yearly Total Deaths	+Total Cases Treated	∕Remaining in Hospital at end of 1956	Male	Female
A							
1. Tuberculosis of respiratory system	77	381	27	458	96	556	542
2. Tuberculosis of meninges and central nervous system ..	2	7	2	9	–	4	7
3. Tuberculosis of intestines, peritoneum and mesenteric glands	4	28	2	32	4	42	41
4. Tuberculosis of bones and joints	11	63	–	74	15	48	46
5. Tuberculosis, all other forms	4	76	1	80	6	146	201
6. Congenital syphilis	–	12	2	12	–	605	880
7. Early syphilis	–	20	–	20	–	784	984
8. Tabes dorsalis	–	–	–	–	–	–	–
9. General paralysis of insane	–	–	–	–	–	–	–
10. All other syphilis	1	28	1	29	2	1578	2745
11. Gonococcal infections	1	55	–	56	3	2860	3536
12. Typhoid fever	–	4	2	4	–	1	2
13. Paratyphoid fever and other Salmonella infections	–	–	–	–	–	–	–
14. Cholera	–	–	–	–	–	–	–
15. Brucellosis (undulant fever)	–	–	–	–	–	–	–
16. (a) Bacillary dysentery	2	23	–	25	1	441	397
(b) Amoebiasis	2	31	1	33	–	27	25
(c) Other unspecified forms of dysentery	–	15	–	15	–	155	185
17. Scarlet fever	–	–	–	–	–	194	185
18. Streptococcal sore throat	–	42	–	42	–	308	440
19. Erysipelas	–	2	1	2	–	1	1
20. Septicaemia and pyaemia	–	5	1	5	–	2	1
21. Diphtheria	1	29	7	30	–	13	16
22. Whooping Cough	2	38	1	40	2	755	877
23. Meningococcal infections	–	14	3	14	–	17	10
24. Plague..	–	–	–	–	–	–	–
25. Leprosy	1	3	–	4	1	15	18
Total Carried Forward	108	876	51	984	130	8550	11,139

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS: *Remaining in Hospital at end of 1955	IN-PATIENTS: Yearly Total: Admissions	IN-PATIENTS: Yearly Total: Deaths	IN-PATIENTS: +Total Cases Treated	OUT-PATIENTS: /Remaining in Hospital at end of 1956	OUT-PATIENTS: Male	OUT-PATIENTS: Female
Brought forward	108	876	51	984	130	8550	11,139
26. Tetanus	-	8	3	8	-	2	1
27. Anthrax	-	-	-	-	-	-	-
28. Acute poliomyelitis	-	2	-	2	-	-	-
29. Acute infectious encephalitis	-	1	-	1	-	-	-
30. Late effects of acute poliomyelitis and acute infectious encephalitis	-	8	-	8	7	2	7
31. Smallpox	-	-	-	-	-	-	-
32. Measles	6	73	2	79	3	383	473
33. Yellow fever	-	-	-	-	-	-	-
34. Infectious hepatitis	-	25	2	25	-	24	18
35. Rabies	-	1	1	1	-	1	-
36. (a) Louse-borne epidemic typhus	-	-	-	-	-	-	-
(b) Flea-borne epidemic typhus (murine)	-	-	-	-	-	-	-
(c) Tick-borne epidemic typhus	-	-	-	-	-	3	4
(d) Mite-borne typhus	-	2	-	2	-	2	3
(e) Other and unspecified typhus	-	2	-	2	-	18	7
37. (a) Vivax malaria (benign tertian)	-	30	1	30	-	169	134
(b) Malariae malaria (quartan)	-	-	-	-	-	-	-
(c) Falciparum malaria (malignant tertian)	2	154	2	156	3	677	627
(d) Blackwater fever	-	1	1	1	-	1	-
(e) Other and unspecified forms of malaria	-	23	-	23	-	60	86
38. (a) Schistosomiasis vesical (S. Laematobium)	-	23	-	23	1	127	79
(b) Schistosomiasis intestinal (S. mansoni)	-	-	-	-	-	-	-
(c) Schistosomiasis pulmonary (S. japonicum)	-	-	-	-	-	-	-
(d) Other and unspecified schistosomiasis	-	1	-	1	-	-	-
39. Hydatid disease	-	1	-	1	1	-	-
40. (a) Onchocerciasis	-	-	-	-	-	-	-
(b) Loiasis	-	-	-	-	-	-	-
(c) Filariasis (bancrofti)	-	-	-	-	-	-	-
(d) Other filariasis	-	1	-	1	-	1	-
Total carried forward	116	1232	63	1348	145	10,020	12,578

