Annual medical and sanitary report / Swaziland.

SWAZILAND

ANNUAL MEDICAL & SANITARY REPORT FOR THE YEAR 1948

A. NASS,
Box 2038,
JOHANNESBURG.

LSG—27118

S W A Z I L A N D .

ANNUAL MEDICAL AND SANITARY REPORT

FOR THE YEAR 1948.

I. ADMINISTRATION.

(a) STAFF.

European.

	Director of Medical Services.
5	Medical Officers (1 post vacant).
1	Dispenser, Storekeeper and Radiographer.
2	Hospital Assistants and Dispensers (1 post in abeyance).
10	Nursing Sisters (1 post vacant).
1	Clerk Grade I.
1	Lady Clerk and Typiste.
1	Superintendent, Leper Hospital.
1	Malaria Medical Officer.
1	Laboratory Assistant.
1	Housekeeper (post vacant).

African.

3	Health Assistants (1 post vacant).
1	Dispenser.
33	Nurses.
2	Clerks.
2	Ambulance Drivers and Handymen.
1	Dispensary Orderly.
18	Ward Attendants.
5	Cooks.
16	Laundresses.
5	Groundsmen.
1	Office Messenger.
6	Malaria Assistants.
1	Lorry Driver.
2	Orderlies.

Appointments and Changes in European Staff.

Name	Office or Rank	Date of Appointment	Date of Resignation
Miss E.M. Skuthorp	Nursing Sister	1. 6. 48	
Miss J. Z. Trollip	Nursing Sister	16. 6. 48	
Miss E.B.I. Brownlee	Nursing Sister		18. 6. 48
Miss J. Harding	Nursing Sister		30. 6. 48
Miss M. E. Requilot	Nursing Sister	1.10. 48	
Miss G.E.M. Jackson	Nursing Sister		27. 6. 48

Reliefs.

Name	Office or Rank	From	To
Dr. D. Drew, O.B.E.	Medical Officer	12.12. 48	31.12.48
Mrs. S. Slatem	Typiste	3. 8. 48	13. 9.48

Distribution of European Medical and Nursing Staff on 31st December, 1948.

Name	Rank	Station
Dr. J.C.J.Callanan.	Director of Medical Services.	Mbabane
Dr. H. Flack.	Medical Officer.	do
Dr. L.E.D.F. Joubert.	Medical Officer.	do
Major W.E.L.Eason.	Dispenser, Storekeeper, Radiographer.	do
Mrs. G.M. Sivewright.	Nursing Sister.	do
Miss J.Z. Trollip.	Nursing Sister.	do
Miss E.M. Skuthorp.	Nursing Sister.	do
Mrs. H. Perkins.	Nursing Sister.	Mankaiana
Dr. A.E. Batchelor.	Medical Officer.	Hlatikulu
Dr. O. Arnheim.	Medical Officer.	do
Mr. J.L. van der Vyver.	Hospital Assistant, Dispenser.	do
Miss A. Martin.	Nursing Sister.	do
Miss A.D.Killen.	Nursing Sister.	do
Miss M.E. Requilet.	Nursing Sister.	do
Mrs. S. van Niekerk,M.B.E.	Nursing Sister.	Goedgegun
Miss D.E. Boast.	Nursing Sister.	Hluti
Dr. O. Mastbaum.	Malaria Medical Officer.	Bremersdorp
Miss L. O'Connor Black	Laboratory Assistant.	do
Mr. A.J. Sowden	Superintendent, Mbuluzi Leper Hospital.	Mbuluzi

(b) LEGISLATION AFFECTING THE MEDICAL DEPARTMENT ENACTED DURING THE YEAR.

(i) High Commissioner's Notice No. 168, Medical Service Regulations Amendment.

(ii) High Commissioner's Notice No. 226, Establishment Leper Asylum Northern District.

(c) FINANCIAL.

Revenue 1948/49.

Hospital, Health Centre and other Fees.	£1,868.14. 9.

Expenditure 1948/49.

Personal Emoluments.	21,371. 0. 0.
Travelling Expenses.	933. 0. 0.
Allowances and Fees.	247. 0. 0.
Maintenance of Patients and purchase of Medicines.	9,289. 0. 0.
Laboratory Services - South African Institute for Medical Research.	600. 0. 0.
Maintenance of Lepers.	404. 0. 0.
Maintenance of Lunatics.	1,637. 0. 0.
Specialist Treatment in Union Hospitals for Indigents.	47. 0. 0.
Hospital Equipment.	2,116. 0. 0.

/Uniforms.....

FINANCIAL (Continued).

Uniforms for African Staff.	£ 363. 0. 0.
Vaccination.	65. 0. 0.
Training of Native Nurses.	385. 0. 0.
Havelock Mine - drug replacements.	nil
Subsidies for Medical Services:- Church of the Nazarene Mission of South Africa, £2600; Red Cross £38; Roman Catholic Mission £100.	2738. 0. 0.
Anti-malaria Measures.	431. 0. 0.
Leper Survey.	66. 0. 0.
Purchase of Ambulance.	637. 0. 0.
	£41329.0. 0.
Malaria Survey Scheme No. D.258.) Anti-Malaria and Public Health) Campaign Scheme No. D. 1084)	3765. 0. 0.
Leper Settlement Scheme No. D.290.) Leper Hospital Scheme No. D.1017.)	2350. 0. 0.
Total Expenditure on Medical and Sanitary Services.	£47444. 0. 0.
Total Revenue of the Territory.	£469764. 0. 0.
The relationship of Medical Expenditure (excluding Colonial Development & Welfare Fund Expenditure) to the total Revenue of the Territory.	8.79%

II. PUBLIC HEALTH.

1. General Diseases.

As in previous years, respiratory diseases and dental caries were prevalent amongst all sections of the community. A number of cases of goitre were treated in the Southern District, and several thyroidectomies were performed for the relief of pressure symptoms. A further endemic focus of the disease has been located in the vicinity of the new Leper Hospital on the Mbuluzi River. The incidence of cardiovascular diseases is relatively high, and diseases of this type constituted the principal cause of death in the case of European residents. Mixed deficiency diseases were commonly met with, especially in the Southern District, where several cases of infant neglect were encountered.

11. Communicable Diseases.

(i) Malaria. That incidence of malaria in 1948 was somewhat greater than that of the previous year, but

/although.....

although a high mosquito density occurred during the first two months of the transmission season, and the prevalence of the disease in the Central District, particularly, exceeded that of 1947, the prospects which existed in the latter year of the disease assuming epidemic proportions in 1948 were, fortunately, not fulfilled. The transmission season was of relatively short duration. 617 In-patients and 833 Out-patients were treated at Hospitals as compared with 304 and 577 respectively in 1947. During the transmission season of 1947-1948, field trials were carried out in various malarious areas of Swaziland with a view to determining the prophylactic value of Proguanil, and its effect on the incidence of malaria amongst the rural population, in doses of 100 mg. administered twice a week. The results of these experiments have formed the subject of a special report. The effects of Proguanil in lowering the incidence of malaria amongst rural natives, improving the health of school children, and in reducing absenteeism in schools have been so pronounced that the drug has been adopted for use as a routine issue to school children, members of the police force and road gangs, during the malaria season. Further trials using Proguanil in increased dosage (i.e. a single dose of 300 mg. per week), have already commenced, and will extend throughout the 1948/49 transmission season. It is considered that if Proguanil is to act as a true causal prophylactic of the local strain of P. falciparum, doses of 100 mg. per day may be necessary in the case of non-immune adults. Field experiments with wettable DDT, Benzine hexachloride and a new DDT emulsion (M.25) are also being carried out with the object of ascertaining which of these insecticides will give the best results under local conditions. It is ultimately proposed to utilise the selected insecticide as a routine anti-malaria measure throughout all the malarious areas of the Territory, provided the residual effect of a single annual application proves to be sufficiently prolonged.

(ii) Smallpox. In March five cases occurred in the Pigg's Peak Sub-District, four of which were in the Endingeni area and one at the Havelock Mine. Prompt measures were taken to isolate and protect contacts, and there was no further spread of the disease. Vaccinations performed at Endingeni and Pigg's Peak numbered 2873 and 1800 respectively.

(iii) Bilharziasis.

(Hospital cases: 97 In-patients,
433 Out-patients).

An extension of the molluscan survey to the "highveld" areas has failed to reveal the existence of the known intermediate hosts of Schistosomiasis, i.e. Physopsis africana, Planorbis pfeifferi or Bulinus forskalii, in these portions of the Territory. Examination of specimens from a group of pupils at Zombodo school, which is situated in the "middleveld", showed that 85% were suffering from Urinary Schistosomiasis. The question of controlling the snail vectors of Bilharziasis in localised areas by

/the.....

the use of Benzine hexachloride is being investigated.

(iv) Tuberculosis.

(Hospital cases: 81 In-patients,
172 Out-patients)

253 cases were treated during 1948 as compared with 196 in 1947 and 300 in 1946. No facilities exist for the institutional treatment of Tuberculosis patients.

(v) Dysentery.

(Hospital cases: 176 In-patients,
293 Out-patients).

The incidence of Dysentery was greater than in 1947, the disease being most commonly met with in the Northern District, particularly during the last quarter of the year. Of the 469 cases treated at Hospitals, 176 (37.5%) were amoebic and 238 (50.7%) bacillary in origin, 55 (11.7%) being classified as "undifferentiated". In 1947 amoebic infections predominated. Sulphaguanidine gave excellent results in the treatment of all forms of bacillary Dysentery.

(vi) Diarrhoea and Enteritis.

