Annual medical and sanitary report / Swaziland.

SWAZILAND

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1956

HCP 8388

S W A Z I L A N D

ANNUAL MEDICAL AND SANITARY REPORT

FOR THE YEAR 1956.

I. ADMINISTRATION.

(a) Staff.

EUROPEAN

Director of Medical Services.
1 Malaria Medical Officer,
5 Medical Officers,
1 Medical Officer (Health),
1 District Surgeon (Part-time)
2 Pharmacist/Storekeepers
1 Matron
13 Nursing Sisters
1 Radiographer
2 Health Inspectors
1 Clerk
1 Lady Clerk
1 Laboratory Assistant
2 Handymen (one post vacant)

AFRICAN.

2 Medical Officers (one post vacant)
1 Senior Hospital Assistant
3 Hospital Assistants,
2 Dispensers
1 Pupil Dispenser
68 Nurses
2 Out-patient Attendants
3 Clerks
1 Laboratory Assistant
2 Ambulance Drivers
1 Wardmaster
14 Ward Attendants
11 Orderlies
2 Nurse Aides
5 Cooks
3 Assistant Cooks
1 Night Watchman
4 Hospital Groundsmen
13 Laundresses
2 Seamstresses
1 Office Messenger
1 Senior Malaria Assistant
1 Health Office Clerk
1 Lorry Driver

Appointments and Changes in European Staff.

Name	Office or Rank.	Date of Appointment	Date of Resignation	Date of Termination of Appointment.
Dr. M.J.Welman	Medical Officer		1. 1.56	
Miss P.M.Reardon	Nursing Sister		6. 2.56	
Miss J.Mansfield	Nursing Sister		29.2.56	
Miss E.M.Bailey	Matron	1. 3.56		
Dr.T.J. Malherbe	Medical Officer			1.3.56 Transfer to Kenya

(continued overleaf)

Appointments and Changes in European Staff (continued)

Name	Office or Rank	Date of Appointment	Date of Resignation	Date of Termination of Appointment
Mr.W. Palliser	Handyman			1.4.56 Transferred to P.W.D.
Mr. N.J.J.Swart	Health Inspector	12.5. 56		
Miss M. Maynard	Nursing Sister		12. 5.56	
Dr. R.D.Gauldie	Medical Officer (Health)	29.5.56		
Miss M. Moffat	Nursing Sister		2. 6.56	
Miss O. Horder	Nursing Sister		27. 6.56	
Miss J.M. van der Meulen	Nursing Sister	1. 7.56		
Dr. M.S. Compton	Medical Officer	17. 7.56		
Dr. E.R.D.Eastman Nagle	Medical Officer (Health)			22.7.56
Miss A.S. McCorkindale	Nursing Sister			Retirement 1.8.56
Miss A. McKillop	Nursing Sister	1. 9.56		
Mrs. D.V. Seeton	Nursing Sister	15.5.56	3. 9.56	
Mr.R.C.Fazackerley	Pharmacist-Storekeeper			18.9.56
Miss M.K.Irvine	Nursing Sister			21.10.56 Transferred to Kenya.
Miss M. Smith	Pharmacist/ Storekeeper	30.10.56		
Miss S. Todd	Nursing Sister	1. 11.56		
Miss S.J.Borgartz	Nursing Sister	1. 11.56	31.12.56	
Miss J. Bredell	Laboratory Assistant	On leave pending resignation with effect from 17.11.56		

Reliefs.

Name	Office or Rank	From	TO
Dr. D. Drew	Medical Officer	1. 1. 56	10. 3.56
		5. 4. 56	7. 4.56
		13. 4. 56	14. 4.56
		4. 5. 56	
		9. 7. 56	11. 7.56
		16. 7. 56	17. 7.56
		10. 9. 56	12. 9.56
		26.11. 56	30.11.56
		7.12. 56	12.12.56
		18.12. 56	22.12.56
		27.12. 56	28.12.56
Miss R. B. Sims	Lady Clerk	6. 1. 56	14. 1.56
Mrs. S.M. Dowling	Nursing Sister	3.2. 56	31. 7.56
Mrs. M. Baguley	Nursing Sister	6. 2. 56	27. 2.56
Mrs. P. McCarter	Nursing Sister	3. 4. 56	30. 4.56
Dr. Carrington	Medical Officer	12.3. 56	25. 3.56
		11.7. 56	14. 7.56
Mrs. J. I'Ons	Nursing Sister	20.5. 56	
Mrs. H. Steward	Nursing Sister	21.5. 56	22. 5.56
		30.12.56	31.12.56
Mrs. van der Veen	Nursing Sister	1. 8. 56	7. 10.56

(continued overleaf)

Malta.

Reliefs (continued)

Name	Office or Rank	From	To
Mrs. R. Heilgendorff	Nursing Sister	12.9.56 5.11.56	30.9.56 2.12.56
Mrs. D.V.Seeton	Nursing Sister	8.10.56 1.12.56	11.10.56 16.12.56
Mrs. B. Parker	Lady Clerk	4. 12.56	31.12.56

Distribution of European Medical and Nursing Staff, etc., on 31st December 1956.

Name.	Rank	Station
Dr. J.C.J. Callanan, O.B.E.	Director of Medical Services.	Mbabane
Dr. B. D. Whitworth	Medical Officer	Mbabane
Dr. L.E.D.F. Joubert	Medical Officer	Mbabane
Dr. M.S. Compton	Medical Officer	Mbabane
Miss E. M. Bailey	Matron	Mbabane
Mrs. J. Scogings	Nursing Sister	Mbabane
Miss J.M. van der Meulen	Nursing Sister	Mbabane
Miss S. Todd	Nursing Sister	Mbabane
Miss M. Smith	Pharmacist/Storekeeper	Mbabane
Miss R. J. O'Shea	Radiographer	Mbabane
Mr. W. Palliser (P.W.D.)	Handyman	Mbabane
Mrs. H. Perkins	Nursing Sister	Mankaiana
Dr. O. Arnheim	Medical Officer	Hlatikulu
Dr. H. Flack	Medical Officer	Hlatikulu
Mr. J. L. van der Vyver	Pharmacist/Storekeeper	Hlatikulu
Miss J. A. Wilson	Nursing Sister in Charge	Hlatikulu
Miss M. McKillop	Nursing Sister	Hlatikulu
Miss D. E. Burns	Nursing Sister	Hlatikulu
Miss M.A. von Wissell	Nursing Sister	Goedgegun
Miss A. Martin	Nursing Sister	Hluti
Dr. O. Mastbaum	Malaria Medical Officer	Bremersdorp
Dr. R. D. Gauldie	Medical Officer (Health)	Bremersdorp
Mr. G.J. van Eeden	Health Inspector	Bremersdorp
Mr. N.J.J. Swart	Health Inspector	Mbabane
Miss J. Bredell	Laboratory Assistant	On leave pending resignation
Miss C. Liell-Cock	Nursing Sister	On leave

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

(i) Proclamation No. 2 - The Swaziland Opium and Habit-forming Drugs (Amendment) Proclamation.

(ii) Proclamation No. 17 - The Swaziland Immigration Proclamation 1956.

(iii) Proclamation No. 33 - The Swaziland Medical, Dental and Pharmacy (Amendment) Proclamation, 1956.

(continued)

(iv) Proclamation No. 52 - The Swaziland Inquests (Amendment) Proclamation, 1956.
(v) High Commissioner's Notice No. 15 - The Swaziland Immigration Regulations 1956.
(vi) High Commissioner's Notice No. 110 - Amendment of Mbabane Township Regulations.
(vii) High Commissioner's Notice No. 111 - Amendment of Bremersdorp Township Regulations.
(viii) High Commissioner's Notice No. 112 - Amendment of Hlatikulu Township Regulations.
(ix) High Commissioner's Notice No. 112 - Amendment of Goedgegun Township Regulations.
(x) High Commissioner's Notice No. 114 - Amendment of Stegi Township Regulations.

(c) FINANCIAL.

Revenue. £

Hospital, Health Centre and other fees

Expenditure.

Personal Emoluments
Travelling Expenses
Allowances and Fees
Maintenance of Patients and purchase of medicines
Laboratory Services, S.A. Institute for Medical Research,
Maintenance of Lepers,
Maintenance of Lunatics,
Specialist Treatment for Indigents in Union Hospitals
Hospital Equipment
Uniforms, African Staff
Vaccinations
Drug Replacement
Subsidies for Medical Services:-
Church of the Nazerene Mission of South Africa £6,410,
Red Cross £75, Roman Catholic Mission £100, Our Lady of Sorrows School £150, Mahamba Mission £1,340, Catholic Mission Stegi £1,180, St. John's, Baragwanath £100
Anti-Malaria Measures
High Commission Territories Nursing Council, Travelling and other expenses,
Upkeep of grounds
Upkeep and Operation of X-ray Plants
Anti-Malaria Drugs for Sale
Transport of Stores
Transport of Silicosis and Leper Patients
Bilharzia Control Measures,
Upkeep of Vehicles and Electric Light Plant
Purchase of Equipment for Pigg's Peak Hospital and Hlatikulu Hospital Extensions
Contribution to C.D. & W. Schemes:-
Scheme Anti-Malaria Campaign & Public Health Measures
Scheme Leper Hospital

Total Expenditure on Medical and Sanitary Services.

Total Revenue of the Territory

The relationship of Medical Expenditure (excluding Colonial Development and Welfare Fund Expenditure) to the total Revenue of the Territory.

NOTE: Re: Section I (c) FINANCIAL

(continued)

The financial figures which are not available at the time of publication will be forwarded at a later date.

II. PUBLIC HEALTH.

(I) General.

(i) Dr. F.J.C. Cambournac, Director, Regional Office for Africa, (W.H.O.) and Professor Pampana visited Swaziland in July, and the former warmly congratulated the Department on the outstanding success which had been achieved in the field of malaria control, and stated that our programme might well be taken as a model for other territories.

(ii) Dr. C.S. Darke, M.D.,M.R.C.P.,M.R.C.S., Consulting Physician to City General Hospital, Sheffield, paid a welcome visit to the territory in September as a member of the Panel of Medical Visitors whose object it is to keep medical staffs in touch with developments in medical thought and practice.

(iii) Dr. Aziz, Professor of Tropical Medicine at the American University of Beirut, visited the territory in October, and evinced great interest in the progress made in disease control, notably malaria and bilharziasis.

(iv) Dr. Ordman, Superintendent, Allergy Laboratories, South African Institute for Medical Research, carried out a short investigation in September as part of a wider and more general study of the occurrence of bronchial asthma and vasomotor rhinitis in Southern Africa and its relation to climatic influences. This investigation was considered desirable because reports from time to time had indicated that respiratory allergy was unduly common in certain parts of the territory. The following are some of the impressions of physicians, patients and others:-

a. Asthma sufferers in Swaziland benefit on going to the Highveld or to the Coast.

b. Asthma sufferers do badly in Swaziland, e.g. patients from overseas who may not have had an attack since their departure thence and during their travel through the Union of South Africa will generally develop an attack on arrival in Swaziland.

c. People from Johannesburg and Reef in transit through Swaziland frequently develop severe asthma necessitating medical aid when staying over at Bremersdorp. Asthma may similarly be precipitated at Usutu Hot Springs.

d. A physician with experience in the United Kingdom and in Assam believes that asthma and vasomotor rhinitis are relatively more common in Mbabane.

e. A physician with experience in Nigeria and in Gambia is of opinion that asthma is relatively more common in the Africans of Swaziland

f. Mbabane is situated in the "allergic belt".

g. The following patient-reports are noted:

1. A sufferer from bronchial asthma in Mbabane obtains immediate relief at Lochiel or other Highveld towns near Swaziland.

2. A patient quite well in Basutoland and in Mafeking develops vasomotor rhinitis whilst travelling from Mbabane to Bremersdorp.

3. A patient with asthma in Bremersdorp remains well in Mbabane.

4. A patient quite well in Johannesburg develops asthma in Pigg's Peak.

It was noted that the following cases of bronchial asthma had been reported from the Mbabane and Hlatikulu Hospitals during the decade 1946-55:-

Europeans.

In-patients - 18 Out-patients - 208	}	226

Africans.

In-patients - 146 Out-patients - 782	}	928

These figures show that in the case of the two hospitals mentioned 23 European and 92 Africans were seen annually, but in view of the wide distribution of the population in the territory, and the reluctance of Africans generally to travel long distances for medical aid, it is reasonable to suppose that the figures available are not a true reflection of the incidence of Asthma. During the course of the investigation, which included botanical, meteorological and geological enquiries, 36 sufferers from respiratory allergy, mainly bronchial asthma, were studied clinically, and when necessary submitted to skin testing. The findings are being studied in relation to the wider problem of climate, and asthma in Southern Africa, and it has not, as yet, been possible for Dr. Ordman to come to any conclusions with regard to the factors which may be operating in the occurence of respiratory allergy in Swaziland, or even in connection with its alleged high local incidence. The department is deeply grateful to Dr. Ordman for the interest which he had taken in this matter, and it is hoped that his visit will encourage local practitioners to take a special note of cases of asthma and vasomotor rhinitis, both in European and Africans, especially in association with possible geographical and climatological factors, in order that a larger number of cases may in future become available for analysis.

(v) In January Dr. W. G. Davidson, Medical Officer, Swaziland Irrigation Scheme, reported three cases of Non-Venereal Treponematosis, and is of the opinion that the disease, which he had previously observed in 1954, is not uncommon in the native areas adjoining the C.D.C. Property.

Rabies.

The mass immunization of dogs has continued throughout the year and 4528 animals have been dealt with. The campaign will continue during 1957, when it is expected a total of some 11,000 will be reached.

II. Communicable Diseases.

(i) Malaria. During the 1955/56 transmission season an overall total of 102,762 huts were sprayed with residual insecticides. Of this number 27,028 received a second treatment, and only 2,452 were sprayed on three occasions during the season. 102,762 huts respresents a decrease of over 40,000 huts sprayed in comparison with 1954/55, and the reduction is attributable to the fact that imagocidal control was discontinued for the first time since 1950 in a large area in the middleveld, and that the number of spray-treatments per hut was less frequent than hitherto in some bushveld areas.