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS *Remaining in Hospital at end of 1955	Yearly Total Admissions	Yearly Total Deaths	+Total Cases Treated	≠Remaining in Hospital at end of 1956	OUT-PATIENTS Male	OUT-PATIENTS Female
Brought forward	116	1232	63	1348	145	10,020	12,578
41. Ankylostomiasis	–	1	–	1	–	1	–
42. (a) Tapeworm infestation and other cestode infestations	–	25	–	25	–	165	219
(b) Ascariasis	–	2	–	2	–	163	178
(c) Guinea worm (dracunculosis)..	–	–	–	–	–	–	–
(d) Other disease due to helminths	–	1	–	1	–	35	35
43. (a) Lymphogranuloma venereum	–	–	–	–	–	2	–
(b) Granuloma Inguinale, venereal	–	–	–	–	–	1	–
(c) Other and unspecified venereal diseases	–	2	1	2	–	4	–
(d) Foodpoisoning infection and intoxication	–	1	–	1	–	7	14
(e) Relapsing fever	–	15	–	15	4	7	7
(f) Leptospirosis icterohaemorrhagica (Weil's disease)	–	–	–	–	–	–	–
(g) Yaws	–	4	–	4	–	11	12
(h) Chickenpox	1	11	–	12	1	114	125
(i) Dengue	–	–	–	–	–	–	–
(j) Trachoma	–	10	–	10	–	38	72
(k) Sandfly fever	–	–	–	–	–	–	–
(l) Leishmaniasis	–	–	–	–	–	–	–
(m) a. Trypanosomiasis gambiensis	–	–	–	–	–	–	–
b. Trypanosomiasis rhodesiensis	2	10	–	12	2	1	–
c. Other and unspecified Trypanosomiasis	–	–	–	–	–	11	7
(n) Dermatophytosis	–	1	–	1	–	106	132
(o) Scabies	–	13	–	13	–	1228	1494
(p) All other diseases classified as infective and parasitic	–	6	–	6	–	68	83
44. Malignant neoplasm of buccal cavity and pharynx	–	1	1	1	–	1	1
45. Malignant neoplasm of oesophagus	–	4	1	4	–	1	1
46. Malignant neoplasm of stomach	–	1	–	1	–	1	–
47. Malignant neoplasm of intestine, except rectum	–	3	2	3	–	2	4
48. Malignant enoplasm of rectum	–	4	–	4	–	1	–
49. Malignant neoplasm of larynx	–	1	–	1	–	2	–
Total carried forward	119	1348	68	1467	152	11,990	14,962

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS					OUT-PATIENTS	
	xRemaining in Hospital at end of 1955	Yearly Total		+Total Cases Treated	/Remaining in Hospital at end of 1956	Male	Female
		Admissions	Deaths				
Brought forward	119	1348	68	1467	152	11,990	14,962
50. Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	-	1	-	1	-	1	-
51. Malignant neoplasm of breast	-	3	-	3	-	-	6
52. Malignant neoplasm of cervix uteri	1	8	1	9	-	-	13
53. Malignant neoplasm of other and unspecified parts of uterus	1	1	-	2	-	-	6
54. Malignant neoplasm of prostate	-	1	-	1	-	1	-
55. Malignant neoplasm of skin	3	13	-	16	1	5	7
56. Malignant neoplasm of bone and connective tissue	-	9	1	9	-	3	2
57. Malignant neoplasm of all other and unspecified sites	1	11	1	12	-	14	24
58. Leukaemia and aleukaemia	-	-	-	-	-	-	2
59. Lymphosarcoma and other neoplasms of lymphatic and haematopoietic system	-	-	-	-	-	18	31
60. Benign neoplasms and neoplasms of unspecified nature	4	102	-	106	4	97	253
61. Nontoxic goitre	-	2	-	2	-	9	64
62. Thyrotoxicosis with or without goitre	-	1	-	1	-	-	4
63. Diabetes mellitus	-	3	-	3	-	-	4
64. (a) Beriberi	-	7	-	7	-	23	45
(b) Pellagra	-	7	-	7	-	77	98
(c) Scurvy	-	3	-	3	-	131	184
(d) Other deficiency states	3	68	9	71	1	769	1277
65. (a) Pernicious and other hyperchromic anaemias ..	-	-	-	-	-	-	-
(b) Iron deficiency anaemias (hypochromic)	3	12	-	15	-	221	732
(c) Other specified and unspecified anaemias . ..	-	7	1	7	-	221	160
66. (a) Asthma	-	100	-	100	-	468	857
(b) All other allergic disorder, endocrine, metabolic and blood diseases	3	67	3	70	-	657	871
67. Psychoses	24	13	-	37	25	36	37
68. Psychoneuroses and disorders of personality	1	18	1	19	2	70	148
Total carried forward	163	1805	85	1968	185	14,793	19,887