Hospital Cases:
(a) Under two years:-
128 In-patients.
781 Out-patients.
(b) Over two years:-
98 In-patients.
372 Out-patients.

These diseases were more prevalent in 1948 than in the previous year, the incidence being greatest in the Southern District where cases were evenly distributed throughout the year. The bulk of the cases in the Northern District occurred during the last six months of the year. Relatively few cases were reported from the Central District.

(vii) Venereal Diseases. The number of cases treated at various institutions throughout the Territory is shown in the following table:-

/Disease.....

Disease			Mbabane Hospital	Mankaiana Health Centre	Other Health Centres Northern District	Hlatikulu Hospital	Health Centres Southern District	Raleigh Fitkin Memorial Hospital	Health Centres Central District	Total
I. SYPHILIS.										
(A) Early Syphilis.	(i)	Primary	92	11		91		196		390
	(ii)	Secondary	311	326		120		262		1019
	(iii)	Early Latent (Asymptomatic)	36	7		137		1		181
(B) Late Syphilis Tertiary.	(i)	Skin, Mucosal, bone, muscle, joint.	19	2		19		11		51
	(ii)	Cardiovascular	2	-		7		-		9
	(iii)	Neurosyphilis	3	-		2		-		5
	(iv)	Late Latent (Asymptomatic)	8	-		4		-		12
(C) Congenital.	(i)	Early (under 2 years of age)	29	51		21		48		149
	(ii)	Late (over 2 years of age)	2	34		4		-		40
		Undifferentiated.			314		1033		1009	2356
		Total	502	431	314	405	1033	518	1009	3212
II. GONORRHOEA.										
	(i)	Acute	398	76	58	114	143	140	73	728
	(ii)	Chronic	5	21		15				274 41
		Total	403	97	58	129	143	140	73	1043
III. OTHER VENEREAL DISEASES.			-	5	-	10	-	4	-	19
IV. RE-ATTENDANCES.										
Syphilis			3262	1926	843	1530	4087	2763	3214	17625
Gonorrhoea.			751	-	22	13	231	13	34	1064
Other Venereal Diseases.			-	2	-	23	-	2	-	27
Total Re-Attendances.			4013	1928	865	1566	4318	2778	3248	18716

The number of cases of Venereal Diseases treated during 1948 exceeded that of 1947 by 8.4%. In all areas, and particularly in the Central District, the incidence of Syphilis has increased, but in the Southern District, Gonorrhoea was less prevalent than in the preceeding year. Technical difficulties and lack of trained laboratory staff have prevented the Department from undertaking serological surveys of selected population groups, but there is reason to believe that these obstacles

/will.....

will be surmounted during the forthcoming year, and case-finding and contact tracing may then be introduced.

(viii) Leprosy. The construction of the new Mbuluzi Leper Hospital was completed in May, and the management and control of the institution, which had already been completely equipped, was transferred to the Nazarene Mission with effect from the 1st September, 1948 under certain prescribed terms and conditions, the Mission being directly subsidised, mainly from Colonial Development and Welfare Fund sources, to the extent of £1574 per annum in respect of the services which it agreed to render. Fifty-seven patients were immediately transferred from the old Nquabaneni Leper Camp, which was then demolished. The number of in-patients on the 31st December was 59, i.e. 24 adult males, 22 adult females, 5 males and 8 female children, as compared with 73 in the old camp in December, 1947.

The staff of the new hospital consists of a Medical Superintendent (non-resident), a Lay Superintendent (resident), a Matron, a Nurse, an Agricultural Demonstrator, a Hospital Attendant and 2 labourers.

Health of Patients.

The health of the patients has been satisfactory during the period September-December, but four deaths occurred prior to the transfer taking place. The excellent housing and other facilities which the hospital provides are greatly appreciated by the patients, whose general condition and morale have markedly improved, and these are factors which should materially assist in overcoming the prejudices of others whose segregation is essential.

Origin of Patients admitted.

District	Males	Females	Total
Pigg's Peak.	2	1	3
Mbabane.	3	2	5
Mankaiana.	-	1	1
	5	4	9

Duration of disease before admission.

Duration	Admission	Percentage
0 - 1 years	2	22.2
1 - 3 years	2	22.2
Over 3 years	5	55.6

Classification on Admission.

Neural cases 8
Lepromatous 1

/Average.....

Average age on admission, 20 years.

There were 6 admissions of children under 16. (66.6%)

Treatment.

The commonest complaints for which patients presented themselves for Out-Patient treatment at the Dispensary were: Coryza, eye diseases, trophic ulcers and scabies.

24 cases (13 males and 11 females) were admitted to the hospital wards, and received treatment for the following conditions:-

Ante-natal case	1
Chaulmoogra oil reaction	1
Dental caries	2
Influenza	1
Lepra reaction	2
Otitis media	1
Senility	1
Scabies	2
Taeniasis	5
Ulcers	7
Ulceration of larynx	1
	24 (Total In-patient days = 421)

Neural cases have received introdermal injections of Chaulmoogra oil (Ol. hydnocarpii) with 4% Cresote in initial doses of 5 ccs. twice weekly, the dose being increased by 0.5 cc weekly to the point of maximum tolerance.

Lepromatous cases are under treatment with "Sulphetrone" (B.W.& Co.), the initial dose being 1.5 g. daily, which is gradually increased to a maximum of 6.0 g. Routine checks of red cells and haemoglobin are being carried out, and a Lovibond Comparator is being obtained by the Government Laboratory at Bremersdorp for the purpose of estimating blood-sulphetrone at weekly intervals, and thus ensuring that effective therapeutic blood levels, i.e., 7.5-10 mg. per ml. are being maintained. Iron and yeast are administered throughout the Sulphetrone treatment with the object of counteracting the development of the various forms of anaemia associated with this form of therapy, and preventing the occurrence of peripheral neuritis.

Laboratory Examinations.

159 Smears were examined for Microbacterium leprae with the following results:-

	Positive		Negative		Total
	Nasal	Skin	Nasal	Skin	
Lepromatous	20	53	-	6	79
Mixed	4	10	-	-	14
Neural	7	9	10	40	66

/50%.....

50% of Neural cases gave positive skin smears, a fact which supports the case for the segregation of this form of leprosy.

Leprosy Survey.

24000 persons have been examined during the course of the Leprosy Survey, and 60 Lepers have been discovered. On the basis of the incidence of 2.5 per 1000 thus revealed, it would be incorrect to assume that 450 lepers may be found in Swaziland, for as the Survey proceeds the incidence steadily diminishes, and if, as is expected, this tendency persists, the actual number of cases will prove to be far less than that indicated at the present stage of the investigation. It may be of interest to note that the incidence of Leprosy in Swaziland is at least 75% less than that of Kenya where it amounted to an average of 10.2 per 1000, the range varying from 0.9 to 31.7 in different parts of the Colony, and the disease being most common in areas with a high average atmospheric humidity in which clumping of the population and over-crowding prevail.

(ix) Typhoid and Paratyphoid Fever. Ten cases were admitted to the Government Hospitals in the Northern (2) and Southern (8) Districts, and no deaths occurred, as compared with 24 cases and one death in 1947. The following cases were reported during the year:-

District	Cases	Deaths
Northern District	8	-
Central District	17	1
Southern District	12	1

(x) Diphtheria. Two cases were reported from the Southern District, and one each from the Northern and Central Districts.

(xi) Whooping Cough. The distribution of cases which came under observation during the year was as follows:-

Northern District	123
Southern District	65
Central District	12
	200

(xii) Poliomyelitis. The following cases of Poliomyelitis were reported during the year:-

Month	Northern District	Central District	Southern Dist.
Jan.	-	3(x)	1
Feb.	1	-	-
Mar.	-	2	-
May	2	-	1(x)
June	1	1	-
Total	4	6	2

/With.....

With two exceptions (x.2 cases) all cases occurred amongst Non-Europeans. Dr. J.S.J.Gear, Officer-in-Charge, Rickettsial and Virus Laboratory, South African Institute for Medical Research, reported that a survey of protective antibodies by means of the mouse protection test showed that the African population of the Havelock Mine possessed a very high degree of immunity to Poliomyelitis.

(xiii) Measles. This disease was most prevalent in the Southern District and the Havelock Mine area, in which over 50% of the cases reported from the Northern District occurred.

The case distribution was as follows:-

Northern District	96
Central District	49
Southern District	111
	256

(xiv) Chickenpox. Of 140 cases reported, 91 occurred at the Havelock Mine.

(xv) Relapsing Fever. A small outbreak of Relapsing Fever occurred in a kraal in the Esipocosini area in which a heavy infestation with Ornithodorus moubata was discovered. Localised foci of infestation have previously been discovered at Mbabane, Forbes Reef, Nkaba, Hebron, Mahamba and in the vicinity of the Mbuluzi Mission, all of which are situated at altitudes of 3000 feet and over. Benzine hexachloride is used for the purposes of disinfestation.

Vital Statistics.

The final figures for the latest Census (1946) are as follows:-

	Males	Females	Total	
Europeans.	1727	1474	3201	
Coloured.	359	380	739	
Swazis.	91014	87617	178631	181269
Foreign Natives.	2371	267	2638	
Asiatics.	5	1	6	
	95476	89739	185215	

Total European population.	3201
Total European births.	85
Total European deaths.	21
Birth rate per 1000	26.5
Death rate per 1000	6.5
Infant mortality.	nil

/Table.....

Table showing cause of death.

Causes of Death	Number of Deaths.
Bacillary Dysentery.	1
Cancer - Malignant disease.	3
Diseases of the heart, and other diseases of the circulatory system.	8
Pneumonia.	1
Other diseases of respiratory system.	4
Senility.	1
Snake bite.	1
Violence (all forms, including injuries and accidents).	2
	21

Registration is not compulsory in the case of the Native population.