The residual insecticide employed was again Benzenehexachloride in the form of a 50% wettable powder with 10% gama content, the surface concentration aimed at being 25 mgm per square foot. In addition to this routine measure, an experiment with Dieldrin, using a 50% wettable powder in a surface concentration of 35 mgm was repeated in two large areas in the bushveld, the huts receiving one treatment only at the commencment of the Malaria season.

(continued)

A comparison of malaria transmission in areas treated with Dieldrin and B.H.C. revealed no significant difference, the results of blood examinations being as follows:-

	Dieldrin.	B.H.C.
No. examined	1081	2779
Parasite positive	9	19
Parasite rate	0.83%	0.7%

The malaria position in the territory was assessed by blood surveys as in previous years, and the findings are demonstrated in the following tables:-

Area	No. examined.
Bushveld areas	4,388
Middleveld areas	407
Irrigation Schemes	471
Area under chemoprophy-laxis	205.
Extra-territorial areas	360
TOTAL	5,837

Results of Blood Surveys in Bushveld Areas.

Age Group	No. examined	Positive	Parasite Rate
1 - 12 months	1,322	0	0.0%
1 - 5 years	2,248	15	0.7%
6 - 16 years	818	17	2.1%
TOTAL			0.7%

Results of Blood Surveys on Irrigation Areas.

Age Group	No. examined	Positive	Parasite Rate
1 - 12 months	112	0	0.0%
1 - 5 years	244	9	3.6%
6 - 16 years	115	6	5.0%
TOTAL			3.1%

No positive cases were discovered in the middleveld. Although the total parasite rate on Irrigation Schemes was considerably higher than that in other parts of the bushveld, it is of interest to note that for the first time in the history of the territory, the infant rate was nil throughout the season.

It is questionable whether all the infections in older children were actually acquired on the Irrigation projects, and it is probable that some were obtained during visits to Portuguese territory.

The following table gives the cases of malaria treated by the Malaria Control Unit:-

1956.	Field Staff	Laboratory
January	3	0
February	3	0
March	8	0
April	12	0
May	6	0
June	1	0
July	0	0
August	2	0
September	2	0
October	7	0
November	6	0
December	2	1
Total	52	1
1955	105	0
1954	65	0
1953	335	2
1952	8	0
1951	181	7
1950	798	9

15 cases of Parasitaemia were observed at the Swaziland Irrigation Scheme between January and June.

All but two of the parasite positive cases treated at Irrigation Schemes subsequent to June, and 6 of the total of 19 cases were immigrants from Portuguese East Africa.

A minor experiment in Chemoprophylaxis was carried out in a small area of 30 huts at the southern tip of Swaziland, where residual spraying had proved ineffective owing to geographical factors. This strip of land is separated from Mozambique territory and Maputaland by the Usutu River, and its inhabitants constantly visit areas in the adjoining territory in which no control is exercised. A remarkable reduction in malaria incidence was achieved through the exhibition of small dose (1 tablet of 25 mg) of "Daraprim" (B.W.& Co.) at monthly intervals. The investigation is to be continued during the 1956/57 transmission season with a view to ascertaining whether it is possible to eradicate malaria under the existing circumstances by the use of pyrimethamine.

In view of the progress which has been made towards attaining total elimination of malaria in Swaziland, routine malaria control is being curtailed in many bushveld areas during the coming season. In areas which have hitherto been sprayed, surveillance teams are operating, and the position with regard to vector breeding and malaria incidence will be carefully observed throughout the period. Along the Eastern and Southern borders, a belt of approximately 20 miles wide, including the Irrigation Schemes, is continuing to be sprayed with residual insecticides (B.H.C.).

The parasite rates during the non-transmission season of 1956 in the bushveld, middleveld, the pyrimethamine area, and the irrigation schemes, were 0.25%, 0.0%, 3.9% and 3.8% respectively.

(ii) Smallpox. No case of smallpox was notified, but 45,301 were vaccinated during the first three months of the year, in the following areas:-

Month.	Native Area	Place	Primary Vaccination.	Re-vaccinated	Total Vaccinated
January	20	Lushikishini	219	390	609
	20	Lushikishini	344	222	566
	21	Mashobeni	12	45	57
	Eur.	Gege	267	804	1071
	"	Seyendle	133	515	648
	17	Bahwini	71	85	156
	"	Bahwini	193	144	337
	19	Mahlangatsha	61	93	154
	"	Mahlangatsha	235	442	677
	17	Badeni	343	724	1067
	"	Badeni	447	640	1087
	Eur.	Mankaiana	323	494	817
	16	Ncabaneni	223	354	577
	"	Kandinda	412	357	769
	"	Kandinda	317	250	567
February	6	Dwalile	71	123	194
	"	Dwalile	99	152	251
	"	Malandela	371	376	747
	8	Dlangeni	431	657	1088
	Eur.	Msunduza	570	1289	1859
	"	Mbabane	426	631	1057
	"	Sidwashini	219	541	760
	7	Enkaba	470	997	1467
	9	Motshane	565	982	1547
March	Eur.	Havelock Mine	1374	2061	3435
	"	Pigg's Peak Area	5027	10218	15245
	10	Tshaneni	543	792	1335
	10	Sipocoseni5	530	707	1237
	Eur.	Mhlambanyati	637	1450	2087
	16	Mawelawela	488	505	993
	Eur.	Usutu Mission	263	301	564
	11	Lobamba	774	1502	2276
	TOTAL		16458	28843	45301

Early in November a case of Alastrim was diagnosed in the Hlatikulu area and 77 close contacts were vaccinated.

Staff changes and the difficulty in obtaining the services of reliable vaccinators have hampered the progress of the campaign, but arrangements have been made to re-vaccinate in the Hlatikulu District in 1957. Instructions regarding the routine vaccination of Police, Prisoners, and Medical Department Staff have been reiterated.

(iii) Schistosomiasis.

(Hospital Cases : In-patients 80
Out-patients 187)

298 cases were dealt with in the main District Hospitals during 1956, there being a decrease of 27.5% as compared with the previous year, and in fact the lowest figure on record. The number of cases treated during the last ten years are given below, and it will be observed that there has been a diminution in the incidence of this disease since 1954:-

1955	414
1954	719
1953	606
1952	650
1951	604
1950	642
1949	424
1948	530
1947	354
1946	470

The case distribution as between districts was as follows, the 1955 incidence being shown in parenthesis:-

Mbabane-Mankaiana-Pigg's Peak District	38.4%	(37.0%)
Hlatikulu District	35.6%	(40.7%)
Manzini-Stegi District	25.8%	(22.1%)

Bilharziasis Control in the Nzimnene Catchment area was continued throughout the year, and all water courses and dams within the zone were treated with Copper Sulphate at intervals of approximately eight weeks. Each sulphation was preceded by the usual clearance of vegetation, and the cutting of drains in certain areas, and accompanied by a systematic snail survey.

After sulphation the snail survey was repeated and all collections were recorded (vide Table on page 11), physopsis and biomphalaria snails being tested for infectivity. The following observations were made:-

(a) There was a marked decrease in the snail population during the first six months of the year, and during the winter months of June and July, the number of snails reached a very low level.

(b) There was a steep increase in snail density in August, when 90% of the snails captured were very young, and none were found to shed cercariae. As sulphation progressed towards the end of the year the number of snails again declined considerably.

(c) The infectivity rate was extremely low throughout the year, though in January 44 out of 46 snails collected at the end of the Bremersdorp Town Canal, were found to shed cercariae. As this portion of the canal passes through a cattle-grazing area, which is frequented by few human beings, schistosoma bovis infection may have been responsible for the findings.

(d) None of the biomphalaris snails were found to be infected.

URINARY SURVEY : NZIMNENE CATCHMENT AREA : JULY 1956.

Area	No. of children examined	No. Infected	Percentage Infected.
Mzimnene	169	47	27.8
Impelave	49	10	20.4
Logoba	202	37	18.3
Lwandle	86	12	13.9
Moneni	76	11	14.4
Madonsa	45	8	17.7
Maliaduma	79	17	21.5
Total	706	142	20.1

These figures divided into sexes and age groups gave the following results:-

	TABLE I. Before sulphation January '56				TABLE I. After sulphation March '56				TABLE II. Before sulphation May 1956				TABLE II. After sulphation June 1956			
	Physopsis	Limnae	Bicomphalaria	Bulinus forskali	Physopsis infected (shedding cercariae)	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected
Mzimnene River : above weir	6	18			Nil															
" " to Madonza																				
" " to Brickfield																				
" " to Jabavu		38		1																
" " Showgrounds																				
" " to Abattoir																				
" " below Abattoir																				
Magola Stream																				
Mahlabatini upper stream																				
" lower stream	8	35			Nil	19			1		22			1						
Hlambamsoka upper stream	1	74			Nil															
" lower stream		7																		
Madonsa upper stream																				
" lower stream	10				Nil	8	3		Nil		6			Nil						
" Fraser tributary						15	4		2		5	1		Nil						
Jabavu streams	22	108			Nil		22				12									
Town Canal	46	143			44						7		1	2						
Williams farm furrows		20									8	5	2	1	Nil					
" " dams	14	8			Nil	4	12		Nil		9									
S.D. Stream above bridge	1	21			Nil															
" " below bridge																				
R.C. Farm furrow	2	25	1	Nil							10	12								
Pendray's farm furrows																				
Manzini stream											16									
Ghobaghoba stream	16		6	Nil		4			Nil		6									
Vet. camp upper stream	23	7		1							8									
" " lower stream																				
Club Stream		63				1	41		10	Nil										
Mgubudhla stream	3	16			Nil						2	2		Nil		4	13			Nil
" Murphy's furrow		32																		
Ncome stream																				
Mawutane (Trib. to Mzinene)		9				2	2		Nil											
TOTALS	202	627	7	1	45	53	84	10	3		50	69	14	2	3	4	13			

	TABLE III. Before sulphation July 1956					TABLE III. After sulphation July 1956				TABLE IV. Before sulphation AUGUST '56				TABLE IV. After sulphation Septem.'56.				TABLE V. Before sulphation Novem.'56.				TABLE V. After. sulphation Decem.'56.			
	Physopsis	Limnae	Bicomphalaria	Bulinus forskali	Physopsis infected (shedding cercariae)	Physopsis	Limnae	Bicomphalaria	Bulinus forskali	Physopsis infected	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected	Physopsis	Limnae	Biomphalaria	Bulinus forskali	Physopsis infected
Mzimnene River : above weir																								
" " to Madonza																								
" " to Brickfield			6								64	1		Nil			22			Nil				
" " to Jabavu			1	15	Nil		1																	
" " Showgrounds											1	165		Nil										
" " to Abattoir																4	6	5				13		
" " below Abattoir												231				8	4							
Magola Stream																								
Mahlabatini upper stream																42		6	Nil		2	4		Nil
" lower stream																55		8	Nil					1 Nil
Hlambamsoka upper stream			20				4					286					15					82		49
" lower stream																								
Madonsa upper stream																								
" lower stream											8	12		Nil							7	6		Nil
" Fraser tributary												2												
Jabavu streams											1	3		Nil			49				26	34		Nil 5 15 Nil
Town Canal			2		Nil							15					2	15						2 5 Nil
Williams farm furrows												30												8
" " dams																								3
S.D. Stream above bridge			2																					
" " below bridge																	15					44		11
R.C. Farm furrow											12	2	44				1					38		21
Pendray's farm furrows												2												
Manzini stream											2	66		1	Nil		6	1				25		34
Ghobaghoba stream			11		Nil						11			Nil							9		Nil	
Vet. camp upper stream			2	12	Nil																			
" " lower stream																								
Club Stream											11			Nil										
Mgubudhla stream											46	21		Nil							16		Nil	2 Nil
" Murphy's furrow			5	2	Nil							6					15							
Ncome stream											17	54		Nil			12							
Mawutane (Trib. to Mzinene)																								
TOTALS			21	57	Nil		5				161	1017	44	1	Nil	91	127	10	35	Nil	82	208	8	Nil 10 138 8 Nil

Age Group	MALES			FEMALES		
	No. Examined.	No. Infected	Percentage Infected.	No. Examined.	No. Infected	Percentage Infected.
2 - 10 years	181	36	20	138	22	16
11- 20 "	48	31	64.6	81	31	38.2
21- 30 "	15	2	13.3	74	11	14.8
30 & over	54	5	9.2	115	4	3.5

The following results were obtained during the course of the investigation into the incidence and distribution of Schistosomaisis in the territory:-

Month	Place	No. examined	No. infected S.mansoni	No. infected S.haematobin	Total
U February	Kraal near Madonsa Stream N.A.11	46	-	6	13%
U March	Schools (x)				
	Little Flower	154	-	73	47%
	Central	58	-	19	33%
	Nazerene	73	-	31	43%
	Methodist	2	-	1	50%
	St. Michael's	4	-	0	0%
	Zombodi	77	-	24	31%
	Lozita	21	-	13	62%
	Matapha	57	-	36	63%
UBS	Maqudulwini	30	-	1	3.3%
UBS	Edwaleni	60	-	34	57%

(x) - on retesting after treatment with "Nilodin" B.D.& Co.
U - Urine Examination
B - Rectal Biopsy
S - Faeces

SURVEY OF SNAILS AT NGONINI ESTATE, PIGG'S PEAK DISTRICT (JUNE, 1956)

Species of Physopsis and Biomphalaria were found at seven scattered points and the following results were obtained:-

Snail	No. examined.	No. Positive	% Positive
Physopsis	85	3	3.5%
Biomphalaria	338	0	0.0%
Limnae	73	0	0.0%

The survey will be repeated in the summer months of 1957, when it is hoped control measures can be instituted in collaboration with the management of the Estate.

SNAIL SURVEY AT MALKERNS IRRIGATION SCHEME (JUNE-JULY 1956)

The incidence of snails in the Malkerns area was determined by means of a survey of all watercourses throughout the irrigation project. All Physopsis snails found were examined for infectivity. Of a total of 1079 collected, 138 (13%) were found to be infected, and some 90% of the snails were from the Tung Oils Farm at the end of one of the canals. The survey will be repeated during the summer months of 1957.