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS *Remaining in Hospital at end of 1955	Yearly Total Admissions	Yearly Total Deaths	+Total Cases Treated	OUT-PATIENTS ≠Remaining in Hospital at end of 1956	Male	Female
Brought forward	163	1805	85	1968	185	14,793	19,887
69. Mental deficiency	–	3	–	3	–	19	16
70. Vascular lesions affecting central nervous system	–	23	2	23	–	21	23
71. Nonmeningococcal meningitis	–	8	5	8	–	8	2
72. Multiple sclerosis	–	2	–	2	–	–	2
73. Epilepsy	1	18	2	19	2	90	71
74. Inflammatory diseases of eye	3	92	–	95	5	1612	2081
75. Cataract	1	22	–	23	1	44	54
76. Glaucoma	–	14	–	14	–	18	16
77. (a) Otitis externa	–	7	–	7	–	315	356
(b) Otitis media and mastoiditis	2	28	–	30	1	410	479
(c) Other inflammatory diseases of ear	–	2	–	2	–	285	435
78. (a) All other diseases and conditions of eye	1	25	–	26	–	372	398
(b) All other diseases of the nervous system and sense organs	1	18	–	19	2	160	201
79. Rheumatic fever	–	33	1	33	3	49	70
80. Chronic rheumatic heart disease	2	41	7	43	1	38	67
81. Arteriosclerotic and degenerative heart disease ..	–	20	4	20	1	22	26
82. Other disease of heart	–	34	2	34	3	95	190
83. Hypertension with heart disease	2	14	1	16	1	97	82
84. Hypertension without mention of heart	–	18	–	18	–	58	111
85. Diseases of arteries	1	6	1	7	–	17	14
86. Other diseases of circulatory system..	1	41	5	42	4	46	63
87. Acute upper respiratory infections	3	157	1	160	–	2776	3620
88. Influenza..	–	134	1	134	2	849	1084
89. Lobar pneumonia	5	331	6	336	9	266	279
90. Bronchopneumonia	6	401	29	407	5	482	465
91. Primary atypical, other and unspecified pneumonia	–	99	–	99	1	218	380
92. Acute bronchitis	–	74	3	74	2	2147	2548
93. Bronchitis, chronic and unqualified	4	119	3	119	3	1904	2264
94. Hypertrophy of tonsils and adenoids	3	132	–	135	4	673	939
Total carried forward	195	3721	158	3916	235	27,884	36,223

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS				OUT-PATIENTS		
	*Remaining in Hospital at end of 1955	Yearly Total		+Total Cases Treated	/Remaining in Hospital at end of 1956	Male	Female
		Admissions	Deaths				
Brought forward	195	3721	158	3916	235	27,884	36,223
95. Empyema and abscess of lung	1	9	2	10	1	28	52
96. Pleurisy	1	43	-	44	-	90	92
97. (a) Pneumoconiosis	-	-	-	-	-	15	14
(b) All other respiratory diseases	-	11	-	11	-	376	424
98. (a) Dental caries	-	4	-	4	-	1288	1600
(b) All other diseases of teeth and supporting structures	-	19	-	19	2	408	396
99. Ulcer of stomach	-	5	-	5	-	7	6
100. Ulcer of duodenum	-	5	-	5	-	10	10
101. Gastritis and duodenitis	-	24	-	24	1	648	764
102. Appendicitis	2	107	1	109	5	46	95
103. Intestinal obstruction and hernia	-	34	5	34	3	107	105
104. (a) Gastro-enteritis and colitis between 4 weeks and 2 years	3	149	17	152	2	1610	1845
(b) Gastro-enteritis and colitis, ages 2 years and over	-	137	7	137	1	1094	1286
(c) Chronic enteritis and ulcerative colitis	-	3	1	3	-	69	69
105. Cirrhosis of liver	-	15	3	15	-	17	9
106. Cholelithiasis and cholecystitis	-	9	-	9	-	26	56
107. Other diseases of digestive system	2	98	-	100	2	3491	7840
108. Acute nephritis	-	17	3	17	1	68	72
109. Chronic, other and unspecified nephritis	1	6	1	7	-	193	63
110. Infections of kidney	1	12	-	13	-	122	256
111. Calculi of urinary system	-	2	-	2	-	7	11
112. Hyperplasia of Prostate	1	6	-	7	1	24	-
113. Diseases of breast	-	32	-	32	1	1	220
114. (a) Hydrocele..	-	19	-	19	-	45	-
(b) Disorders of menstruation	-	49	-	49	2	-	4857
(c) All other disease of the genito-urinary system	11	436	3	447	5	956	5778
115. Sepsis of pregnancy, childbirth and the puerperium	1	57	-	58	4	-	62
116. Toxaemias of pregnancy and the puerperium	-	20	-	20	-	-	11
Total carried forward	219	5049	201	5268	266	38,630	62,216