III. HYGIENE AND SANITATION.

A. (i) Preventive Measures.

(a) Malaria. The application of DDT (5% in Kerosene) as an imagocide was carried out in native areas on a wider scale than that undertaken in any previous year, and almost 100% mortality of anopheles was attained throughout the short transmission season. In the urban areas of Bremersdorp, house spraying was reinforced by anti-larvae measures. A separate report by the Malaria Medical Officer is attached.

(b) Smallpox. Routine vaccination of prisoners, warders, police and medical department personnel was carried out, and 4673 vaccinations were performed in Native areas.

(c) Enteric Fever. A number of Europeans were immunised against the diseases in this group.

(ii) General Measures of Sanitation. The quarterly bacteriological analysis of specimens from the treated water supplies at Bremersdorp, Goedgegun and Hlatikulu consistently indicate the need for the adoption of a more efficient system of chlorination. The regular inspections of the urban areas carried out by the Medical Staff in the Southern District have resulted in an appreciable improvement in sanitary conditions, but the position is less satisfactory in the case of the larger townships of the Central and Northern Districts, which present the Local Authorities with problems of greater magnitude than those encountered in the South.

Progress continues to be made, particularly in Mbabane and Bremersdorp, in the replacement of earth closets and sanitary pails, at both publicbuildings and government officials quarters, by water-borne sanitation, with disposal through french drains from

/individual.....

individual septic tanks.

(iii) School Hygiene. Although, as yet, no organised system of school medical inspection exists, many schools have been visited at frequent intervals by members of the medical staff. The pupils at the Mbabane Trade School were medically examined and weighed at quarterly intervals, those at the Swazi National School, Matapha, were examined twice, and those at St. Mark's School, Mbabane, were inspected on one occasion.

(iv) Labour Conditions. High building costs militate against any great improvement in the housing of native labour on farms and in urban areas.

(v) Buildings. Sixteen new houses for the accommodation of European Government Officers were completed, and thirteen which are in process of construction, i.e., 5 at Goedgegun, 1 at Bremersdorp, 1 at Hlatikulu and 6 at Mbabane, will be ready for occupation in July, 1949. They are all of modern design and permanent construction, and vary in floor area from 1,200 to 1700 square feet according to type. The accommodation comprises a combined dining and sitting room, kitchen, pantry, bathroom, lavatory and two to three bedrooms. The buildings are of standard design, and separate servants quarters are provided. The cost of construction, which depends on the size and number of bedrooms, is approximately £1900 and £2300. The housing shortage is now no longer acute.

(vi) Food in relation to Health and Diseases. Nutritional diseases were not infrequently met with towards the close of the year before the new crops were reaped. The activities of the Agricultural Department have resulted in greater quantities and a wider variety of food crops being grown for local consumption.

The opening of dairies in the Native areas has acted as a stimulus to milk production, and the consumption of meat and eggs is increasing.

B. Measures taken to spread the knowledge of Hygiene and Sanitation.

The schools provide the most effective medium for the spread of knowledge of Hygiene and Sanitation, and their work has been supplemented by the distribution of a series of Posters and pamphlets provided by the South African Red Cross Society which dealt with the following subjects:-

Food facts and daily diets.
Tuberculosis.
House flies.
Typhoid.
Venereal Diseases.

IV. MATERNITY AND CHILD WELFARE.

(a) Northern District.

40 Europeans and 740 Africans attended the weekly ante-Natal Clinic at Mbabane, and 339 confinements were conducted at the Hospital, as compared with 303 in 1947, and 170 in 1946. 250 infants and 100 mothers received attention at the Child Welfare Clinic at Matapha.

Table showing number of Maternity cases treated at Health Centres:-

Health Centre	No. of Cases
Mankaiana.	94
Horo.	1
Government Farm.	6
Hebron.	2
Total	103

(b) Central District.

Raleigh Fitkin Memorial Hospital, Bremersdorp.

Ante-natal attendances.	1542
Child Welfare attendances.	2809
Confinements.	355

Table showing number of Maternity cases treated as Health Centres:-

Health Centre	No. of Cases
Stegi.	81
Endingeni.	51
Pigg's Peak.	38
Mliba.	8
Mafuteni.	2
Bhekinkosi.	9
Balegane.	15
Ebenezer.	18
Total	222

(c) Southern District:

Clinic	Ante-Natal First Attendances.	Confinements.
Hlatikulu Hospital.	487	198
Goedgegun.	200	6
Mhlotsheni.	121	3
Hluti.	134	5
Mahamba.	118	6
Sipofaneni.	105	-
St. Philips.	89	5
Totals	1254	223

/The.....

The questioning of 251 married women revealed a Fertility rate of 2434 (611 live births) and an Infant Mortality rate of 153 (94 deaths).

V. HOSPITALS AND DISPENSARIES (HEALTH CENTRES).

(a) Mbabane Hospital.

Number of beds (European)	4
Number of beds (Native)	46
Number of cots (Native)	6
	56

Daily average number of In-Patients (European) 0.88
" " " " " (Coloured) 0.65
" " " " " (African) 71.1

Staff.

2 Medical Officers.
3 European Nursing Sisters.
1 Dispenser-Storekeeper-Radiographer.
13 African Nurses.
7 Ward Attendants.

	1944	1945	1946	1947	1948
Admissions.	1642	1898	2287	2213	2210
Deaths.	62	50	41	28	51
Confinements.	134	152	170	303	339
Operations.	130	176	215	193	297
Out-Patients. (New Cases)	9001	11403	8916	8547	8945
Out-patients. Re-attendances.	1043	838	3913	6953	9173

With the object of reducing the density of overcrowding, it is proposed to erect rondavels in the vicinity of Mbabane Hospital to provide accommodation for out-patients coming from a distance who are required to attend daily for treatment, and who, if such accommodation was available, would not be permitted to occupy hospital beds. It is hoped that these buildings will be erected during 1949, and if the results are satisfactory, it is intended that similar facilities should be provided at Hlatikulu and Mankaiana.

/(b) Hlatikulu.....

(b) Hlatikulu Hospital.

Number of beds (European)	8
Number of beds (Eurafrican)	3
Number of beds (Native)	30
Number of cots (Native)	3
	44

Daily average number of In-Patients

(European)	2.54
(Coloured)	0.46
(African)	74. 5

Staff.

2 Medical Officers.
3 European Nursing Sisters.
1 European Hospital Assistant-Dispenser.
10 African Nurses.
1 Dispensary Orderly.
4 Ward Attendants.

	1943	1944	1945	1946	1947	1948
Admissions.	1324	1680	1762	2245	1647	1613
Deaths.	25	35	35	46	43	50
Confinements.	48	98	120	150	188	198
Operations.	151	153	199	112	256	241
Out-Patients (new cases).		8026	9146	12145	6955	5169
Out-Patients (Re-attendances).					2342	2894

Certain structural alterations and extensions, including the provision of improved ward accommodation, the construction of sanitary annexes, and the installation of an improved sewerage system, have been carried out, and a portion of the hospital has been renovated. A new lighting plant has been provided, and X-ray facilities have been made available. Additional quarters for African Staff were constructed at Mbabane and Hlatikulu Hospitals, and proposals for the extension and modernisation of both these institutions are under consideration.

(c) Raleigh Fitkin Memorial Hospital, Bremersdorp.

Number of beds (European)	8
" " " (Eurafrican)	4
" " " (Native)	68
	80

Admissions.

Year	E	C	A	DEATHS
1946	281	116	2154	42
1947	264	117	1814	60
1948	232	92	2082	82

/Daily.....

Daily average number of In-Patients (European) 3.7
" " " " " (Coloured) 2.7
" " " " " (African) 63.7

Out-Patients.

Year	New Cases	Re-attendances	Total
1946	5540	5500	11040
1947	5283	4680	9963
1948	9253	8314	17567

Staff.

2 Medical Officers.
6 Nursing Sisters.
1 Midwife.
6 African Nurses.
21 Probationer Nurses.

(d) Havelock Mine Hospital, Emlembe.

Figures relating to members of the General Native Population who received treatment at the Mine Hospital are given below:-

	1946	1947	1948
Admissions	141	113	81
Out-Patients (new cases)	333	47	79
Re-attendances	2285	128	147
Daily average No. of In-patients	3.3	3.4	2.7

(e) Dispensaries (Health Centres)

The following Tables show the number of cases treated at Government and Mission Health Centres:-

Cases treated at Government Health Centres:-

Name of Health Centre.	In-patients.	Out-Patients				No. of confinements attended.	
		New Cases		Re-attendances.			
		E	N.E.	E	N.E.	E.	N.E.
Horo	-	6	1502	-	719	-	1
Hebron	-	-	809	-	292	-	2
Government Farm.	-	1	1137	-	786	-	6
Goedgegun	-	520	2428	449	1393	4	2
Mhlotsheni	-	58	1344	54	804	-	3
Hluti	-	314	1749	82	1253	-	5
Mahamba	-	-	2152	-	1058	-	6
Sipofaneni	-	1	1239	-	588	-	-
St. Philips	-	2	2085	-	6757	-	5
Totals	-	902	14445	585	13650	4	30
Grand Totals	-	15347		14235		34	
Mankaiana x	762	43	6727	47	2853	-	94

/"E" = European.....

"E" = European, "N.E" = Non-European.
x, figures additional to those shown in the Returns of Diseases for Government Hospitals. (Appendix I).

The comparative figures for the past three years are given below:-

(a) Health Centres.