SNAIL IDENTIFICATION.

The Council of Scientific and Industrial Research requested our co-operation in establishing an identification system for fresh water snails in Southern Africa. In this connection eight batches of snails were forwarded to the Department of Zoology of the Potchefstroom University and the provisional identification included the following species:-

PLANORBIS (GYRAULUS) COSTULATUS
CLEOPATRA MORRELLII (PREST)
BULIHOS TROPICUS
BULINUS VERREAUXII
PHYSOPHSIS GLOBOSUS
BULINUS (PYRGOPHYSA) FORSKALLI

Further collections will be forwarded for identification as they become available.

SNAIL SURVEY, STEGI (JUNE 1956)

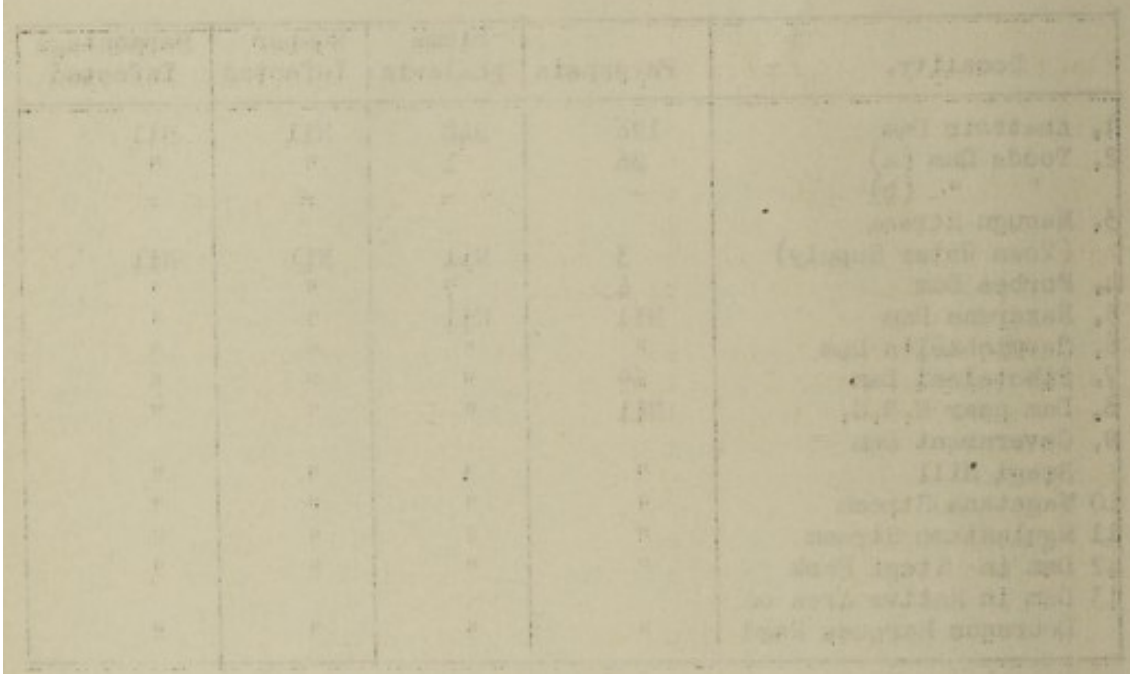
Locality.	Physopsis	Biom-phalaria	Number Infected	Percentage Infected
1. Abattoir Dam	126	248	Nil	Nil
2. Todds Dam (a)	26	1	"	"
" " (b)	-	-	-	-
3. Magugu Stream (Town Water Supply)	3	Nil	Nil	Nil
4. Forbes Dam	4	7	"	"
5. Nazerene Dam	Nil	Nil	"	"
6. Carmichael's Dam	"	"	"	"
7. Siboteleni Dam	69	"	"	"
8. Dam near N.R.C.	Nil	"	"	"
9. Government Dam Stegi Hill	"	"	"	"
10 Magatana Stream	"	"	"	"
11 Mgulantamo Stream	"	"	"	"
12 Dam in Stegi Park	"	"	"	"
13 Dam in Native Area on Lourenco Marques Road	"	"	"	"

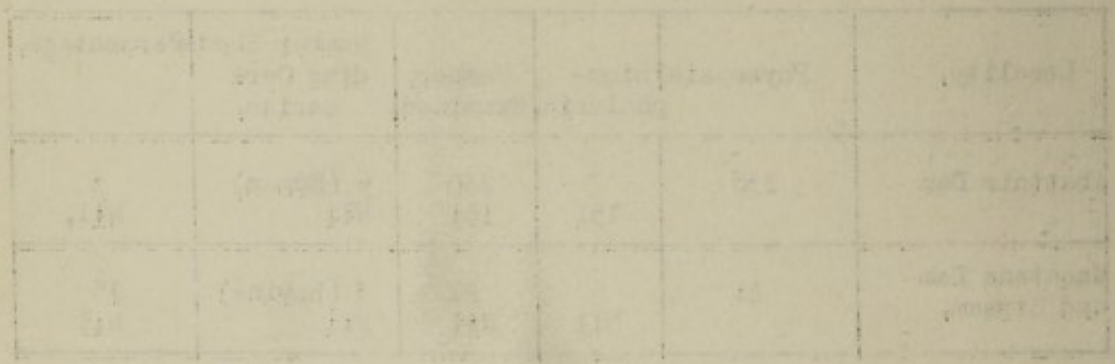
As these findings appeared to be most unusual in an area where the incidence of Urinary Bilharziasis is constantly reported as being high, a repeat Survey was undertaken in November, 1956, with the following results.

Locality.	Physopsis.	Biom-phalaria.	Number. Examined.	Number Shedding Cercariae.	Percentage.
Abattoir Dam	230	- 151	230 151	6 (Human) Nil	3 Nil.
Maqatana Dam and Stream.	21	- Nil	21 Nil	3 (Bovine) Nil	15 Nil

All other Dams and Streams were Negative for Snails.

Infected Snails shedding Human cercariae were found only in one area, viz. the Abattoir Dam, and from investigation it would appear that very few children swim in this dam. It is, therefore, difficult to understand why about one third of the children in the Schools suffer from the disease (see following table). Further





investigations will be undertaken with the object of finding the source of infection.

URINARY SURVEY, STEGI (NOVEMBER 1956)

School	No. of children examined.	Number Infected	Percentage Infected
Nazerene Mission School	112	35	31%
Good Shepherd Mission School	112	33	29.4%
Ebenezer Mission School	112	22	19.6%
	336	90	27%

Further surveys will be conducted at a later date.

SCHISTOSOMA INFECTION AMONGST CATTLE.

During the period March - December 1956, a number of cattle slaughtered at the Bremersdorp Abattoir were examined for Schistosoma infection, the worms being detected and removed from the mesenteric veins of the animal.

The object of this survey was to determine the infectivity rate of cattle in the bushveld areas as compared with those which were reared in the surrounding areas of Bremersdorp which is covered by our pilot Bilharzia control scheme.

The information obtained up to date has, however, not been very helpful in determining the effectiveness of our control because the area covered is too small in relation to the movement of cattle. Furthermore animals are constantly changing hands and are moved by speculators to numerous sale yards, before they come to be slaughtered.

This survey has, however, revealed that 72% of a total of the cattle slaughtered at Bremersdorp were infected with Schistosoma.

The following table indicates the distribution of animals examined:-

Place of Origin	Positive	Negative
Bremersdorp	36	12
Tulwane	41	19
Croydon	114	16
Pendray's Farm	10	5
Bennett's Farm (Mpofu)	14	Nil
Tung Oils Farm	9	Nil
Gundwim	3	Nil
Sherwood Ranch	3	1
Sipofaneni	22	3
McNabbs Farm	11	1
Scott's Farm	Nil	1
Red Tiger Ranch	1	3
Mliba Ranch	2	Nil
Mpaka	3	Nil
Usutu Sale Yard	2	1
Matapa	1	Nil
St. Josephs	1	Nil
	3	Nil
Totals	276 (72%)	62

(iv) Tuberculosis (Pulmonary).

Hospital Cases : 212 In-patients.
266 Out-patients.
478

478 cases were dealt with at the main hospitals in the territory as compared with the numbers shown below in respect of previous years:-

1955	:	444
1954	:	401
1953	:	376
1952	:	304
1951	:	304
1950	:	396
1949	:	281
1948	:	253
1947	:	196
1946	:	300

In addition to the foregoing, 68 new cases were treated at the Mahamba Methodist Hospital, and 10 (20 `Out-patients were dealt with at the Good Shepherd Mission Hospital at Stegi.

The case distribution as between the main District groups was as follows:-

Manzini-Stegi District	62.4%
Mbabane, Mankaiana, Pigg's Peak District	26.7%
Hlatikulu District	10.7%

The percentage of tuberculosis admissions on total admissions at four hospitals in the territory is given in the following table:-

Hospital.	Total Admissions.	Pulmonary	Non Pulmonary	Total Tuberculosis admissions.	% of Tuberculosis admissions on total admissions.			
					1953	1954	1955	1956
Mbabane	3546	80	49	129	2.6	2.4	3.1	3.6
Hlatikulu	1701	33	19	49	2.3	3.0	4.6	2.0
Mankaiana	1785	15	13	28	0.4	0.4	1.2	1.5
Raleigh Fitkin Memorial Hospital	2647	99	20	119	4.8	5.6	8.6	4.4

A twelve-bedded Tuberculosis Block, with separate staff quarters, at Hlatikulu Hospital, was completed in March, and the construction of a similar unit at Mbabane is expected to commence in March 1957.

A W.H.O. Tuberculosis Assessment Team under the leadership of Dr. E. H. Kjolbye commenced work in the territory in October, and its investigations will be completed by the end of February 1957.

The free issue of P.A.S. and I.N.H. to Medical Missions from Government stocks for the treatment of necessitious cases was carried out on a greatly increased scale during 1956.

(v) Dysentery.

(Hospital Cases : In-patients 244
Out-patients 375)

The incidence of diseases in this group was identical with that of 1955, which was some 14% greater than in 1954, the year in which the prevalence of these diseases was the lowest on record.

The relative prevalence of the disease in its various forms was as follows, the figures for the previous year being shown in brackets:-

Amoebic Dysentery	68.9%	(40.2%)
Bacillary Dysentery	30.6%	(59.4%)
Type Undifferentated	0.3%	(0.2%)

The proportion of cases notified from the various districts is given below:-

Mbabane-Mankaiana-Pigg's Peak Districts	44.0
Manzini-Stegi District	43.9
Hlatikulu District	11.9

The continued low incidence of dysentery in Southern Swaziland is still inexplicable.

(vi) Gastro-enteritis and Colitis.

(Hospital cases	(a)	Between 4 weeks & 2 years	290 In-patients
			1430 Out-patients
	(b)	Age 2 years and over	73 In-patients
			1077 Out-patients
	(c)	Chronic Enteritis and ulcerative colitis	0 In-patient
			0 Out-patient

The increase in the prevalence of these diseases which was noted in 1955 continued to progress, the incidence being 31.7% greater than in the preceeding year. The recrudesence may, as previously stated, be due to the development of resistance by flies to residual spraying.

The frequency which which these diseases were encountered in the various districts is indicated below:-

	1956	1955	1954	1953	1952
Manzini-Stegi District	28.4%	26.7%	21.9%	23.9%	47.8%
Mbabane-Pigg's Peak-Mankaiana District	33.3%	39.2%	50.1%	35.7%	27.9%
Hlatikulu District	38.1%	34.0%	27.9%	40.3%	24.1%

(vii) Venereal Diseases.

The incidence of Syphilis, assessed on the basis of cases attending for treatment at medical stations throughout the entire territory, declined by 16.3% as compared with 1955, which had already shown a decrease of 20% on the previous year. The present year's figure is the lowest recorded since 1946. There has been no increase in the prevalence of Gonorrhoea which has maintained the level attained in 1955. Veneral diseases in general have declined by 26.2% as compared with 1955, but this is mainly attributable to the increasing use of "one shot" treatment with P.A.M., in treponematosis.

The number of fresh cases treated during the last eleven years is shown in the following table:-

Year	Syphilis	Gonorrhoea	Other Venereal Diseases	Total
1946	3041	649	16	3076
1947	2988	936	18	3942
1948	3212	1043	19	4274
1949	4449	1296	31	5776
1950	4140	1761	25	5926
1951	4608	1934	-	6542
1952	4349	2096	19	6464
1953	3908	1973	17	4898
1954	4980	1884	15	5988
1955	3270	2420	-	5670
1956	2736	2407	3	5146

The variations in the incidence of Venereal Diseases in various parts of the territory are shown below:-

	Syphilis		Gonorrhoea	
	Increase	Decrease	Increase	Decrease
Mbabane	-	29.6%	40.0%	-
Mankaiana	-	20.0%	3.5%	-
Mbabane-Pigg's Peak District	12.6%	-	95.1%	-
Hlatikulu Hospital	-	16.9%	-	12.7%
Goedgegun	-	33.7%	69.9%	-
Bremersdorp	-	8.9%	-	2.7%
Manzini-Stegi District (General)	-	27.3%	7.1%	-
Stegi (Nazerene Health Centre)	10.7%	-	23.6%	-
Stegi (District Surgeon)	-	45.1%	-	83.6%
Mahamba Area	-	38.9%	180.7%	-

The distribution of Venereal Diseases as between districts and institutions throughout the territory, is shown in the Table on page 18.

(viii) Typhoid and Paratyphoid Fever.

Sixty six cases, with no deaths, were reported from the Mbabane-Pigg's Peak-Mankaiana (44 cases), Manzini-Stegi (16 cases), and Hlatikulu Districts (6 cases), as compared with 60 cases with two deaths in 1955 and 187 cases during the preceding year. As in previous years the disease distribution was sporadic.

(ix) Diphtheria.

There were 10 cases, with 2 deaths, as compared with 10 cases and 4 deaths in 1955. 4 cases were reported from the Mbabane area, 3 from Manzini and 2 from the Hlatikulu area.

(x) Whooping Cough.