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS				OUT-PATIENTS		
	*Remaining in Hospital at end of 1955	Yearly Total Admissions	Yearly Total Deaths	+Total Cases Treated	/Remaining in Hospital at end of 1956	Male	Female
Brought forward	219	5049	201	5268	266	38,630	62,216
117. Haemorrhage of pregnancy and childbirth	1	56	2	57	1	-	20
118. Abortion without mention of sepsis or toxaemia . ..	6	169	-	175	1	-	283
119. Abortion with sepsis	1	10	-	11	1	-	43
120. (a) Other complications of pregnancy, childbirth and the puerperium	7	310	10	317	5	-	1790
(b) Delivery without complications	60	2429	-	2489	57	-	642
121. Infections of skin and subcutaneous tissue	3	240	4	243	2	1812	2671
122. Arthritis and spondylitis	2	55	-	57	2	423	587
123. Muscular rheumatism and rheumatism, unspecified ..	1	70	-	71	-	2924	3954
124. Osteomyelitis and periostitis	3	52	1	55	2	67	78
125. Ankylosis and acquired musculoskeletal deformities	1	8	-	9	-	8	11
126. (a) Chronic Ulcer of Skin (including tropical ulcer)	-	13	-	13	-	57	89
(b) All other diseases of skin	-	60	-	60	1	1485	2005
(c) All other diseases of musculoskeletal system ..	1	33	-	34	2	452	798
127. Spina bifida and meningocele	-	2	-	2	-	2	-
128. Congenital malformations of circulatory system . ..	-	7	-	7	-	8	6
129. All other congenital malformations	-	24	-	24	1	25	25
130. Birth injuries	-	8	1	8	-	-	1
131. Postnatal asphyxia and atelectasis	-	93	13	93	-	2	3
132. (a) Diarrhoea of newborn (under 4 weeks)..	-	9	6	9	-	67	41
(b) Ophthalmia neonatorum	-	11	-	11	-	3	1
(c) Other infections of newborn	-	2	-	2	-	16	13
133. Haemolytic disease of newborn	-	2	-	2	-	1	2
134. All other defined diseases of early infancy	-	57	1	57	3	218	191
135. Ill-defined diseases peculiar to early infancy and immaturity, unqualified	3	149	5	152	5	112	130
136. Senility without mention of psychosis	-	16	1	16	-	37	47
137. (a) Pyrexia of unknown origin	-	39	1	39	3	71	66
(b) Observation, without need for further medical care	26	2286	-	2312	27	1547	5131
(c) All other ill-defined causes of morbidity	1	119	-	120	-	1950	2552
Total carried forward	335	11,378	246	11,713	379	49,917	83,396

RETURN OF DISEASES, INJURIES AND CAUSES OF DEATH FOR THE YEAR 1956.

DISEASES	IN-PATIENTS					OUT-PATIENTS	
	xRemaining in Hospital at end of 1955	Yearly Total		+Total Cases Treated	≠Remaining in Hospital at end of 1956	Male	Female
		Admissions	Deaths				
Brought forward	335	11,378	246	11,713	379	49,917	83,396
ACCIDENTS, POISONINGS AND VIOLENCE (EXTERNAL CAUSE)							
A.E.							
138. Motor vehicle accidents	-	26	1	26	-	36	22
139. Other transport accidents	2	44	-	46	8	92	34
140. Accidental poisoning	-	22	1	22	1	19	9
141. Accidental falls	10	152	3	162	5	378	286
142. Accident caused by machinery	2	42	-	44	4	80	9
143. Accident caused by fire and explosion of combustible material	7	75	6	82	5	425	491
144. Accident caused by hot substance, corrosive liquid, steam and radiation	2	89	6	91	-	131	171
145. Accident caused by firearm	-	5	-	5	-	3	-
146. Accidental drowning and submersion	-	-	-	-	-	1	-
147. Foreign body entering eye and adnexa	1	31	-	32	-	104	54
Foreign body entering other orifice	-	9	1	9	-	102	78
Accidents caused by bites and stings of venomous animals and insects	4	54	-	58	3	120	115
Other accidents caused by animals	5	73	1	78	10	157	71
All other accidental causes	12	331	-	343	5	1510	721
148. Suicide and self-inflicted injury	-	3	-	3	-	3	1
149. Homicide and injury purposely inflicted by other persons (not in war)	3	96	1	99	2	183	138
150. Injury resulting from operations of war	-	-	-	-	-	-	-
TOTAL	383	12,430	266	12,813	422	53,261	85,596

This form is adapted in accordance with the "Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death, World Health Organization, Geneva, 1948.

x 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 figures in this column to be carried on to the next year's Return.

1964-1