Year	Out-Patients	Re-attendances	Total attendances	Confinements.
1946	15201	4228	19429	68
1947	14109	8151	22260	47
1948	15347	14235	29582	34

Although there has been a progressive increase in total attendances during the period 1946-48, and an increase of 32.9% in 1948 as compared with 1947, this is mainly attributable to an improvement in the Re-attendance Rate, as there has been but little variation in the number of new cases treated each year.

(b) Mankaiana Health Centre (8 beds).

Year	Admissions	Out-Patients				Total attendances.	Confinements.
		New cases		Re-attendances			
		E.	N.E.	E.	N.E.		
1946	957	25	7244	10	3135	10414	122
1947	724	36	5693	19	3999	9747	100
1948	762	43	6727	47	2853	9670	94

The average number of in-patients per day at this Health Centre was 19.6 in 1948 as compared with 25.8 and 25.1 in 1947 and 1946 respectively.

Cases treated at Nazarene Mission Health Centres.

Health Centre	In-Patients	Out-Patients				Number of confinements	
		New Cases		Re-attendances			
		E.	N.E.	E.	N.E.	E.	N.E.
Stegi	299	322	5354	362	4996	-	81
Endingeni	221	-	2401	-	1445	-	51
Pigg's Peak	127	71	2254	69	1900	-	38
Mliba	11	-	825	-	654	-	8
Mafuteni	3	-	499	-	288	-	2
Bhekinkosi	6	-	367	-	406	-	9
Balegane	8	2	660	2	734	-	15
Ebenezer (opened in July)	32	-	762	-	459	-	18
	707	395	13122	433	10882	-	222

/The.....

The total out-patient attendances at Mission Health Centres was 24832 as compared with 22504 in 1947 and 22652 in 1946.

VI. PRISONS.

The prisons at Mbabane, Bremersdorp and Hlatikulu were inspected at weekly intervals. The state of health of prisoners has been satisfactory. A new section has been added to the Mbabane gaol for the accommodation of mental patients.

VII. SCIENTIFIC.

The following Table gives a summary of the routine laboratory examinations performed at the undermentioned institutions:-

		Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital Bremersdorp.
Blood films.		11447	617		1758
Total Blood Counts.		204	-		10
Throat & Nose Swabs (C. Diphtheriae).		6	-		-
Bacteriological Smears.		100	866		83
Faeces.		12	215		92
Urines.		210	1038		2898
Sputa.		-	128		71
Serological tests for Syphilis.		23	-		-
Identification of adult mosquitos.		984	-		-
Identification of mosquito larvae.		1520	-		-
Identification of snails.		1135	-		-
Cerebrospinal fluids.		-	1		-
Unspecified.				1813	
Totals.	1948	15641	2865	1813	4912
Totals.	1947	16428	2013	1427	3905

As a result of assistance provided from the Colonial Development and Welfare Fund, the Public Health Laboratory has now been equipped to undertake the culture and identification of C. diphtheria, Agglutination tests, and the serological diagnosis of Syphilis utilising the Modified Ide Test supplemented by the Eagle Flocculation test, and various other general laboratory procedures which were hitherto beyond its scope. Arrangements have been

/made.....

made for selected members of the African Hospital Staff to receive a systematic course of instruction in elementary laboratory technique during 1949. These steps will assist in raising the standard of diagnosis in hospitals, provide vital information which will ultimately enable the Public Health requirements of the Territory to be accureately assessed, and facilitate progress in the sphere of preventive medicine.

VIII. MEDICO-LEGAL WORK, ETC.

	Northern District	Southern District	Central District	Total
Post-Mortem Examinations.	25	34	42	101
Examinations for Assault, etc.	36	121	434	591
Examinations for tax exemption.	72	189	176	437
Totals	133	344	652	1129

In conclusion, I wish to record my appreciation of the loyal and devoted manner in which the members of the staff, both European and African, performed their duties during the year.

(sgd) J.C.J. CALLANAN.

DIRECTOR OF MEDICAL SERVICES.

ANNUAL REPORT, 1948.

PUBLIC HEALTH LABORATORY, BREMERSDORP.

A. STAFF.

1. The field staff had to be reduced by one Native Malaria Assistant in April, 1948 in order to lessen expenditure. Because of this it was necessary to narrow down still further the areas under supervision of our Native Malaria Assistants and the whole of the territory south of the Mhlatuze river and a large area in the Central District (Croydon, Mlibo and Luve) could not be visited by our staff and no records of the malaria position in these districts are available.

2. Two additional Native Malaria Assistants were employed in the middle of October, 1948. This was made possible by a further grant by the Colonial Development and Welfare Fund for the purpose of doing certain field experiments with new insecticides.

B. CLIMATIC CONDITIONS AND MOSQUITO INFESTATION.

3. The average rainfall for 1947 and 1948 is shown in Table I.

TABLE I.

AVERAGE MONTHLY RAINFALL IN 1947 AND 1948.

	1947	1948
January	7.2	5.3
February	5.3	5.0
March	6.7	4.8
April	3.4	1.1
May	0.5	0.2
June	0.8	0.0
July	0.7	0.1
August	0.1	0.1
September	1.7	1.6
October	3.4	2.6
November	6.8	3.4
December	8.9	3.0
TOTAL	45.5	27.2

4. As will be seen from Table I, the spring rains of 1947 (November and December) were quite heavy but the summer rains were unusually low. This condition resulted in a relatively high mosquito density in native huts at the beginning of the Transmission Season (i.e. in January and February, 1948) but thereafter the mosquito density decreased and from March onwards the average mosquito infestation was definitely below average. Table II illustrates this position.

/TABLE II.....

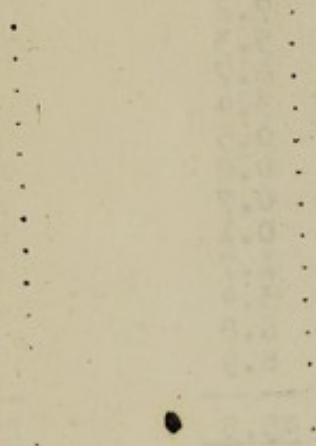


TABLE II.

AVERAGE MONTHLY MOSQUITO DENSITY PER HUT DURING THE TRANSMISSION SEASONS OF 1947 AND 1948.

	1947.	1948.
January	6.0	20.4
February	13.6	18.1
March	9.2	6.3
April	2.8	2.6
May	13.0	2.4
June	4.8	0.4

C. MALARIA INCIDENCE.

5. The high mosquito density in the early months of the transmission season (January and February) resulted in a comparatively high malaria incidence during these months but this incidence decreased during the later months of the season and there was no peak period of transmission which usually occurs from March to May. Table III represents the number of malaria cases determined from the examination of blood slides sent in to the Laboratory by our field staff, local hospitals and health centres. It has to be remembered that these figures do not represent the actual case incidence occuring in the territory.

TABLE III.

MALARIA CASE INCIDENCE IN 1947 and 1948.

	1947.	1948.
January	170	515
February	300	559
March	445	652
April	435	446
May	306	392
June	253	194
July	131	65
August	57	61
September	35	60
October	58	84
November	32	205
December	153	77

6. Nothing can be said about the incidence of pernicious forms of malaria treated in the hospitals as no reliable records are available.

7. The distribution of the different Plasmodium species was as follows during 1948:-

P.falciparum	87.8%
P.vivax	10.6%
Mixed infections (P.falc. and P.vivax)	1.6%

/8. Amongst.....

8. Amongst the cases of Plasmodium falciparum 18.8% showed crescents in the peripheral blood.

9. As pointed out in previous reports a small percentage (usually less than 1%) of the total infections were due to P.ovale but these are recorded as P.vivax infections as the differentiation between these two species is not reliable for separate recording when only thick drop technique is used.

D. CONTROL.

10. For the first time malaria control work was done on a fairly large scale. The work consisted of spraying of native huts with a 5% solution of DDT in kerosene. Almost all these spraying operations were done in native areas in the middleveld and were commenced at the beginning of January and completed in March. The following districts were sprayed:-

Bremersdorp and District
Matapa
Zombode
Ezitheni
Mahlanya
Malkerns
Government Farm, Usutu
Some parts of the Usutu Valley
Lobamba

11. Altogether well over 3,000 huts in these areas were treated. The residual killing effect was almost 100% in all areas and lasted throughout the Transmission Season, but it should be remembered that in 1948 the Transmission Season was unusually short, especially in the middleveld where A.gambiae disappeared from control huts as early as March.

12. In addition to the control work in these native areas numerous Government compounds and police posts etc. in the bushveld were sprayed with DDT.

13. In the urban area of Bremersdorp constant oiling of rivers and pools as well as spraying of native quarters and European houses with DDT was done throughout the Transmission Season.

14. At the request of the authorities of the Pongola Land Settlement which adjoins the southern border of Swaziland, the Malaria Medical Officer payed a visit to the settlement in October to discuss certain malaria control measures in that area. It was agreed and authorised by the Swaziland Government that this department should employ and pay two temporary labourers for oiling and spraying the area of Swaziland which adjoins the Pongola settlement. Owing to the fact that we have no trained staff working in the south of Swaziland the authorities of the Pongola Land Settlement agreed that these two labourers should work under the supervision and direction of the European Health Inspector attached to the settlement. All spraying

/equipment.....

equipment and insecticides will be provided by the Pongola Land Settlement. It is hoped that this arrangement will work satisfactorily for both parties concerned.