The incidence of pertussis was 33.5% less than in 1955, and its case distribution was as shown below:-

I.	Mbabane Hospital.	Mankaiana Cottage Hospital.	Other Health Centres Mbabane-Pigg's Peak-Mankaiana Districts (Northern District)	Hlatikulu Hospital	Health Centres Hlatikulu (Southern District)	Arthur Matthews Methodist Hospital, Mahamba	Raleigh Fitkin Memorial Hospital, Bremersdorp.	Health Centres Manzini-Stegi (Central District)	District Surgeon, Stegi.	Lesters Health Centre	Lubuli-Gollel	Swaziland Irrigation Scheme (S.D.C) (January-February only)	Nomahasha	Big Bend	Total
I. SYPHILIS.															
(A) Early Syphilis (i) Primary	21	33	-	82	-	-	87	-	-	-	-	-	-	-	223
(ii) Secondary	191	70	-	89	-	-	89	-	-	-	-	-	-	-	439
(iii) Early Latent (Asymptomatic)	244	86	-	19	-	-	3	-	-	-	-	-	-	-	352
(B) Late Syphilis (i) Skin, mucosal, bone muscle, joint	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(ii) Cardiovascular	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(iii) Neurosyphilis	50	-	-	-	-	-	-	-	-	-	-	-	-	-	50
(iv) Late Latent (Asymptomatic)	16	-	-	8	-	-	2	-	-	-	-	-	-	-	26
(C) Congenital (i) Early (under 2 years of age)	17	22	-	15	-	-	11	-	-	-	-	-	-	-	65
(ii) Late (over 2 years of age)	8	2	-	-	-	-	-	-	-	-	-	-	-	-	10
(D) Undifferentiated	-	-	293	-	569	105	-	369	146	27	45	7	3	7	1571
TOTAL	547	213	293	213	569	105	192	369	146	27	45	7	3	7	2736
II. GONORRHOEA. (i) Acute	532	154	240	134	532	292	82	277	31	9	61	9	2	5	2360
(ii) Chronic	-	19	-	-	-	-	28	-	-	-	-	-	-	-	47
TOTAL	532	173	240	134	532	292	110	277	31	9	61	9	2	5	2407
III. OTHER VENEREAL DISEASES.	-	-	-	-	-	-	3	-	-	-	-	-	-	-	3
IV. RE-ATTENDANCES.															
Syphilis	2716	1366	1441	364	1076	734	1212	1495	482	23	47	15	-	-	10951
Gonorrhoea	243	282	72	284	422	-	116	142	14	4	27	9			1615
Other Venereal Diseases	-	-	-	-	-	-	2	-	-	-	-	-			2
TOTAL RE-ATTENDANCES	2959	1648	1523	648	1498	734	1330	1637	476	27	74	14	-	-	12568

District.	No. of cases.	Deaths.
Mbabane-Pigg's Peak-Mankaiana District	143	-
Manzini District	53	-
Hlatikulu District	56	-
Havelock Mine (Pigg's Peak District)	-	-
TOTAL	252	-

(xi) Acute Poliomyelitis.

Only three cases of poliomyelitis were notified, as compared with 13 in 1955. Vaccine sufficient for the first inoculation of 518 children under the age of 16 years was provided by the Poliomyelitis Research Foundation Laboratories in consignments issued in September (120 doses) and October (398 doses), and further supplies are expected to be available for the second inoculation early in 1957.

(xii) Measles.

302 cases were reported, as compared with 276 and 139 in 1955 and 1954 respectively. The relative frequency of the disease in various areas during the past six years is shown in the following table:-

District	1956.	1955	1954	1953	1952	1951
Manzini District	97	60	40	273	50	14
Mbabane, Pigg's Peak, Mankaiana District	81	112	13	138	37	58
Hlatikulu District	24	83	6	135	12	8
Havelock Mine	100	21	80	27	87	15
TOTAL	302	276	149	273	186	95

(xiii) Chicken-pox.

140 cases were notified, as compared with 116 in 1955, and 65 in 1954. The distribution of cases was as follows:-

District	Cases
Mbabane	20
Manzini	39
Havelock	20
Hlatikulu	61
Total	140

(xiv) Relapsing Fever.

No case was diagnosed during the year under review.

(xv) Tick Typhus.

Only three cases were notified during the year, 2 being derived from Mbabane and one from the Manzini District.

(xvi) Influenza.

The incidence of this disease was 41.4% greater than in 1956, and, as usual, its prevalence was greatest in the area served by Mbabane Hospital.

The case distribution in various parts of Swaziland is indicated below:-

Mbabane-Pigg's Peak-Mankaiana District	870 cases.
Hlatikulu District	405 "
Manzini District	153 "
Havelock Mine	84 "

The prevalence of the disease was greatest in August-September, as in many previous years.

(xvii) Cerebro-spinal Meningitis.

Three cases, with one death, were notified, as compared with 9 with four deaths in 1955 and 13 with three deaths in 1954. Two cases occurred in the Mbabane area and one at the Havelock Mine.

(xviii) Epidemic Parotitis.

66 cases were reported, as compared with 118 in 1955, and the incidence in various areas was as follows:-

Havelock Mine	45
Manzini Area	16
Mbabane Area	5
Hlatikulu Area	0

(xix) Infectious Mononucleosis.

No cases were reported during 1956.

(xx) Leprosy.

The staff of the Mbuluzi Leper Hospital consisted of a Medical Superintendent (non-resident), an European matron, an African nurse, a chaplain-liason officer, and a female teacher.

The number of In-patients on the 31st December 1956, was 43, i.e. 13 adult males, 19 adult females, 6 male and 5 female children, as compared with 49 in 1955, and 51 in 1954. The average number of inmates was 39.5, as against 55.9 in 1955, a decrease of 29.3%.

Health of Patients.

The general health of the patients showed no deviation from the normal pattern during the year under review.

Additions to Population.

	Males	Females	Total
Admissions	18	12	30
Re-admissions	2	4	6
Totals	20	16	36

(Including 4 non-infected persons - new borns)

(xvi) Influenza.

(xvii) Cerebro-spinal fever.

(xviii) Puerperal fever.

(xix) Infective Hepatitis.

(xx) Other.

(xxi) Deaths.

	Males	Females	Total
Under 1 year	10	11	21
1 and under 5 years	2	2	4
5 and under 15 years			
15 and under 25 years			
25 and under 45 years			
45 and under 65 years			
65 and under 75 years			
75 and over			
Totals	20	18	38

(Including 4 non-civilians outside the area)

Losses in Population.

	Males	Females	Totals
Deaths	-	1	1
Desertions	-	-	-
Discharges Including non-infected persons - new borns)	17	24	41
TOTALS	17	25	42

Origin of Patients Admitted.

District.	Males	Females	Total	%
'Ibabane	4	3	7	19.4
Mankaiana	6	7	13	36.2
Bremersdorp	2	1	3	8.3
Pigg's Peak	7	5	12	33.3
Hlatikulu	1	-	1	2.8
Total	20	16	36	

(Including 4 non-infected persons - new borns).

Duration of Disease before Admission.

Duration	Admissions	Percentage
0 - 1 years	17	47.2
1 - 2 years	1	2.8
2 - 3 years	-	-
3 - 4 years	5	13.9
4 - 5 years	3	8.3
5 plus	6	16.7
Non-infected persons new born	4	11.1
Total	36	

Classification on Admission.

Classification	Admissions	Percentage
Lepromatous	7	19.4
Neural	24	66.6
Combined Neural and Lepromatous	1	2.8
Non-infected persons infants	4	11.2
Totals	36	

Classification according to sex;

Classification	Male	Female	Total	Percentage
Lepromatous	4	3	7	19.4
Neural	13	11	24	66.6
Neural and lepromatous	-	1	1	2.8
Non-infected persons (infants)	3	1	4	11.2
Totals	20	16	36	

Average age on admission: 21.5 years

Proportion of children to total admissions.

There were 12 admissions of children under 16 years of age, out of a total of 32 cases admitted, i.e. 37.5%.

Treatment: (General)

There were 14,549 attendances at the Hospital Dispensary, as compared with 18,250 in 1955, and 14,925 in 1954.

36 patients were admitted to hospital, the total number of in-patient days being 4.900 as compared with 3,780 in 1955, and 2,234 in 1954. The conditions for which patients were admitted were as follows:-

Lepra reaction	13
Tropic ulcers	8
Observation	4
Arthritis	2
Blindness	2
Pregnancy	2
Asthma	1
Dysentery	1
Paralysis	1
Senility	1
Cerebral affection	1

Laboratory Examinations.

197 smears from patients were examined for the presence of B. leprae, with the following results:-

Type	Positive		Negative.		Total
	Nasal	Skin	Nasal	Skin	
Lepromatous	-	24	-	39	60
Neural	-	2	-	119	121
Neural & lepromatous	-	6	-	10	16
Totals		32		165	197

Vital Statistics.

The preliminary figures for the 1956 census are given below:-

Race	Area or District.		Total	Grand Totals
European	Mbabane	Urban Area	1092	
		District	423	1515
	Stegi	Urban Area	224	
		District	403	627
	Mankaiana	District	162	162
	Hlatikulu	Urban Area	96	
		Goedgegun Urban Area	227	
		District	1290	1613
	Manzini	Urban Area	652	
		District	524	1176
	Pigg's Peak	Urban Area	100	
		Havelock Mine	426	
		District	313	839
GRAND TOTAL				5932
Coloured	Mbabane	Urban Area	125	
		District	39	164
	Stegi	Urban Area	125	
		District	100	225
	Mankaiana	District	37	37
	Hlatikulu	Urban Area	6	
		Goedgegun Urban Area	20	
		District	506	532
	Manzini	Urban Area	95	
		District	271	366
	Pigg's Peak	District	67	67
GRAND TOTAL				1391

	District	Swazi	Foreign	Totals.
Africans	Mbabane	27424	83	27507
	Stegi	23778	903	24681
	Mankaiana	33058	271	33329
	Hlatikulu	77684	204	77888
	Manzini	43861	126	43987
	Pigg's Peak	25267	1883	27150
TOTALS		231072	3470	234542

	% increase. in 1946 over 1936.	% increase in 1956 over 1946.
European	16.8	85.3
Coloured	5.6	88.0
Swazis	18.2	27.4

Total European Population	5932
Total European Births	81
Total European Deaths	19
Birth rate per 1000	13.6
Infant Mortality Rate	12.3

A table showing the causes of death is given below:-

Cause of Death.	Number of deaths.
Diseases of the heart, and other diseases of the circulatory system.	7
Violence	3
Carcinoma	2
Gastro-enteritis	2
Senility	2
Suicide	1
Premature Birth	1
Unknown	1
TOTAL	19

Registration is not compulsory in the case of the Non-European population.

III. HYGIENE AND SANITATION.

A. (i) Preventative Measures.

(a) Malaria. During the 1955/56 transmission season 102,762 huts were treated with residual insecticide, as compared with 121,087 in 1954, 154,585 in 1953, 73,000 in 1952, 36,550 in 1951, and 23,000 in 1950. Some 15,000 huts were dealt with during the 1956/57 transmission season by the end of the calendar year, and it is estimated that the total will not exceed 50,000 during the present season.

(b) Smallpox. The interrupted mass vaccination campaign is to be resumed during the last quarter of the present financial year. Routine vaccination was carried out as usual in the main centres of population.

(c) Typhoid and Paratyphoid and other Salmonella Infections.

All cases reported during the year were sporadic in distribution, and investigations into the origin of the cases were inconclusive in every instance. It is assumed that the housefly is the main agent in the dissemination of the disease.

(d) Diphtheria and Whooping Cough. Immunization against these diseases was normally undertaken at the request of parents, and no mass inoculation on even a limited scale was undertaken.

(e) Schistosomiasis. The routine use of molluscide in the Mzimnene catchment area has materially reduced the snail population in the area, and provision has been made for the introduction of a comprehensive control programme when surveys and other investigations which are at present being conducted are further advanced. Preliminary surveys at the Swaziland Irrigation Scheme (C.D.C), Big Bend and Malkern's Irrigation Schemes have shown that a prolific breeding of snail vectors is, as anticipated, taking place in these areas. The method of continuous drip with molluscicides at the inlets to canals is at present under investigation, and the adoption in this territory of the system of control of snails which has been introduced with such success in the canals of the Gezira Irrigated Areas of the Sudan is envisaged.

(ii) General Measures of Sanitation.

(a) Extensive fly resistance to the chlorinated hydrocarbon insecticides continues to be experienced, and a new residual insecticide (organic phosphorus of low toxicity to man) is at present under trial locally. While it is too early to judge results, the residual effects so far obtained are, unfortunately, not very promising.

(b) Rats and Rodents. Several complaints regarding rodent infestation of houses in Bremersdorp. have been investigated, and measures have been taken to eradicate the pests.

(c) Dairies and Milk Shops. Marked progress has been made towards attaining clean and wholesome milk supplies for the townships of Bremersdorp and Mbabane. The premises of milk producers have been inspected at frequent intervals, and, where necessary, advice has been given regarding the production and delivery of milk in a hygienic manner. With the continued co-operation of the Dairy farmers, milk supplies should continue to improve, and steps are being taken to extend the campaign for clean milk to other townships in the territory.

(d) Water Supplies. The automatic chlorinator for the new piped water supply for Mbabane introduced on 1st March 1955, has not yet been put into operation, and in spite of satisfactory bacteriological reports on samples, the supply cannot be regarded as safe from the public health standpoint, in view of the possible danger of contamination.

Attention having been drawn to the fact that the water from this supply, which is distributed in pipes made of asbestos-cement, was producing an astringent effect on the skin, and that glass vessels in which boiled water was placed developed a deposit which rendered the glass opaque, systematic daily pH readings were taken over a period of months and it was found that the values ranged between 10 - 11+, which are in excess of the maximum set by the South African Bureau of Standards. As it was then believed that these high pH values were mainly due to high lime dosing which was being carried out by hand, as as the degree of alkalinity of the water was regarded as deleterous to health, it was advised that the lime-dosing should be discontinued. Although the cessation of lime-dosing (13.8.56) was followed by a slow and progressive decline in the pH value, alkalinity was still in excess (9.2 min) of the prescribed limit by the end of the year, and as late as December readings of 11 were being recorded in certain parts of town.