E. FIELD EXPERIMENTS WITH PALUDRINE.

15. During the Transmission Season of 1947/48 field trials with Paludrine were carried out in various malarious areas of Swaziland to ascertain whether this drug had a noticeable effect on the malaria incidence of rural natives. The results of these investigations and the conclusions arrived at were published in a comprehensive report. (See paragraph 26).

16. These experiments are being continued in the Transmission Season of 1948/49 with some hundred children in one of our bushveld areas (Hereford) and with approximately 200 school children in various malarious parts of the country. The dosage employed in these experiments will differ from that of last year and the new dosage will be three tablets of 0.1 gramme once a week according to the recommendation of the Malaria Committee of the Colonial Office.

17. Preliminary blood surveys of these children and of children in control areas were done in November, 1948.

F. FIELD EXPERIMENTS WITH WETTABLE DDT, BHC and M25 EMULSION.

18. At the suggestion of Mr. C.B. Symes of the British Insecticides Research Council field experiments are being done in different malarious areas in the bushveld to test the efficacy and residual killing effect on A.gambiae of the above insecticides and also to ascertain whether there is any lowering in the malaria incidence of the rural inhabitants in these sprayed areas. Two areas of approximately 20 square miles each were selected and the huts in the one area were sprayed with wettable DDT and those in the other with BHC. Approximately 800 huts in each area were thus treated. These operations were carried out in December, 1948.

19. Preliminary blood surveys were done on 200 children from each area in order to ascertain the parasite rates of these children in the non-transmission season. During the coming Transmission Season regular monthly blood surveys will be done in each of the experimental areas and also in two control areas where conditions with regard to malaria transmission are the same as those in the sprayed areas.

20. A fortnightly check on the hut infestation with A.gambiae will be done in the experimental and control areas.

21. In addition, a limited number of huts (50) in

/another.....

another bushveld area has been sprayed with M25 DDT emulsion (manufactured at Klipfontein) to compare the residual killing effect on A.gambiae of this new emulsion and the other insecticides.

G. EXTENSION OF LABORATORY WORK.

22. Through a special grant from the Colonial Development and Welfare Fund it was possible to buy the necessary equipment for certain serological and bacteriological work and we now have the facilities for doing serological tests for syphilis (modified Ide and Eagle tests), agglutination tests for fevers of the Salmonella group (Widals), Rickettsiosis (Weil-Felix), Brucellosis and bacteriological examinations for C.diphtheria. The local hospitals can now avail themselves of our services for the above examinations and this will have the great advantage of obtaining results in a shorter time.

H. STATISTICS OF EXAMINATIONS DONE IN THE LABORATORY.

23. The following is a detailed account of routine work done in the Public Health Laboratory, Bremersdorp during 1948:-

1.	Blood slides examined for malaria parasites from local hospitals.	2,234
2.	Blood slides examined for malaria parasites sent in by field staff.	3,609
3.	Blood slides examined in connection with Paludrine experiments.	5,034
4.	Blood slides examined in connection with Insecticide Experiments.	570
5.	Full Blood Counts.	204
6.	Bacteriological examinations for Diphtheria. (Since December).	6
7.	Bacteriological smears and stools.	112
8.	Serological tests for syphilis. (Since December).	23
9.	Urine examinations.	210
10.	Identification of adult mosquitoes.	984
11.	Identification of mosquito larvae.	1,520
12.	Identification of snails.	1,135.

24. It should be placed on record that the routine laboratory work (excluding agglutination tests) has been almost doubled since 1947. A comparison of the blood slides examined in 1947 and 1948 shows an increase of over 5,000 (6,093 in 1947 and 11,447 in 1948), and in spite of this increase in work there was no increase in the laboratory staff which consists of the Malaria Medical Officer, who has to spend a considerable amount of his time in the field, and one European laboratory assistant.

/I.MALARIA.....

I. MALARIA CONFERENCE.

25. At the end of September the Malaria Medical Officer attended an interterritorial malaria conference at Matubatuba, Zululand, at the invitation of the Union Health Department. Delegates from Transvaal, Natal, Bechuanaland Protectorate, Swaziland, Portuguese East Africa, the South African Railways and Harbours and the Department of Defence were present. The exchange of opinions on malaria research and control work was very beneficial and interesting. Amongst the resolutions passed the two following are of particular interest to this territory:-

Resolution No. 2.

"This conference, having regard to the limited resources available for the practice of malaria control in neighbouring territories, endorses the policy of protecting the closer settled communities and protection of areas abutting on main lines of communications until such time as control can be extended to cover areas as is now practised in the Union."

Resolution No. 5.

"The conference recommends that regard be paid to the question of the incidence of malaria along international boundaries with special reference to the effective range of flight of the mosquito vectors and inter-territorial field liaison aimed at the establishment of uniform standards of control."

J. PUBLICATION.

26. The following publication was submitted:-

"Field trials with Paludrine amongst rural natives and school children in Swaziland". July, 1948.

APPENDIX I.

GOVERNMENT HOSPITALS.

RETURN OF DISEASES AND DEATHS (IN-PATIENTS)

For the YEAR 1948.

DISEASE	Cases remaining in hospital from previous year.		Total admissions		Total deaths		Total cases Treated		Remaining in hospital at end of year.		Out-Patients	
	E	A	E	A	E	A	E	A	E	A	E	A
1. Epidemic, Endemic and Infectious Diseases:												
1. Enteric Group -												
(a) Typhoid Fever.....		1	2	10			2	10		1		
(b) Paratyphoid A.....												
(c) Paratyphoid B.....												
(d) Type not defined...												
2. Typhus (Tick).....			5				5				6	
3. Relapsing Fever.....												
4. Undulant Fever.....												
5. Malaria -												
(a) Tertian.....			1	17			1	17			6	36
(b) Quartan.....				2				2				
(c) Aestivo-autumnal..		3	7	235		2	7	237		1	13	187
(d) Clinical.....				28				28			10	125
(e) Cachexia.....												
(f) Blackwater.....				1		1		1				
6. Smallpox.....												
Alastrim.....												
7. Measles.....				32				30		2	9	108
8. Scarlet Fever.....												
9. Whooping Cough.....				7		1		7			3	166
10. Diphtheria.....				2		1		2				
11. Influenza.....			7	39			7	39			60	339
12. Miliary Fever.....												
13. Mumps.....												12
14. Cholera.....												
15. Epidemic diarrhoea....											5	
16. Dysentery -												
(a) Amoebic.....	1	2	4	71		4	5	71		2	6	38
(b) Bacillary.....		1		63		8		58		6	22	14
(c) Undefined or due to other causes...		1		2				3			2	27
Total carried forward.	1	8	26	509		17	27	505		12	142	1178

E - Europeans

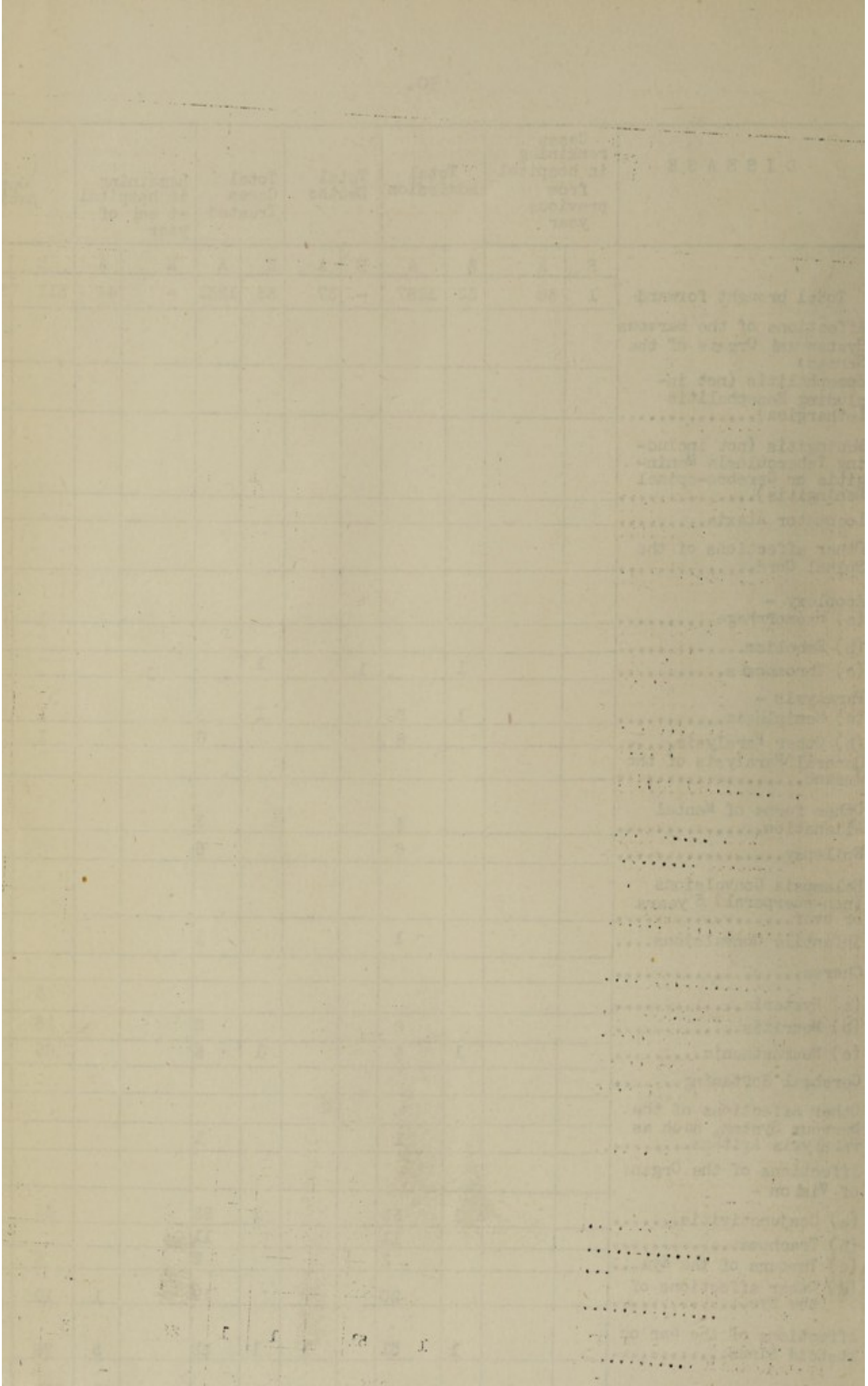
A - Africans.