(The analyst's report on a specimen taken from the Mbabane Water Supply in April gave the following results:-

No.	865 Standpipe at Gaol,
Lab. No.	W163/56
Odour	None
Colour	None
Turbidity	Clear
Precipitate	None
pH at 20°C	9.0
Dionic conductance at 20°C	45.

(continued)

PARTS PER MILLION PARTS OF WATER

Solids (105°C)	40
Sodium (Na)	8
Calcium (Ca)	6
Magnesium (Mg)	1
Sodium Bicarbonate	Nil
Sodium Carbonate	Nil
Salt Amnonia	Nil
Protein Ammonia	Nil
Oxygen absorption (4 hours at 27°C	0.09
Perm. Hardness as $CaCO_3$	5
Temp. Hardness as $CaCO_3$	15
Nitrate (NO_3)	Nil
Nitrite (NO_3)	Nil
Chloride (Cl)	5
Sulphate (SO_4)	Nil
Carbonate (CO_3)	9
Bicarbonate (HCO_3)	18
Fluorine (F)	0.20
Iodine (I)	-
Iron (Fe)	Nil)

Consulting Engineers are being employed to investigate the matter, which is of engineering and public health significance.

In October, an analysis of the water from the stream in the drainage area of the Mpohlonjeni Cattle Dip, Mbabane, showed no evidence of the presence of D.D.T.,B.H.C., or arsenic, though a definite connection between the dip and the rivulet was established in 1954, when B.H.C.(0.004 ppm) was detected in a water sample from the latter source. The abolition of this dip is recommended.

The analysis of a water sample from a borehole sunk by the Geological Survey Department in the Forbes Reef area gave the following results, and though the high saline ammonia content indicated pollution, bacteriological examination showed the complete absence of presumptive and faecal B. coli, and only 3 viable organisms per ml:-

No.	193/56
Lab. No.	W198/56
Odour	None
Colour	None
Turbidity	Clear
Sediment	None
pH at 20°C	7.6
Dionic Conductivity at 20°C	120

PARTS PER MILLION PARTS OF WATER.

Total Solids (105°C)	96
Sodium (Na)	7
Calcium (Ca)	12
Magnesium (Mg)	10
Sod. Bicarbonate	Nil
Sod. Carbonate	Nil
Saline Ammonia	0.40
Albuminoid Ammonia	0.02
Oxygen absorbed (4 hours at 27°C)	1.50
Perm. Hardness as $CaCO_3$	Nil
Temp. Hardness as $CaCO_3$	70

(continued

Nitrate (NO_3)	Nil
Nitrite (NO_2)	Nil
Chloride (Cl)	7
Sulphate (SO_4)	5
Carbonate (CO_3)	Nil
Bicarbonate (HCO_3)	85
Fluorine (F)	0.20
Iodine (I)	-

No improvement has been made in the purification system of the Bremersdorp Watersupply, and as a consequence unboiled water from this source must be regarded as unsafe for drinking purposes. During the dry season an acute shortage of water was experienced, and it became necessary for the Local Authority to conserve supplies by imposing restrictions on the watering of gardens. The shortage is due to the needs arising from a progressive increase in the township's population, for which the present supply is regarded as inadequate and a new scheme is under investigation. This project would include a new purification plant and storage facilities, and would provide an adequate supply for many years to come. It is proposed to erect this new purification plant on high ground to the left of the Stegi Road, from which point water can be distributed by gravity to the new extensions to the township. Under the present system lack of height at the reservoir leaves many houses without water during the peak hours of consumption, and with the new siting this difficulty will be overcome. Pending the new system being brought into operation, and with a view to overcoming the seasonal water shortage, it is proposed to convert one of the existing storage reservoirs into a sand filter. This will provide an additional 30,000 gallons per day, and as the existing pressure filters are unable to cope with the demands made upon them, the sand filter will be of material assistance.

The Stegi watersupply is of doubtful purity, and a water sample taken immediately prior to chlorination showed a very high degree of faecal contamination. Should chlorination be inadequate at any time, the supply would be dangerous, and through lack of proper supervision, this supply must be regarded as unsafe.

The Hlatikulu and Goedgegun watersupplies remain unchanged, and as no proper purification system is provided the water is unsafe for domestic use.

Routine bacteriological examinations of piped water supplies were carried out at quarterly intervals, the results being reported to the Director of Public Works and Local Authorities.

(e) Conservancy and Refuse Disposal. In the Urban Area of Bremersdorp, the sanitary services continue to function satisfactorily under the control of the Town Inspector. The replacement of bucket latrines by septic tanks is steadily progressing, and the night soil disposal area is maintained in a sanitary state. In Mbabane the proposed refuse disposal service is to be put into operation early in 1957.

(f) Drainage. Owing to the development which is taking place in Mbabane and Bremersdorp, the present system of disposal of sewage and waste water by means of septic tanks and french drains is becoming increasingly difficult, and the position regarding drainage at Mbabane Hospital is steadily deteriorating year by year, and has now reached a critical stage. It has, therefore, been proposed that a Consulting Engineer should be appointed to investigate the matter with a view to the installation of a sewage disposal system, with the purification plants

so sited as to serve the needs of the Hospital (300 beds), the commercial area of the town, large communities such as St. Mark's School, and such other developments of the sewage system as in his opinion would be needed in the foreseeable future.

(iii) School Hygiene.

The schoolchildren at St. Mark's School, the Trade's School, Mbabane, the Swazi National School, Matapha, the Evelyn Baring High School, Goedgegun, the European School, Bremersdorp, and the Government School at Stegi were medically examined, and sanitary inspections were carried out at the majority of the boarding schools in the territory. The School Authorities were advised regarding the elimination of insanitary conditions whenever such were discovered.

(iv) Labour Conditions.

Labour employed on large scale undertakings such as the Havelock Mine, Swaziland Irrigation Scheme (C.D.), the Irrigation Schemes at Big Bend and the timber plantations are adequately housed. Aqua Privies on the Southern Rhodesian Medical Department's model have been constructed at various compounds and function very satisfactorily. They are regarded as the ideal form of latrine from African labour, and give excellent service if properly supervised. In the Urban Areas, the housing position remains unsatisfactory. The locations are grossly overcrowded, and squatters camps are developing in an indiscriminate and uncontrolled fashion in the peri-urban areas of every township. This unrestricted extension of primitive housing conditions without regard for the elementary principles of sanitation is strongly deprecated by this department, as it fosters the dissemination of diseases which we are endeavouring to combat.

(v) Buildings.

A considerable amount of building construction has taken place in the Urban Areas of Mbabane and Bremersdorp during the year, and several dwellings have been renovated and modernised. 73 building plans, the estimated value of which was £172,000 were scrutinised by the Health Office staff before approval by the Local Authorities. Routine inspections of all buildings and drainage operations under onstruction were carried out by the Health Inspectors. In Bremersdorp seven new houses, constructed by the South African Railways Administration, are nearing completion, and the Catholic Mission is erecting a Girls School and Dormitories to the value of £8,000. The Methodist Church Hall is also in course of construction. A Eurafrican township in the vicinity of St. Michael's School has been planned by the Local Authority, but the implementation of the scheme is delayed by the inadequacy of the township water supply. Six three-bedroomed houses for European Officials were constructed at Pigg's Peak (1), Hluti (1), Goedgegun (2) and Bremersdorp (2), and a block containing three double and six single flats was erected at Mbabane. 8 African standard type houses were erected at Sandhla, and 7 are under construction at Matapha (3), Lozita (2) and Nomahasha (2). 10 new houses for Policemen were provided at Mbabane, extensions were made to 5 existing buildings, occupied by officials of this class, and 10 are in course of construction.

(vi) Food in relation to disease.

Trade premises were inspected at regular intervals, in the urban areas, and unsound foodstuffs and rodent-contaminated articles were condemned and destroyed.

The number of inspections are detailed below:-

	Mbabane Section.	Bremersdorp Section
General Dealers	70	147
Butcheries	50	73
Government Slaughterhouses	147	62
Resturants	-	42
Bakeries	22	5
Hotels	31	8
African Eating Houses	3	8
Dairies	17	10
Factories and Garages	54	-
Markets	16	-
Milk Depots	4	4
Hairdressers	6	2
Mealie Mills	-	8
Mineral Water Factories	10	9

The under-mentioned foodstuffs were condemned as unfit for human consumption:-

24 x 2 lbs. tins of Jam
9 x 11 lbs. tins of Cooked Ham
60 x 1 lb. tins of Fish
19 x 2 lbs. tins of Canned Fruit
15 x 12 oz. tins of Meat
27 x 1½ lbs. tins of Vegetables,
3 x 1½ lb. tins of Pickles
2 x 14 oz. tins of Condensed Milk

(b) Meat Supplies. Regular daily meat inspections were carried out by Health Inspectors at Bremersdorp and Mbabane, and in co-operation with the Veterinary Department, Stock Inspectors have carried out these duties at Stegi, Goedgegun and Hlatikulu. At Bremersdorp, one butchery is equipped with deep freezing facilities for the treatment of meat infected with cysticercosis bovis, whereas other members of the trade are required to boil lightly diseased meat before it is exposed for sale to the public. Heavily infected carcases are destroyed. The uncontrolled slaughter and sale of infected meat in the rural areas is becoming a serious menace to the economy and welfare of the territory, and cattle farmers are burdened with a total loss of more than 10% of beef exported to the Union markets, as a result of infection.

BREMERSDORP ABATTOIRS

1956 Month	Number Examined			Number Passed			Number Rejected			Number Frozen			Number Cooked			Number Destroyed		
	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S
January	109	31	34	105	31	34	4	-	-	4	-	-	-	-	-	-	-	-
February	108	35	19	103	34	19	5	1	-	4	-	-	1	-	-	-	1	-
March	103	24	37	99	23	37	4	1	-	3	-	-	1	-	-	-	1	-
April	105	25	28	97	25	28	8	-	-	5	-	-	2	-	-	1	-	-
May	104	24	27	99	24	27	5	-	-	2	-	-	3	-	-	-	-	-
June	118	29	27	117	29	27	1	-	-	1	-	-	-	-	-	-	-	-
July	121	31	49	113	29	49	8	2	-	7	-	-	1	-	-	-	2	-
August	132	32	30	119	31	30	13	1	-	8	-	-	4	-	-	1	1	-
Septenber	138	24	36	126	24	36	12	-	-	5	-	-	5	-	-	2	-	-
October	158	36	49	146	36	49	12	-	-	11	-	-	1	-	-	-	-	-
November	132	44	46	129	44	46	3	-	-	1	-	-	2	-	-	-	-	-
December	138	57	51	126	56	51	12	1	-	7	-	-	5	-	-	-	1	-
Totals	1466	392	433	1379	386	433	87	6	-	58	-	-	25	-	-	4	6	-

MBABANE ABATTOIR.

Month	Number Examined			Number Passed			Number Rejected			Number Frozen			Number Cooked			Number Destroyed.		
	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S
January	71	5	18	69	5	18	2	-	-	-	-	-	2	-	-	-	-	-
February	65	13	32	65	11	32	-	2	-	-	-	-	-	-	-	-	2	-
March	64	25	33	64	24	33	-	1	-	-	-	-	-	-	-	-	1	-
April	61	28	27	59	27	27	2	1	-	-	-	-	2	-	-	-	1	-
May	25	8	15	24	8	15	1	-	-	-	-	-	1	-	-	-	1	-
June	49	11	21	48	10	21	1	1	-	-	-	-	1	-	-	-	1	-
July	54	25	34	51	24	34	3	1	-	-	-	-	2	-	-	1	1	-
August	53	12	28	47	11	28	6	1	-	-	-	-	5	-	-	1	1	-
Septenber	47	17	38	42	12	38	5	5	-	-	-	-	1	-	-	4	5	-
October	46	8	30	43	8	30	3	-	-	-	-	-	3	-	-	-	-	-
November	52	4	24	46	3	24	6	1	-	-	-	-	6	-	-	-	1	-
December	59	13	35	54	10	35	5	3	-	-	-	-	5	-	-	-	3	-
Totals	646	169	335	613	154	335	34	16	-	-	-	-	28	-	-	6	16	-

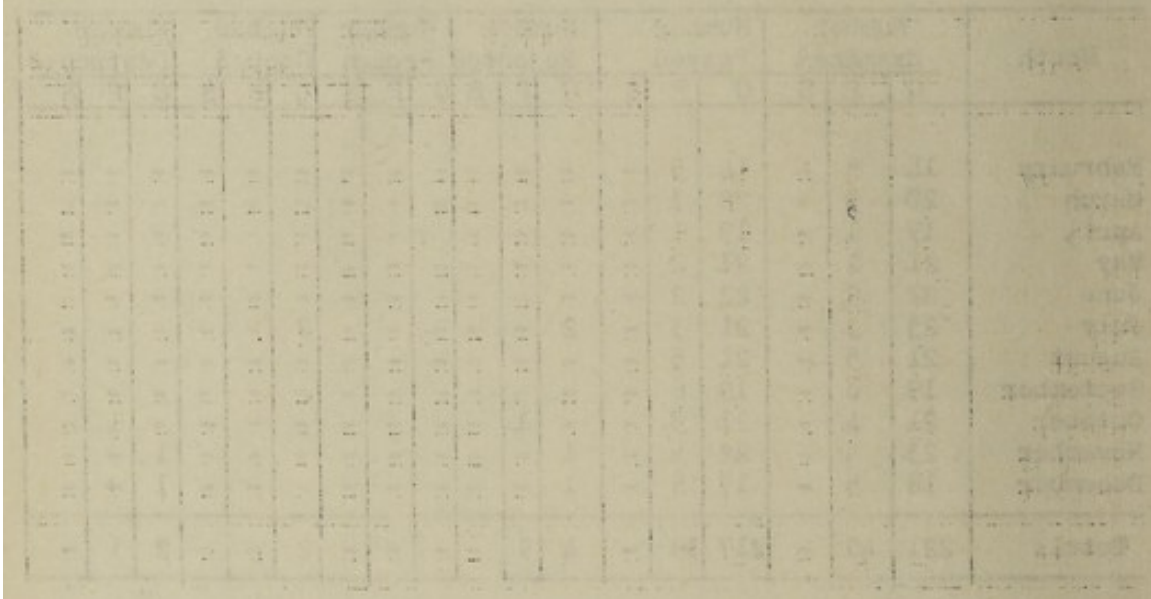
HLATIKULU ABATTOIR.

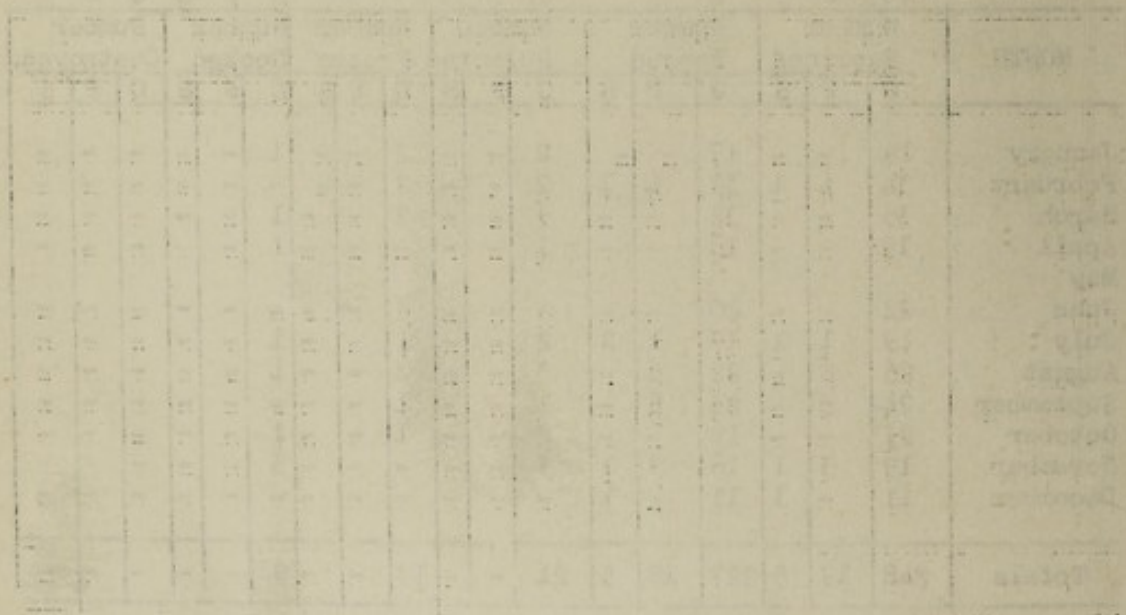
Month	Number Examined			Number Passed			Number Rejected			Number Frozen			Number Cooked			Number Destroyed		
	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S
February	14	5	-	14	5	-	-	-	-	-	-	-	-	-	-	-	-	-
March	20	3	-	20	3	-	-	-	-	-	-	-	-	-	-	-	-	-
April	19	1	-	19	1	-	-	-	-	-	-	-	-	-	-	-	-	-
May	21	2	-	21	2	-	-	-	-	-	-	-	-	-	-	-	-	-
June	22	2	-	22	2	-	-	-	-	-	-	-	-	-	-	-	-	-
July	23	3	-	21	3	-	2	-	-	-	-	-	2	-	-	-	-	-
August	21	5	-	21	5	-	-	-	-	-	-	-	-	-	-	-	-	-
September	19	6	-	19	6	-	-	-	-	-	-	-	-	-	-	-	-	-
October	21	4	-	21	3	-	-	1	-	-	-	-	-	-	-	-	1	-
November	23	4	-	22	4	-	1	-	-	-	-	-	-	-	-	1	-	-
December	18	5	-	17	5	-	1	-	-	-	-	-	-	-	-	1	-	-
Totals	221	40	-	217	39	-	4	1	-	-	-	-	2	-	-	2	1	-

STEGI ABATTOIR

MONTH	Number Examined			Number Passed			Number Rejected			Number Frozen			Number Cooked			Number Destroyed.		
	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S	C	P	S
January	19	-	-	17	-	-	2	-	-	2	-	-	1	-	-	-	-	-
February	34	4	1	32	4	1	2	-	-	2	-	-	-	-	-	-	-	-
March	35	-	-	32	-	-	3	-	-	2	-	-	1	-	-	-	-	-
April	19	-	-	18	-	-	1	-	-	-	-	-	1	-	-	-	-	-
May																		
June	22	-	-	20	-	-	2	-	-	2	-	-	-	-	-	-	-	-
July	19	1	2	17	1	2	2	-	-	1	-	-	1	-	-	-	-	-
August	25	6	-	22	6	-	3	-	-	2	-	-	1	-	-	-	-	-
September	24	5	-	23	5	-	1	-	-	1	-	-	-	-	-	-	-	-
October	21	-	-	19	-	-	2	-	-	1	-	-	1	-	-	-	-	-
November	19	3	1	16	3	1	3	-	-	-	-	-	3	-	-	-	-	-
December	11	-	1	11	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Totals	248	19	5	227	19	5	21	-	-	13	-	-	9	-	-	-	-	-

"C" = Cattle P = Pigs S = Sheep





The incidence of measles at the various stations was as follows, that for 1955 being shown in brackets:-

Bremersdorp	6.0%	(10.0%)
Stegi	8.0%	(8.0%)
Hlatikulu	1.8%	(4.0%)
Mbabane	5.0%	(0.8%)
Goedgegun	0.0%	(0.3%)

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

The African Cattle Guards, in training at the Mpisi Government Farm, received a course of lectures on a wide range of subjects, including smallpox, tuberculosis, bilharziasis, venereal diseases, typhoid fever, diphtheria, malaria, diaries and milk, water, meat inspection, and general hygiene and sanitation. The lectures were given by the Medical Officer (Health) and Health Inspector. In Mbabane posters, dealing with various aspects of hygiene and sanitation, have been placed in prominent positions in the town, and have proved of considerable value in increasing public interest in disease prevention.

The Departmental Exhibit at the Bremersdorp Show was of an unusually high standard reflecting the greatest credit on the members of the staff concerned in its preparation and management. The exhibit dealing with Bilharzia proved very popular with the Public, who appear to be becoming Bilharzia-conscious. It consisted of an aquarium with living vectors of the disease, test tubes with living cercariae, bilharzia worms, posters depicting the cycle of the disease, and photographs showing methods of control.

Other interesting exhibits were: Malaria Control (photographs), measles in meat and its relation to taeniasis, the dangers of unsound foodstuffs, insects transmitting disease to man, and the value of vaccination against smallpox.

Other aspects of Health and Sanitation were depicted by a number of self-explanatory posters, prominence being given to those dealing with tuberculosis, venereal disease, and other communicable diseases. Pamphlets dealing with all these diseases were placed beneath the posters and the public were encouraged to take copies for personal retention. Both posters and pamphlets were printed in English, Afrikaans and Zulu.

C. Training of Personnel.

The following table gives the number of students in training at the Ainsworth Dickson Nursing School at the Raleigh Fitkin Memorial Hospital, Bremersdorp, as at the 31st December 1956. The corresponding figures for the previous year are given in brackets:-

Year.	Nurses.	Midwives	Total
1st	15 (15)	-	15
2nd	12 (9)	-	12
3rd	7 (8)	-	7
4th	6 (14)	-	6
Totals	40	-	40

The results of the Examinations conducted in June and November are given below:-

Certificate	Preliminary		Final	
	Passed	Failed	Passed	Failed
High Commission Territories Nursing Council				
General Medical and Surgical	-	-	6	2
Midwifery Part I	-	-	-	-
Midwifery Part II	-	-	-	-
Swaziland Executive Nursing Committee.	4	4	5	5

IV. MATERNITY AND CHILD WELFARE

(a) Mbabane, Pigg's Peak and Mankaiana Districts.

There were 158 European and 475 African attendances at the weekly ante-natal clinic at Mbabane Hospital, at which 536 confinements were conducted, as compared with 616 in 1955, 522 in 1954, 369 in 1953, and 268 in 1952.

The number of maternity cases dealt with at Health Centres is shown in the following table, previous years records being included for purposes of comparison:-

Health Centre.	No. of cases			
	1956	1955	1954	1953
Mankaiana	139	191	120	98
Horo	21	23	20	22
Covernment Farm	-	12	18	22
Hebron (closed)	-	-	3	5

(b) Manzini and Stegi District.

Raleigh Fitkin Memorial Hospital, Bremersdorp.

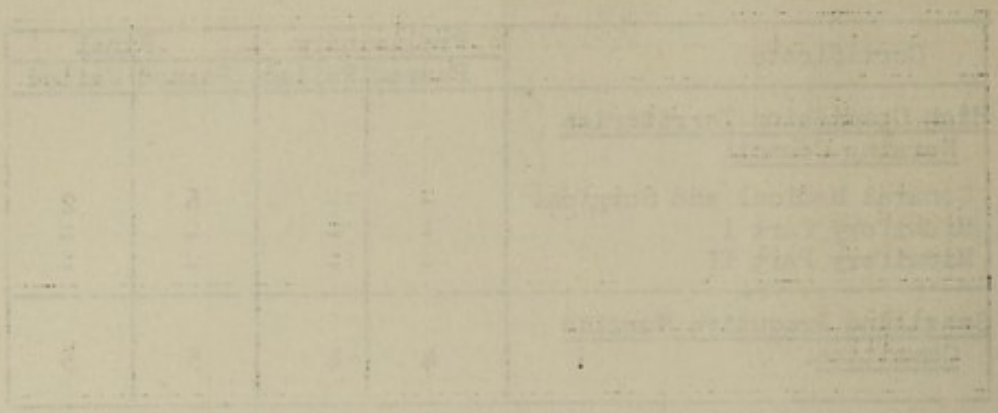
Ante-natal attendances	2995 (2593)
Child Welfare attendances	2554 (3799)
Confinements	454 (453)

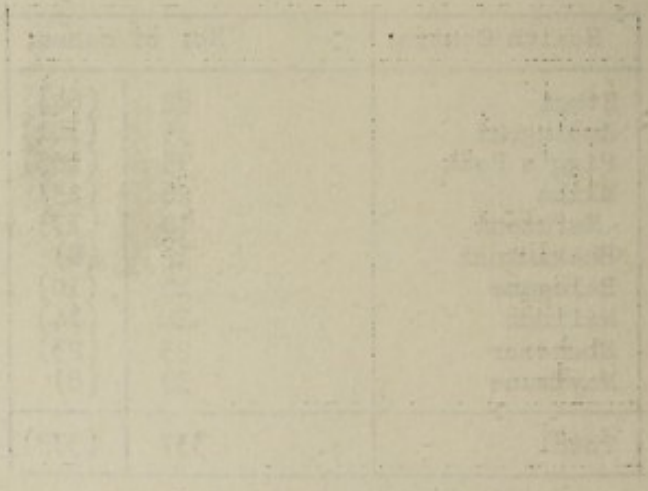
(Note: 1955 figures shown in brackets).

Table showing the number of Maternity cases at Nazerene Mission Health Centres.

Health Centre.	No. of cases.	
Stegi	82	(64)
Endingeni	35	(101)
Pigg's Peak	95	(105)
Mliba	26	(23)
Mafuteni	10	(17)
Bhekinkosi	12	(8)
Balegane	10	(10)
Malinda	14	(14)
Ebenezer	23	(23)
Mayiwane	39	(8)
Total	337	(373) +

+ = 1955 figures in brackets.





(c) Hlatikulu District.

Clinic	Ante-Natal Attendances.	Confinements.
Hlatikulu Hospital	545 (27)	143 (5)
Goedgegun	536 (10)	9 (2)
Mhlotsheni	115 (2)	3
Hluti	138	-
Sipofaneni	185	-
St. Philips	385	16
Lubuli	169	-
Gollel	95	-
Our Lady of Sorrows	1024	2
Totals	3192 (39)	173 (7)

(The figures in brackets denote Europeans)

V. HOSPITALS AND DISPENSARIES (HEALTH CENTRES)

(a) Mbabane Hospital.

Number of beds (European)	10
Number of beds (African)	98
Number of cots	20
	128

No new staff quarters were provided during the current year, but a 12 bedded Tuberculosis Block is at present under construction.

The following works were carried out at the Mbabane Hospital, and completed by March:-

(i) Additional sewing room adjacent to the Laundry,
(ii) Handyman/Attendant's workshop in the same block
(iii) Paving and banking at the rear of the Hospital Building.
(iv) Additional French drains. These drains were installed to cope with the heavy drainage flow from the hospital. The whole drainage system, which depends on septic tanks is a matter of some concern and has been the subject of a special investigation, which is now in hand with a view to the installation of a complete sewage disposal system which is warranted by the present size and probably future extensions at the hospital.
(v) A new drying shed was also erected at the rear of the hospital to give covered drying facilities for washing during the frequent periods of wet weather.
(vi) Allowance has been made for fencing off the whole Hospital area, including additional land recently acquired for the proposed new T.B. Ward Block. This is to be put in hand in March 1957.
(vii) Allowance has also been made for the erection of proper entrance steps and site work to the main Hospital. Entrance to replace the existing earth ramp, which is unsatisfactory and dangerous. This also is to be completed before March 1957.

Daily average number of In-patients (European)	5.2
Daily average number of In-patients (Eurafrican)	0.3
Daily average number of In-patients (African)	138.5

The expansion of work in the In-patient section of the hospital during the last eleven years, is indicated in the following table:-

Year	Daily average No. of In-patients		
	European	Eurafrican	African
1946	0.9	0.15	74.9
1947	0.65	0.42	69.6
1948	0.88	0.65	71.1
1949	1.2	0.59	79.5
1950	1.2	1.1	72.2
1951	1.3	0.8	88.2
1952	3.2	0.5	101.0
1953	5.0	0.6	108.2
1954	5.6	1.22	123.9
1955	5.4	0.3	144.1
1956	5.2	0.3	138.5
% increase over 1946.	477%	100%	84.9%

Staff

2 European Medical Officers,
1 African Medical Officer,
1 Matron
4 European Nursing Sisters.
1 Pharmacist/Storekeeper,
1 Radiographer
1 Senion Hospital Assistant,
1 African Dispenser,
1 African Wardmaster,
24 African Nurses,
1 Dispensary Orderly
2 Out-patient Attendants (Nurses)
7 Ward Attendants
4 Orderlies
1 Nurse Aide.