DISEASE	Cases remaining in hospital from previous year		Total admission		Total Deaths		Total cases Treated		Remaining in hospital at end of year		Out-Patients.	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward.	1	8	26	509	-	17	27	505	-	12	142	1178
1. Epidemic, Endemic and Infectious Diseases. (Contd.)												
17. Plague -												
(a) Bubonic												
(b) Pneumonic.....												
(c) Septicaemic.....												
(d) Undefined.....												
18. Yellow Fever.....												
19. Spirochaetosis icterohaemorrhagica.....												
20. Leprosy.....												4
21. Erysipelas.....											2	
22. Acute Poliomyelitis....			1	2			1	2				4
23. Encephalitis Lethargica.												
24. Epidemic Cerebro-spinal Fever.				3				3				
25. Other Epidemic Diseases -												
(a) Rubeola (German Measles).....											3	2
(b) Varicella (Chicken-pox).....				1				1			7	29
(c) Kala-azar.....											1	
(d) Phlebotomus Fever..												
(e) Dengue.....												
(f) Epidemic Dropsy....												
(g) Yaws.....												
(h) Trypanosomiasis....												
26. Glanders.....												
27. Anthrax.....												
28. Rabies.....												
29. Tetanus.....												
30. Mycosis.....												
31. Tuberculosis, Pulmonary and Laryngeal.....				47		4		46		1	1	88
32. Tuberculosis of the Meninges or Central Nervous System.....				2		1		1		1		
33. Tuberculosis of the Intestines or Peritoneum.....				2				2				1
34. Tuberculosis of the Vertebral Column.....												2
35. Tuberculosis of Bones and Joints.....				4				3		1		5
Total carried forward..	1	8	27	570	-	22	28	563	-	15	156	1313

DISEASE	Cases remaining in hospital from previous year		Total admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward	1	8	27	570	-	22	28	563	-	15	156	1313
36. Tuberculosis of other organs -												
(a) Skin or Sub-cutaneous Tissue (Lupus).....				3		1		2		1		
(b) Bones.....				4				4				
(c) Lymphatic System.		2		17				19				46
(d) Genito-urinary...				3		1		3				
(e) Other organs.....												
37. Tuberculosis disseminated -												
(a) Acute.....												
(b) Chronic.....												
38. Syphilis -												
(a) Primary.....		3	1	33			1	35		1	7	145
(b) Secondary.....		14		240				247			8	353
(c) Tertiary.....		2		16		3		18			2	55
(d) Hereditary.....		1		67		4		68				44
(e) Period not indicated.....				5				5				67
39. Soft Chancre.....												5
40. (a) Gonorrhoea and its complications....		3	2	188		1	2	173		18	25	404
(b) Gonorrhoeal Ophthalmia.....		1		3				4				2
(c) Gonorrhoeal Arthritis.....		1		3				3		1		
(d) Granuloma Venereum.....				5				5				1
41. Septicaemia.....				4		2		4				
42. Other Infectious Diseases.....												
II. General Diseases not mentioned above:-												
43. Cancer or other malignant Tumours of the Buccal Cavity.....				2				2				
44. Cancer or other malignant Tumours of the Stomach or Liver.....				1		1		1				
45. Cancer or other malignant Tumours of the Peritoneum Intestines, Rectum.				1				1			2	
46. Cancer or other malignant Tumoursof the Female Genital Organs.												
47. Cancer or other malignant Tumours of the Breast.....				2				2				
48. Cancer or other malignant Tumours of the skin.....		1		1				1			1	1
49. Cancer or other malignant Tumours of Organs not specified.....				2				2			3	
Balance carried forward	1	36	30	1170	-	35	31	1162	-	44	199	2436

DISEASE	Cases remaining in hospital from previous year		Total admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients.	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward..	1	36	30	170	-	35	31	1162	-	44	199	2436
II. General Diseases not mentioned above - (Contd.)												
50. Tumours, non-malignant..				16		1		16			6	10
51. Acute Rheumatism.....				12				12			56	295
52. Chronic Rheumatism.....				10				10			14	178
53. Scurvy (including Barlow's Disease.....				2				2				37
54. Pellagra.....		1		9				10				9
55. Beri-Beri.....				2				2				
56. Rickets.....											1	2
57. Diabetes (not including Insipidus).....				1				1			2	
58. Anaemia -											5	
(a) Pernicious.....			~~1~~	~~4~~		~~1~~	~~1~~	~~4~~			~~24~~	~~103~~
(b) Other Anaemias and Chlorosis.....			1	4		1	1	4			24	103
59. Diseases of the Pituitary Body.....				1				1				1
60. Diseases of the Thyroid Gland -			~~1~~	~~1~~			~~1~~	~~1~~				26
(a) Exophthalmic Goitre.			1	1			1	1			1	
(b) Other diseases of the Thyroid Gland, Myxoedema.....				6				6			3	
				~~1~~				1			1	
61. Diseases of the Para-Thyroid Glands.....				1				1				
62. Diseases of the Thymus..												
63. Diseases of the Supra-Renal Glands.....												
64. Diseases of the Spleen..				1				1				
65. Leukaemia -												
(a) Leukaemia.....												
(b) Hodgkin's Disease...												
66. Alcoholism.....												
67. Chronic poisoning by mineral substances (lead, mercury, etc.)		1		1				2				
68. Chronic poisoning by organic substances (morphia, cocaine, etc.)												
69. Other General Diseases -												
Auto-intoxication.....												
Purpura Haemorrhagica...												
Haemophilia.....												
Diabetes Insipidus.....												
Total carried forward...	1	38	32	1237	-	37	33	1231	-	44	311	3097

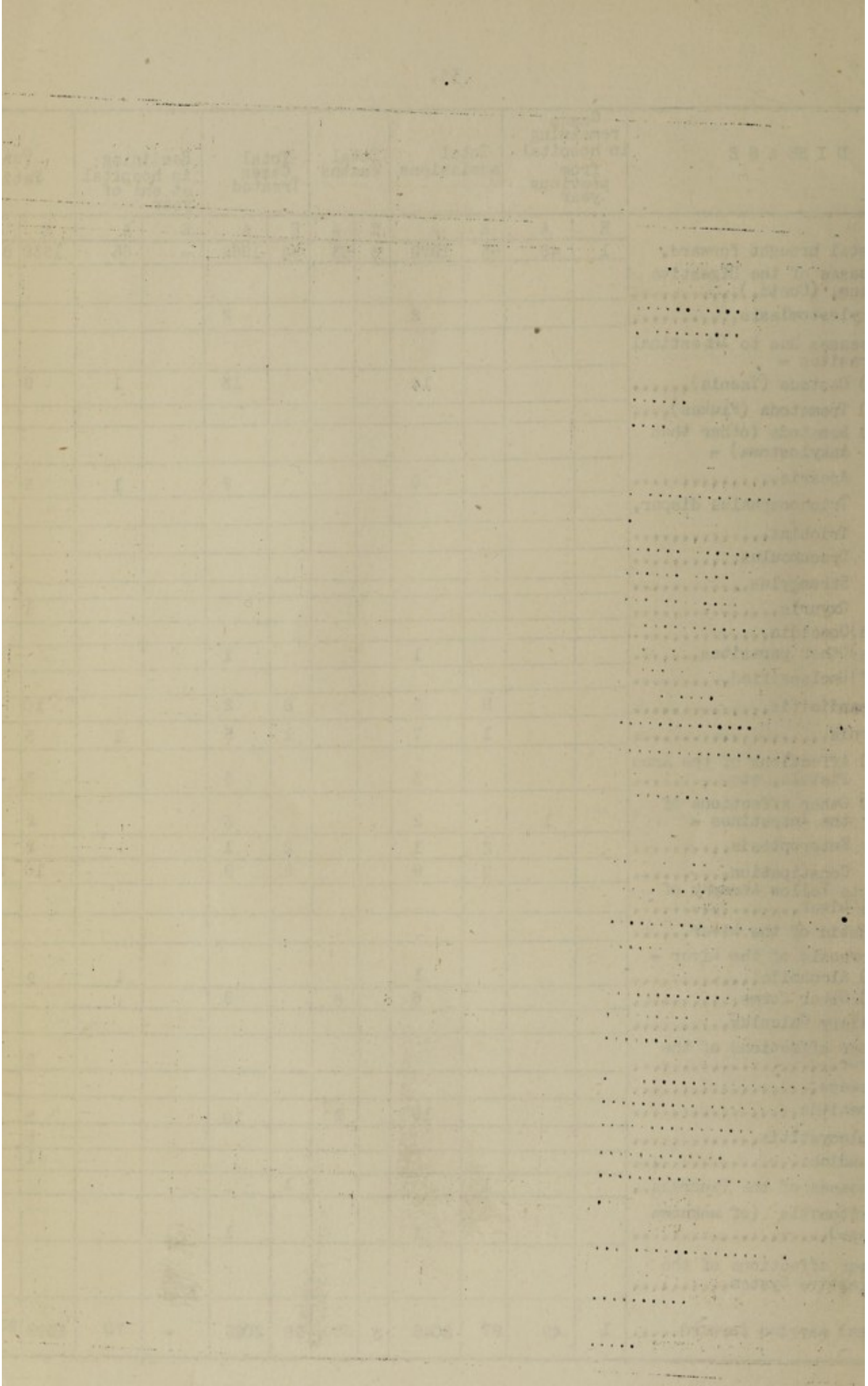
DISEASE	Cases remaining in hospital from previous year		Total admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward	1	38	32	1237	-	37	33	1231	-	44	311	3097
III. Affections of the Nervous System and Organs of the Senses:												
70. Encephalitis (not including Encephalitis Lethargica).....												
71. Meningitis (not including Tuberculosis Meningitis or Cerebro-spinal Meningitis).....												
72. Locomotor Ataxia.....												
73. Other affections of the Spinal Cord.....												
74. Apoplexy - (a) Haemorrhage.....											1	
(b) Embolism.....												
(c) Thrombosis.....			1		1		1					1
75. Paralysis - (a) Hemiplegia.....			1	3			1	3			1	
(b) Other Paralysis.....				6				6			1	2
76, General Paralysis of the Insane.....												
77. Other forms of Mental Alienation.....				3				3				16
78. Epilepsy.....				6				6				22
79. Eclampsia Convulsions (non-puerperal) 5 years or over.....												
80. Infantile Convulsions....				1				1				
81. Chorea.....												
82. (a) Hysteria.....											3	1
(b) Neuritis.....				2				2			26	59
(c) Neurasthenia.....			1	5			1	5			65	41
83. Cerebral Softening.....												
84. Other Affections of the Nervous System, such as Paralysis Agitans.....												1
				1				1				
85. Affections of the Organs of Vision -												
(a) Conjunctivitis.....			1	53			1	53			35	424
(b) Trachoma.....				11				11				1
(c) Tumours of the Eye...				2				2			2	4
(d) Other affections of the Eye.....				20				19		1	19	83
86. Affections of the Ear or Mastoid Sinus.....			1	51		1	1	28		3	78	253
Total carried forward....	1	38	37	1381	1	38	38	1371	-	48	542	4005