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Admissions	2287	2217	2210	2237	1966	2491	2557	2795	3248	3269	3546(287)
Deaths	41	28	51	55	57	49	72	80	100	93	105 (5)
Confinements	170	303	339	299	276	318	268	372	522	616	535 (26)
Operations	215	193	297	398	441	389	555	772	693	759	797 (316)
Out-patients (new cases)	8916	8547	8945	9422	12893	14159	13287	15348	15763	16754	16410 (3072)
Out-patients re-attendances	5913	6953	9173	11472	14059	15496	13722	16912	17997	13680	15314 (3965)

(Note: European cases, which are included in the totals, are shown in brackets.)

The decline in European Out-patient attendances which has been evident since 1953 has been checked, and work in this section of the hospital is again increasing.

European Out-patients.

Station.		Average per month					
		New cases		Re-attendances.		New cases	
		Male	Female	Male	Female	Officials.	Non-officials.
Mbabane	1946	53.2	56.9	33.9	51.3	-	-
	1947	55.3	54.6	54.5	54.3	-	-
	1948	61.6	57.4	68.2	82.1	16.6%	80.3%
	1949	86.1	77.6	67.6	106.6	18.7%	81.3%
	1950	125.1	102.2	136.5	142.5	18.7%	81.2%
	1951	128.3	108.3	128.6	123.5	11.4%	88.5%
	1952	124.1	101.0	140.7	123.8	13.8%	86.1%
	1953	156.3	129.3	187.1	214.0	13.4%	86.2%
	1954	142.3	124.3	132.9	208.0	15 6%	84.3%
	1955	113.1	100.0	143.7	145.1	18.5%	81.3%
	1956	160.0	113.2	151.7	156.1	18.7%	81.0%
Bremersdorp	1952	62.5	55.6	19.5	17.9	12.3%	87.6%
	1953	64.5	42.6	14.9	8.4	5.4%	94.5%
	1954	58.3	44.6	18.2	15.0	5.5%	94.4%
	1955	53.0	48.3	25.3	20.6	7.0%	93.0%
	1956	44.3	44.2	10.1	12.3	4.7%	95.2%
Hlatikulu	1952	16.4	15.3	44.1	22.7	9.1%	90.8%
	1953	21.8	22.2	25.0	28.4	15.2%	84.7%
	1954	19.7	16.4	14.9	14.7	18.9%	81.1%
	1955	14.2	12.9	7.2	12.2	12.3%	87.6%
	1956	21.1	22.2	29.5	28.0	31.8%	68.1%

(b) Hlatikulu Hospital.

Number of beds (European) 8
Number of beds (Eurafrican) 3
Number of beds (African) 30
Number of cots (African) 3

Daily average number of In-patients (European) 0.9
Daily average number of In-patients (Eurafrican) 0.1
Daily average number of In-patients (African) 72.8

The daily In-patient figures for the past eleven years are given below:-

Year.	Daily average number of In-patients.		
	European	Eurafrican	African.
1946	2.5	0.7	65.2
1947	3.33	0.61	65.2
1948	2.54	0.46	74.5
1949	1.7	0.52	66.6
1950	1.5	0.4	63.6
1951	2.0	0.7	72.5
1952	1.4	0.9	80.1
1953	1.4	1.0	73.3
1954	1.13	0.10	67.8
1955	0.09	0.3	81.2
1956	0.9	0.1	72.8

Staff.

2 Medical Officer
4 European Sisters
1 European Pharmacist/Storekeeper,
1 African Hospital Assistant,
1 African Laboratory Assistant,
1 African Dispenser (Post Vacant)
18 African Nurses,
1 Dispensary Orderly
5 Ward Attendants,
3 Orderlies,
1 Pupil Dispenser

Year	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956.
Admissions	2245	1647	1313	1483	1814	1896	1900	1923	1739	1938	1701 (54)
Deaths	46	43	50	56	59	55	54	55	42	39	40
Confinements	150	188	198	202	159	148	170	124	126	191	162 (6)
Operations	112	256	241	242	253	299	542	179	200	231	236 (23)
Out-patients new cases	12145	6955	5169	4414	5676	7009	8298	8117	7450	6660	7939(460)
Out-patients re-attendances		2342	2894	3549	2803	1700	3336	3396	3911	3213	4869(689)

Work on the extensions to the Hlatikulu Hospital was resumed in September, and a block comprising new Coloured wards (4) and labour room, an African male ward, and a combined kitchen unit is under construction. It is intended to re-design the existing laundry building and to instal modern laundry machinery to replace the primitive facilities at present in existence. Plans are being prepared for the conversion of an existing building into Nursing Sisters quarters.

(c) Raleigh Fitkin Memorial Hospital, Bremersdorp.

Number of beds (European) 8
Number of beds (African) 68
Number of beds (Eurafrican) 4

Admissions.

Year	Europeans	Eurafricans	Africans	Deaths
1946	281	116	2154	42
1947	264	117	1814	60
1948	232	92	2082	82
1949	201	80	1823	83
1950	228	92	2305	110
1951	274	94	2760	95
1952	197	66	2852	84
1953	260	83	2975	91
1954	171	51	2754	103
1955	157	42	2464	81
1956	166	41	2647	100
Increase/ Decrease over 1946	- 40.9%	- 56.0%	+ 22.8%	

Daily average number of In-patients (European) 4.1
Daily average number of In-patients(Eurafrican) 2.4
Daily average number of In-patients (African) 132.5

Out-patients.

Year.	New Cases.	Re-attendances.	Totals
1946	5540	5500	11040
1947	5283	4680	9963
1948	9253	8314	17567
1949	9404	8620	18024
1950	10853	9853	20706
1951	11688	9700	21388
1952	11383	9134	20517
1953	9999	10746	20745
1954	8416	8616	17032
1955	9856	8201	18057
1956	13625	8613	22238

Staff.

1 Medical Superintendent,
3 Medical Officers,
1 Radiographer (part time)
11 Nursing Sisters
1 Housekeeper,
1 Secretary
1 Bookkeeper
17 African Nurses,
1 African Midwife,
40 Probationer Nurses,
3 Male Clerks,
1 Telephonist,
1 Dispensary Assistant,
1 Laboratory Assistant and messenger
20 Maids,
2 Seamstresses
13 Laundresses,
2 Groundsmen
1 Messenger
2 Repairsmen
1 Maintenance man.

(d) Havelock Mine Hospital.

The figures relating to members of the General Native Population treated at the Mine Hospital are shown in the following table:-

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Admissions	141	113	81	189	175	68	89	124	65	309	45
Out-patients (New cases)	333	47	79	79	88	559	546	613	470	87	139
Re-attendances	2285	128	147	395	124	535	1239	779	460	72	386
Daily average no. of In-patients.	3.3	.34	2.7	4.18	5.0	1.35	1.9	2.3	1.4	6.3	1.18

(e) Mahamba Methodist Hospital.

The figures relating to the work carried out at this intitution during the past four years are shown below:-

	Europeans				Africans			
	1953	1954	1955	1956	1953	1954	1955	1956
Admissions	26	27	68	38	384	565	735	764
In-patient days	117	209	381	164	2786	4267	9394	10574
Confinements	2	12	25	7	18	38	57	40
Deaths	1	1	3	2	13	39	40	6
Operations (major)	1	2	12	3	7	21	39	20
(minor)	22	16	36	19	25	161	264	167
Out-patients (new cases)	118	368	446	53	1340	3450	2476	1904
Out-patients (re-attendances)	179	846	1215	790	2379	2622	4027	2701
Malaria Cases	-	3	5	-	18	4	5	-
Bilharziasis	-	1	13	1	23	18	13	12
Tuberculosis	1	-	-	-	5	65	75	68

(f) Swaziland Irrigation Scheme (C.D.C) (January/February only)

	Europeans		Africans		Totals
	E	GNP	E	GNP	
Admissions	4	1	22	4	31
In-patient days	41	4	136	23	204
Confinements	-	-	5	-	5
Deaths	-	-	3	-	3
Out-patients (New cases)	37	13	556	228	634
Out-patients (Re-attendances)	36	6	736	178	956
Operations	-	2	10	14	26
Malaria	-	-	1	-	1
Schistosomiasis	-	-	8	8	16

(Note: "E" = Employees and dependants,
"GNP" = Non-employees.)

(g) Dispensaries (Health Centres)

The number of cases treated at Dispensaries in various parts of the territory is given in the following table:-

Dispensary.	In-patients	Out-patients. New Cases E	Out-patients. New Cases N.E.	Out-patients. Re-attendances E	Out-patients. Re-attendances N.E.
Horo	-	7	4157		2245
(a)Hebron	-	-	-	-	-
Government Farm	-	-	2157	-	489
Goedgegun	-	353	3923	409	4910
Mhlotsheni	-	36	2835	4	1063
Hluti	-	120	2325	106	1865
Lesters	-	-	1572	-	355
Sipofaneni	-	24	1779	18	621
St. Philips	-	-	2796	-	727
Our Lady of Sorrows	-	42	7596	12	510
Lubuli-Gollel	-	46	2114	10	548
Totals	-	628	31254	559	13333
Mankaiana Cottage Hospital (x)	1785	19	7312	34	3803

("E" = Europeans, "N.E." = Non-Europeans, "x" = figures additional to those shown in the Return of Diseases for Government Hospitals, Appendix I))
((a) closed owing to shortage of staff)

The number of cases treated at Health Centres during the past eleven years are shown in the following tables:-

(i) Health Centres (General.) x (see footnote)

Year	New Out-patients	Re-attendances	Total attendances	Confinements
1946	15201	4288	19428	68
1947	14109	8151	22260	47
1948	15347	14235	29482	34
1949	16893	12110	29003	38
1950	19285	13864	33199	34
1951	22214	17787	40001	67
1952	22353	12962	35315 (x)	43
1953	23767	6659	30426 (x)	56
1954	25926	9632	35558 (x)	62
1955	27609	12145	39754 (x)	62
1956	31882	13892	45774 (x)	62

(Note: "x" = Mahamba figures (5448) not included)

(ii) Mankaiana Cottage Hospital (16 beds)

Year.	Admissions.	Out-patients New Cases E	Out-patients New Cases N.E.	Out-patients Re-attendances. E.	Out-patients Re-attendances. N.E.	Total attendanc.	Confinements.
1946	957	25	7244	10	3135	10414	122
1947	734	36	5693	19	3999	9747	100
1948	762	43	6727	47	2853	9670	94
1949	736	38	7289	59	3030	10416	114
1950	797	29	7147	54	3966	11196	110
1951	829	61	6287	83	3400	9831	95
1952	835	56	6119	98	3225	9498	98
1953	960	28	7347	30	3609	11014	98
1954	927	34	6518	70	3795	10417	120
1955	1469	40	6968	28	3446	10482	191
1956	1785	19	7312	34	3803	11168	139

x = 1956 has been a peak year in out-patients attendances at Health Centres at which the volume of work has increased by 130.5% since 1946.

The number of admissions has exceeded all previous records and was 86.5% greater than in 1946.

The average number of in-patients at the hospital was 28.9%, as compared with 24.2 in 1955, 28.9 in 1954, 30.7 in 1953 and 30.0 in 1952.

(iii) Cases treated at Nazerene Mission Health Centres.

Health Centre.	Out-patients			
	New Cases.		Re-attendances	
	E	N.E.	E	N.E.
Stegi x	50	4174	181	3506
Endingeni x	2	3628	-	991
Pigg's Peak x	48	2479	13	1247
Mliba x	-	889	-	944
Mafuteni	-	317	-	886
Bhekinkosi (i)	-	990	-	490
Balegane	-	612	-	836
Malinda	-	750	-	514
Ebenezer (Pilgrim Holiness Church)	-	1451	-	318
Mayiwane	-	973	-	2082
Totals	100	16263	194	11814

("x" = subsidized by Government
(i) = closed for 1 month (October))

(iv) Good Shepherd Hospital, Stegi.

The work of this hospital, which has been hampered by the absence of a second Medical Officer for the whole of 1956, is summarized in the following table:-

	In-patients	Out-patients			
		New Cases		Re-attendances	
		M	F	M	F
European Officials	-	85	49	34	30
European General Population	29	219	237	89	61
African Officials	16	274	149	62	29
General African Population	457	997	1667	320	502
Eurafricans	13	139	133	65	45
		1714	2235	570	667
Totals for 1956	515	3949		1237	
Totals for 1955	530	5472		1108	
Totals for 1954	594	6720		1162	
Totals for 1953	27	5963		1073	
Total for 1952	-	5255		1653	
Total for 1951	-	4084		4923	

The District Surgeon paid 27 visits to Nomahasha and 47 to Big Bend, during which the cases listed below received treatment:-

	Europeans				Africans			
	Nomahasha		Big Bend		Nomahasha		Big Bend	
	M	F	M	F	M	F	M	F
Out-patients, new cases	-	7	26	35	253	1097	431	513
Out-patients, re-attendances	-		6		339		299	
Syphilis	-		-		3		7	
Gonorrhoea	-		-		2		3	
Syphilis, re-attendances	-		-		-		-	
Gonorrhoea, re-attendances	-		-		-		-	
Fresh cases of malaria	-		-		15		19	
New cases of Schistosomiasis	-		-		4		3	
New cases of tuberculosis	-		-		5		3	

2362 new out-patients and 634 re-attendances were seen on the visits to these centres as compared with 2619 and 637 respectively in 1955.

VI. PRISONS.

The prisons at Mbabane, Bremersdorp and Hlatikulu were inspected by Medical Officers each week, and the general health of prisoners has been satisfactory at all atations throughout the territory. Certain improvements to gaol buildings have been carried out at Hlatikulu and Mbabane, where water-borne latrine systems have been installed.