DISEASE	Cases remaining in hospital from previous year		Total admission		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward....	1	38	37	1381	1	38	38	1371	-	48	542	4005
IV. Affections of the Circulatory System:												
87. Pericarditis.....												
88. Acute Endocarditis or Myocarditis.....			1	3			1	3			2	9
89. Angina Pectoris.....											15	2
90, Other Diseases of the Heart -											11	5
(a) Valvular -												
Mitral.....		1		10				11			5	13
Aortic.....				3		1		3				3
Tricuspid.....											1	
Pulmonary.....											1	
(b) Myocarditis.....			3	26	1	6	3	24		2	7	24
91. Diseases of the Arteries -												
(a) Aneurism.....				1		1		1				
(b) Arterio-Sclerosis.....												6
(c) Other Diseases.....											22	
											2	
92. Embolism or Thrombosis (non-cerebral).....											2	
											7	
93. Diseases of the Veins -												
Haemorrhoids.....			1	2			1	2			6	
Varicose Veins.....				2				2			9	7
Phlebitis.....				1				1				1
94. Diseases of the Lymphatic System -												
Lymphangitis.....			2	6			2	6			6	18
Lymphadenitis, Budo (non-specific).....				20				19		1	6	21
95. Haemorrhage of undetermined cause.....			1	7			1	7				2
96. Other affections of the Circulatory System.....				3				2		1		
97. Diseases of the Nasal Passages - Adenoids.....				1				1			19	57
Polypus.....				2				1		1	3	1
Rhinitis.....				1				1			19	3
Coryza.....				8				8			38	323
98. Affections of the Larynx - Laryngitis.....				3				3			12	42
99. Bronchitis.....												
(a) Acute.....				72		1		71		1	99	1017
(b) Chronic.....			1	24			1	22		2	14	276
100. Broncho-Pneumonia.....		5	3	71		5	3	76			6	22
Total carried forward.....	1	44	49	1647	2	52	50	1635	-	56	824	5857

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward...	1	44	49	1647	2	52	50	1635	-	56	854	5857
V. Affections of the Respiratory System. (Contd.).....												
101. Pneumonia - (a) Lobar.....		1	5	128		7	5	127		2	2	12
(b) Unclassified.....												
102. Pleurisy, Empyema.....			1	19			1	19			4	18
103. Congestion of the Lungs.												
104. Gangrene of the Lungs...												
105. Asthma.....		1	5	9	1	1	5	10			24	94
106. Pulmonary Emphysema.....												
107. Other affections of the lungs.....				2				2				55
Pulmonary Spirochaetosis.												
VI. Diseases of the Digestive System:												
108. (a) Diseases of Teeth or Gums. - Caries.....			3	31			3	31			125	737
Pyorrhoea.....				1				1				
(b) Other affections of the mouth - Stomatitis.....				5				5			22	129
Glossitis, etc.....												
109. Affections of the Pharynx Tonsils - Tonsillitis.....		1	12	33			12	31		3	127	162
Pharyngitis.....			2	1			2	1			11	24
110. Affections of the Oesophagus.....												2
111. (a) Ulcer of the Stomach			3	1			3	1			7	
(b) Ulcer of the Duodenum											4	
112. Other affections of the Stomach.....												
Gastritis.....			2	13			2	13			41	202
Dyspepsia.....				7				7			8	348
113. Diarrhoea and Enteritis - Under two years.....		1		59		2		56		4	35	491
114. Diarrhoea and Enteritis - Two years and over.....			1	23		1	1	23			72	243
Colitis.....												
Ulceration.....											2	
114(a). Sprue.....												
Total carried forward....	1	48	83	1979	3	63	84	1962	-	65	1338	8374

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward.	1	48	83	1979	3	63	84	1962	-	65	1338	8374
VI. Diseases of the Digestive System. (Contd.).....												
115. Ankylostomiasis.....				2				2				
116. Diseases due to Intestinal Parasites -												
(a) Cestoda (Taenia).....				14				13		1	9	278
(b) Trematoda (Flukes)....												
(c) Nematoda (other than Ankylostoma) -												
Ascaris.....				8				7		1	5	94
Trichocephalus dispar.												
Trichina.....												
Dracunculus.....												
Strongylus.....												
Oxyuris.....											1	
(d)Coccidia.....												
(e)Other parasites.....				1				1				
(f)Unclassified.....												
117. Appendicitis.....			8	2			8	2			10	2
118. Hernia.....			1	7			1	5		2	3	5
119. (a) Affections of the Anus Fistula, etc.....				3				3			3	2
(b) Other affections of the Intestines -		1		2				3			2	10
Enteroptosis.....			2	1			2	1			2	7
Constipation.....			2	9			2	9			10	270
120. Acute Yellow Atrophy of the Liver.....												
121. Hydatid of the Liver.....												
122. Cirrhosis of the Liver -												
(a) Alcoholic.....				1						1	2	
(b) Other forms.....				6		3		6		1	6	
123. Biliary Calculus.....												
124. Other affections of the Liver.....											2	
Abscess.....												2
Hepatitis.....				10		2		10			3	5
Cholecystitis.....											8	
Jaundice.....											1	1
125. Diseases of the Pancreas..			1				1					
126. Peritonitis (of unknown cause).....				1				1				
127. Other affections of the Digestive System.....												
Total carried forward.....	1	49	97	2046	3	68	98	2025	-	70	1399	9050



DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward	1	49	97	2046	3	68	98	2025	-	70	1399	9050
VII. Diseasesof the Genito-Urinary System (non-Venereal) -												
128. Acute Nephritis.....				3				3				1
129. Chronic Nephritis.....		1		4				5				
130. (a) Chyluria.....												
(b) Schistosomiasis....		5	1	59			1	63		1	5	89
131. Other affections of the Kidneys -												
Pyelitis.....				13		1		13			3	32
132. Urinary Calculus.....			3				3				2	
133. Diseases of the Bladder Cystitis.....		2		12				14			23	346
134. Diseases of the Urethra (a) Stricture.....				1						1		32
(b) Other.....				2				2			3	
135. Diseases of the Prostate Hypertrophy.....												
Prostatitis.....				1				1			4	
136. Diseases (non-Venereal) of the Genital Organs of Man -												
		2		2				4				
Epididymitis.....				4				4			2	5
Orchitis.....				1				1			2	5
Hydrocele.....				7		1		7			1	39
Ulcer of Penis.....				2				2			1	22
137. Cysts or other non-malignant Tumours of the Ovaries.....			1	3			1	3				1
138. Salpingitis -				60				59		1		60
Abscess of the Pelvis..												
139. Uterine Tumours (non-malignant).....				4				4			1	14
140. Uterine Haemorrhage (non-puerperal).....				4				4			3	14
141. (a) Metritis.....				5				5				
(b) Other affections of the female Genital Organs.....			5	28			5	28			9	13
Displacement of Uterus.....											2	72
Amenorrhoea.....				2				2			5	37
Dysmenorrhoea.....				5				5			40	347
Leucorrhoea.....											6	11
142. Diseases of the Breast (non-puerperal) -												
Mastitis.....				4				3		1	3	13
Abscess of Breast.....				16				16			1	
Total carried forward...	1	59	107	2288	3	70	108	2273	-	74	1515	10203

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward...	1	59	107	2288	3	70	108	2273	-	74	1515	1020 3
VIII. Puerperal State:												
143. (A) Normal Labour.....		19	37	434			37	437		16		1
(B) Accidents of Pregnancy.....												
(a) Abortion.....			2	33			2	33			3	35
(b) Ectopic Gestation....				1				1				
(c) Other accidents of Pregnancy.....			1	7			1	6		1	1	
144. Puerperal Haemorrhage.....			1	1			1	1				
145. Other Accidents of Parturition.....				7		1		7				
146. Puerperal Septicaemia.....				9		1		9				
147. Phlegmasie Dolens.....		1		1				2				
148. Puerperal Eclampsia.....												
149. Sequelae of Labour.....				1				1			1	
150. Puerperal affections of the Breast.....											4	
IX. Affections of the Skin and Cellular Tissues:-												
151. Gangrene.....				4				4				1
152. Boil.....			1	2			1	2			28	45
Carbuncle.....				2				2			3	1
153. Abscess.....		3	6	85			6	87		1	10	49
Whitlow.....				1				1			2	
Cellulitis.....		2	1	56			1	56		2	62	179
154. (a) Tinea.....											14	47
(b) Scabies.....		3		28				30		1	4	303
155. Other Diseases of the Skin:		2	3	35	1		3	36		1	69	239
Erythema.....											4	
Urticaria.....				1				1			15	115
Eczema.....											17	25
Herpes.....			1	1			1	1			1	3
Psoriasis.....											3	
Elephantiasis.....												
Myiasis.....												
Chigoes.....												
Cutaneous Lieshmaniasis.												
Total carried forward...	1	89	160	2997	4	72	161	2990	-	96	1756	11.46

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients.	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward....	1	89	160	2997	4	72	161	2990	-	96	1756	11246
X. Diseases of Bones and Organs of Locomotion (other than Tuberculous):												
156. Diseases of Bones -												
Osteitis.....		1	1	19			1	17		3	3	3
157. Diseases of Joints -												
Arthritis.....			1	9			1	8		1	15	62
Synovitis.....				10				9		1	9	20
158. Other Diseases of Bones or Organs of Locomotion.....		1		3				4		1	11	17
XI. MALFORMATIONS:												
159. Malformations -												
Hydrocephalus.....				2				2				
Hypospadias.....				1				1				1
Spina Bifida.....				1				1				
Total carried forward.....	1	92	162	3042	4	72	163	3032	-	102	1794	11349

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-Patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward	1	92	162	3042	4	72	163	3032	-	102	1794	11349
XII. Diseases of Infancy:												
160. Congenital Debility.....				2				2				9
161. Premature Birth.....				7		3		7				
162. Other affections of infancy.....				4		2		3		1	3	
163. Infant neglect (infants of three months or over)		1	2	38		6	2	33		6	2	87
XIII. Affections of Old Age:												
164. Senility -												3
Senile Dementia.....												
XIV. Affections produced by External Causes:												
165. Suicide by Poisoning.....												
166. Corrosive Poisoning (intentional).....				1				1				
167. Suicide by Gas Poisoning.												
168. Suicide by Hanging or Strangulation.....												1
169. Suicide by Drowning.....												
170. Suicide by Firearms.....												
171. Suicide by Cutting or Stabbing instruments.....				1				1				
172. Suicide by jumping from a height.....												
173. Suicide by crushing.....												
174. Other Suicides.....												
175. Food Poisoning -				6				6				2
Botulism.....												
176. Attacks of Poisonous Animals.....				7				7			1	
Snake Bite.....		3		1				4			4	2
Insect Bite.....											11	7
177. Other accidental poisonings.....				6		1		6				
178. Burns (by Fire).....		5		45		4		48		2	2	64
179. Burns (other than by Fire).....				25				23		2	3	30
Total carried forward....	1	101	164	3185	4	88	165	3173	-	113	1820	11554

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-Patients.	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward.	1	101	164	3185	4	88	165	3173	-	113	1820	11554
XIV. Affections produced by External Causes: (Contd.)												
180. Suffocation (accidental)												
181. Poisoning by Gas (accidental).....												
182. Drowning (accidental)...												
183. Wounds (by Firearms, war excepted).....				3		1		3			1	
184. Wounds (by cutting or stabbing instruments)...		7		157		2		161		3	15	293
185. Wounds (by Fall).....		2	4	40			4	41		1	18	42
186. Wounds (in Mines or Quarries).....		1		2				3				1
187. Wounds (by Machinery)...		3	4	7			4	10			6	1
188. Wounds (crushing, e.g. railway accidents, etc.)			4	6			4	6			7	7
189. Injuries inflicted by Animals, Bites, Kicks, etc.....		4	1	28			1	31		1	9	22
190. Wounds inflicted on Active Service.....												
191. Executions of civilians by belligerents.....												
192. (a) Over fatigue.....												1
(b) Hunger or Thirst....												
193. Exposure to Cold, Frost-bite, etc.....												
194. Exposure to Heat - Heatstroke.....												
Sunstroke.....											1	
195. Lightning Stroke.....				4				4				4
196. Electric Shock.....												
197. Murder by Firearms.....												
198. Murder by cutting or stabbing Instruments....												
199. Murder by other means...												
200. Infanticide (murder of an infant under one year)												
201. (a) Dislocation.....			1	5			1	5			3	7
(b) Sprain.....				15				15			30	68
(c) Fracture.....		6	1	114		4	1	110		10	10	70
202. Other external Injuries.				14				12		2		88
203. Deaths by Violence of unknown cause.....												
Total carried forward...	1	124	179	3580	4	95	180	3574	-	130	1920	12158

DISEASE	Cases remaining in hospital from previous year		Total admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year		Out-patients	
	E	A	E	A	E	A	E	A	E	A	E	A
Total brought forward.	1	124	179	3580	4	95	180	3574	-	130	1920	12158
XV. Ill-defined Diseases:												
204. Sudden death (cause unknown).....				1		1		1				
205. (a) Diseases not already specified or ill-defined -		8	4	33			4	41				22
Ascites.....												
Oedema.....				2		1		2				9
Asthenia.....											2	1
Shock.....												1
Hyperpyrexia.....												
(b) Malingering.....				1				1				1
XVI. Diseases, the total of which have not caused 10 Deaths:				23				23				
GRAND TOTAL.....	1	132	183	3640	4	97	184	3642	-	130	1922	12192
Attendants.....				277						11		
Re-attendances....											2352	9715

APPENDIX II.

METEOROLOGICAL OBSERVATIONS.

SWAZILAND 1948.

Station - Mbabane (Highveld)

Alt. 3800 feet

Month	Air Temperature °F				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days.
January	75.58	58.39	87.00	50.00	6.21	17
February	74.21	57.31	83.00	47.00	10.31	18
March	73.17	68.97	83.00	50.00	6.56	20
April	76.93	51.70	92.00	46.00	2.50	9
May	71.19	47.29	80.00	42.00	0.22	4
June	71.30	40.17	80.00	32.00	-	-
July	68.26	43.29	79.00	35.00	0.22	3
August	74.29	46.13	89.00	38.00	0.28	4
September	74.73	48.70	91.00	32.00	2.00	6
October	75.83	55.29	96.00	47.00	6.42	15
November	72.26	54.43	90.00	47.00	7.14	18
December	81.03	58.35	94.00	49.00	4.48	16
YEAR	74.07	52.67	87.00	42.92	46.33	130
				Average	56.46	
				Station - Bremersdorp. (Middleveld)		
January	82.90	64.30	91.60	56.40	4.98	13
February	81.60	63.60	92.80	54.00	4.02	13
March	81.20	64.30	94.00	59.20	3.42	16
April	80.50	58.00	91.00	51.00	.62	5
May	79.20	53.20	89.80	49.60	.35	1
June	76.80	49.20	89.80	38.00	-	-
July	76.00	52.90	85.20	47.00	.12	1
August	79.80	57.00	99.00	50.20	-	-
September	79.60	57.80	96.00	48.00	1.53	5
October	84.00	63.00	101.00	58.00	1.60	8
November	80.15	63.80	97.00	58.00	3.35	12
December	89.90	*	107.00	*	4.29	10
YEAR	80.97	58.83	94.52	51.76	24.28	84
				Average	33.78	

* Minimum Thermometer broken.

APPENDIX II (Continued)

METEOROLOGICAL OBSERVATIONS.

SWAZILAND 1948

Station - Hlatikulu (Highveld)

Alt. 3890 feet.

Month	Air Temperature(°F)				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days
January	Temperature readings were discontinued at the end of March, 1947.				5.43	11
February					9.37	5
March					6.78	8
April					1.41	4
May					-	-
June					-	-
July					0.17	2
August					0.05	1
September					3.73	8
October					4.00	12
November					6.86	19
December					4.39	14
YEAR					42.19	84
				Average	45.85	

	Station - Stegi (Lowveld)					
January	81.32	62.29	90.00	54.00	5.74	11
February	80.41	61.86	92.00	53.00	4.57	7
March	80.52	62.26	89.00	57.00	7.48	14
April	78.37	58.83	88.00	52.00	0.71	4
May	76.87	55.87	85.00	53.00	-	-
June	75.20	51.97	85.00	45.00	-	-
July	75.81	52.26	82.00	46.00	0.05	1
August	78.71	53.77	95.00	46.00	-	-
September					2.37	6
October	83.47	51.42	98.00	52.00	2.32	7
November	81.27	56.17	95.00	52.00	3.54	9
December	80.94	56.94	103.00	50.00	6.11	6
YEAR	79.35	56.69	91.09	50.00	32.89	65
				Average	29.61	