VII. SCIENTIFIC.

Figures relating to the laboratory work carried out at the main medical centres in the territory are given in the following table:-

	Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hosiptal
Blood films	7847	345	176	65
Total blood count	139	-	160	-
Throat swab cultures (C. diphtheriae)	48	-	-	-
Bacteriological Smears		3485	566	9
Faeces		824	799	120
Urines	171	4066	1859	4830
Sputa		737	1374	635
Seriological Tests for Syphilis	7479	-	-	-
Identification of Adult Mosquitos	205	-	-	-
Identification of mosquito larvae	910	-	-	-
Identification of snails	1255	-	-	-
Biochemical tests	-	-	-	-
Blood, stool & urine cultures	168	-	-	-
Agglutination tests	265	-	-	-
Cerebrospinal fluid	-	-	-	-
Sedimentation Rates	-	-	869	-
Unspecified	-	-	53	-
Totals 1956	18478	9457	6186	5659

(continued)

	Public Health Laboratory Bremersdorp	Mbabane Hospital	Hlatikulu Hospital	Raleigh Fitkin Memorial Hospital.
Totals for 1956	18478	9457	6186	5659
Totals for 1955	16513	6851	7339	4224
Totals for 1954	14909	7220	5920	4592
Totals for 1953	17538	8441	5660	4151
Totals for 1952	11293	7215	3189	3475
Totals for 1951	14077	5867	2066	4760
Totals for 1950	14770	4279	1746	5981
Totals for 1949	13688	3619	1220	4919
Totals for 1948	15641	2865	1813	4912
Totals for 1947	16428	2015	1427	3903

All routine laboratory work, other than that directly connected with Malaria and Bilharziasis control was suspended with effect from the 1st December 1956, owing to shortage of staff and the work was temporarily referred to the South African Institute for Medical Research.

VIII. (a) MEDICO-LEGAL WORK, ETC.

	Mbabane, Pigg's Peak & Mankaiana District.	Hlatikulu District	Manzini & Stegi District.	Total
Post mortem Examinations	23	20	44	87
Examinations for Assault etc.	101	178	208	487
Examination for Tax Exemption	65	99	60	224

(b) RADIOLOGICAL EXAMINATIONS.

	Mbabane Hospital.		Hlatikulu Hospital.		Raleigh Fitkin Memorial Hospital		Total	
	E	A	E	A	E	A	E	A
Screenings	29	52	6	77	1	5	36	134
Radiographs	794	1339	36	426	98	1036	938	2791
Totals	823	1391	42	503	99	1041	974	2925

I wish to express my sincere appreciation of the loyal and efficient manner in which the members of the staff of the department carried out their duties during the year.

J. C. J. CALLANAN

DIRECTOR OF MEDICAL SERVICES.

ANNUAL REPORT 1956.

PUBLIC HEALTH LABORATORY, BREMERSDORP.

A. STAFF.

During November Miss J. Bredell, B.Sc., resigned her post as Laboratory Assistant. Up to the time of writing, it has not been possible to fill the vacancy. In accordance the routine section of the Public Health Laboratory had to be closed down temporarily.

The Malaria Medical Officer attended a Malaria Conference in Pretoria in July. The conference was convened by the Union Health Department and delegates from the Union of South Africa, the Protectorates and Portuguese East and West Africa attended the conference.

In November the Malaria Medical Officer was invited by the World Health Organisation to preside over an inter-territorial Malaria conference in Nairobi. Malariologists and Entomologists from the East African Territories, Rhodesias, Belgian Congo, Madagascar, Mauritius, Mozambique, Somaliland, Ethopia and the Union of South Africa as well as representatives of the World Health Organisation attended the meeting.

B. MALARIA CONTROL.

GENERAL. Rainfall in inches, as recorded at the Bremersdorp meteriological station is shown in Table I. For comparison, average figures over the last five years are also listed:-

TABLE I : MONTHLY RAINFALL AT BREMERSDORP.

	1956.	Average (over last 5 years)
January	1.05	6.1
February	8.98	5.47
March	5.35	3.89
April	0.19	2.20
May	1.98	1.44
June	0.49	0.53
July	0.59	0.39
August	0.06	1.31
September	3.10	1.05
October	3.98	3.82
November	3.24	5.89
December	4.01	5.52
	33.02	37.63

Transmission Season 1955/56

During the course of the transmission season, 1956, an overall total of 102,762 huts have been treated with residual insecticides; of this total 27,038 received a second treatment and 2,452 only were sprayed 3 times during the season. This number of 102,762 represents a decrease of over 40,000 huts sprayed in comparison to the previous year and is explained by the fact that imagicidal control was discontinued for the first time in a large middleveld area and further by reducing the number of spray treatments in some of the bushveld areas.

The residual insecticide used was again B.H.C. 50% wettable powder

with 10% gamma content. The surface concentration aimed at was 25 mgm per square foot.

Apart from this routine measure, a second large scale experiment with Dieldrin using a 50% wettable powder with a surface concentration of 40 mgm per square foot was carried out in 2 bushveld areas. The huts in these areas received one treatment at the beginning of the season only, i.e. in December 1955/January 1956.

The experience gained in this experiment and the results achieved were discussed in detail in a publication "A Comparison Between the Use of Dieldrin and B.H.C. in the Control of Rural Malaria in Swaziland".

No statistically significant difference of malaria transmission in areas treated with Dieldrin and those treated with B.H.C. was noticed. The results of blood examination amongst children in the two areas were as follows:-

	Dieldrin	B.H.C.
No. of examinations	1,081	2,779
No. of parasite-positive cases	9	19
Parasite rate	0.83%	0.7%

The malaria position in the territory during the transmission season was assessed by blood surveys as in previous years, and are demonstrated in the three following tables:-

TABLE II : NUMBER OF CASES EXAMINED DURING TRANSMISSION SEASON.

Bushveld Areas	4,388
Middleveld Areas	607
Irrigation Schemes	471
Area under Drug Prophylaxis	205
Surveys outside the territory	366
Total	6,037

TABLE III : RESULT OF BLOOD SURVEYS IN BUSHVELD AREAS.

Age groups.	Cases examined	Positive	Parasite Rate
1 - 12 months	1,322	0	0.0%
1 - 5 years	2,248	15	0.7%
6 - 16 years	818	17	2.1%
Total parasite rate in all children.			0.7%

TABLE IV : RESULT OF BLOOD SURVEYS ON IRRIGATION SCHEMES.

Age groups	Cases examined	Positive	Parasite Rate.
1 -12 months	112	0	0.0%
1 - 5 years	244	9	3.6%
6 - 16 years	115	6	5.0%
Total parasite rate in all children			3.1%

Middleveld Areas including those where control was discontinued.

In all middleveld areas no parasite positive cases were discovered.

From the foregoing figures it is evident that malaria transmission had not only been completely discontinued in all bushveld areas but also children parasite-rates have been below 1% during the season.

Although the total parasite-rate on Irrigation Schemes was found to be still significantly higher than that in the non-irrigated bushveld areas it is of great interest to note that for the first time the infant-rate was zero throughout the season.

Moreover, it has to be stated that itis somewhat doubtful whether all the parasite-positive cases observed in older children had actually acquired their infections on the Irrigation Schemes and not at least some of them on their frequent visits to uncontrolled areas in Portuguese East Africa.

In future special arrangements will be made to trace all parasite positive cases on these Irrigation Schemes in order to obtain a reliable history. The same procedure is adopted in all rural areas.

MALARIA VECTOR POSITION.

(a) A. funestus funestus:

This vector has apparently completely disappeared from Swaziland. No specimen of this species either in its larval or adult stage was recovered from any area.

(b) A. gambiae.

This vector was present in the larval stage in some breeding places of the bushveld although the numbers recovered were small. It was almost impossible to find adult A. gambiae inside human habitations and in many hundreds of check-spraying by day and night only three females and two males were found during the transmission season.

DRUG PROPHYLAXIS.

In 1956 an attempt was made to control malaria with pyrimethamine. The experiment was carried out on a group of Africans (approximately 100) living in some 30 huts at Abercorn Drift on the banks of the Usutu River. This area directly adjoins uncontrolled areas of Portuguese East Africa and Maputoland. On account of the geographical position and owing to the fact that the inhabitants frequently cross the river and spend some considerable time in the neighbouring territories, exposing themselves to malaria infection, hut spraying with residual insecticide was never very successful.

All parasite-positive cases received one initial dose of 0.3 gr. chloroquine (base), children under 5 years receiving half this dosage. Thereafter all children and adults received 25 mg pyrimethamine (half dosage for children under 5) once a month.

The results achieved were remarkable since parasite rates declined from 46.8% in the pre-control survey (beginning of 1956) to 2.2% in June, when infant parasite rate reached zero. This is all the more interesting as the attendance of the population was not at all regular, the dosage administered very low, the people living in an hyperendemic area and the reduction obtained in a very short time.

This experiment is still in progress and will be continued

throughout the transmission season 1956/57 with the alteration of increasing the drug administration to twice a month.

It is hoped that all the people will thus receive at least one dose of pyrimethamine during one month.

DISCONTINUATION OF MALARIA CONTROL.

For the first time since the inception of Malaria Control in Swaziland, residual spraying was discontinued in one middleveld area, where total interruption of transmission was attained over the past two years. 7,000 huts with a population of about 10,000 were thus excluded from routine control. As pointed out previously no case of malaria occurred in this area and no adult A. gambiae were recovered from human habitations.

It is intended to curtail malaria control still further during the coming season and approximately two thirds of hitherto sprayed areas including many hyperendemic bushveld areas will be excluded from routine control. As the decision of discontinuation of rural control depends not only on the malaria position inside Swaziland, but to a large extent on the position in the so far uncontrolled areas of neighbouring territories, it is felt safer to continue spraying along the eastern border to a depth of about 15 - 20 miles inside Swaziland, thus creating a "cordon sanitaire" and including the two main Irrigation Schemes in the eastern part of the bushveld.

An extensive "surveillance" scheme has been organised in all areas where imagicidal measures have been discontinued, and teams are constantly travelling through these areas, taking bloods by random sampling, test spraying huts for the presence of adult mosquitos and collecting larvae from breeding places.

Every parasite positive case discovered during these operations is being traced and a history obtained with the object of assessing the origin of the infection. Immediate treatment is then given, using Chloroquine in doses of 600 mg (base), half the dosage to children below 5 years of age.

The importance of this procedure is obvious and although it tends to increase laboratory work considerably, it is the only method to assess the malaria position in a given area with a reasonable degree of accuracy.

MALARIA POSITION DURING THE NON-TRANSMISSION SEASON (JULY-NOVEMBER 1956)

During the off-season a total of 1,364 bloodslides were examined. The following table (No. V) gives an analysis of the results.

TABLE V : RESULT OF BLOODSLIDE EXAMINATION DURING THE NON-TRANSMISSION SEASON

	Number Examined.	Number Positive	Percentage
A. Bushveld Areas	738	2	0.25%
B. Middleveld Areas	183	0	0.0%
C. Pyrimethamine experiment	127	5	3.9%
D. Irrigation Schemes	316	12	3.8%

The sudden increase of parasite positive cases (5 out of 127) amongst the people receiving Pyrimethamine may be explained by the fact that for technical reasons the issue of the drug had to be discontinued during July and August.

On the Irrigation Schemes 12 parasite positive cases were discovered amongst 316 children examined.

It is interesting to note that 5 of the positive cases could definitely be traced to visits to or new arrivals from Portuguese East Africa. All the parasite carriers received treatment.

TRANSMISSION SEASON 1956/57

As in previous years spraying operations started in areas along the eastern border in mid-November and by the end of December the majority of these huts numbering approximately 15,000 had received the first treatment with B.H.C.

Only 1 parasite positive case was discovered in December amongst over 500 examined. This case was found at the southern Irrigation Scheme.

PUBLICATION.

During 1956 the following paper was presented: "Past and Present Position of Malaria in Swaziland", which is at present in print and will appear in the Journal of Tropical Medicine.

C. LABORATORY.

Although owing to shortage of staff the Laboratory had to be closed as from 1st December, the total number of specimens examined during the eleven months was 8,270 against 7,655 in 1955, thus exceeding last year's total by over 600.

The following table gives detailed statistics of the examinations performed in the laboratory during 1956. Figures for 1955 are also listed for comparison.

TABLE VI : LABORATORY STATISTICS.

(i) General Examinations.	1956.	1955.
Serological tests for Syphilis	7,479	6,954
Agglutination tests Widal, Brucellosis etc.	265	236
Cultures - Blood, Stool and Urine	168	165
Cultures for Diphtheria	48	58
Blood Counts	139	124
Microscopic Examination of Stools, Urines and Sputa	171	118
Totals	8,270	7,655
(ii) Malaria and Bilharzia.		
Bloodslides - field and survey	7,703	6,367
Hospitals	144	166
Entomological Identifications		
Adult Mosquitos	205	365
Mosquito Larvae	910	810
Snails	1,255	1,150
Totals	10,217	8,858

Serological Tests for Syphilis

Of the total of 7,479 specimens for testing, 272 were haemolysed or otherwise unsuitable for examination.

Of the remaining 7,207 positive and doubtful reactions were as follows:-

Positives	1364	- 18.9%
Doubtful	272	- 3.7%

The percentages of positive and doubtful are somewhat lower than in previous years, the percentages in 1955 being 24.1% and 5.9% respectively.

Enteric Group of Fevers,

242 specimens for Widal tests were submitted, almost the same (227) as in the previous year. Analysis of positive reactions (diagnostic titre) is as follows:-

	1956.	1955.
B. Typhosus H and O	54	55
B. para typhosus A	0	0
B. para typhosus B	1	0
B. para typhosus C	3	4

In addition 168 specimens were received for culture;21 of these yielded a growth of B. typhosus and 2 yielded a growth of B. para typhosus C.

These figures are almost identical as those recorded in the previous year.

Weil Felix and Brucellosis Tests.

No positive reactions were recorded.

GOVERNMENT HOSPITALS. APPENDIX I.

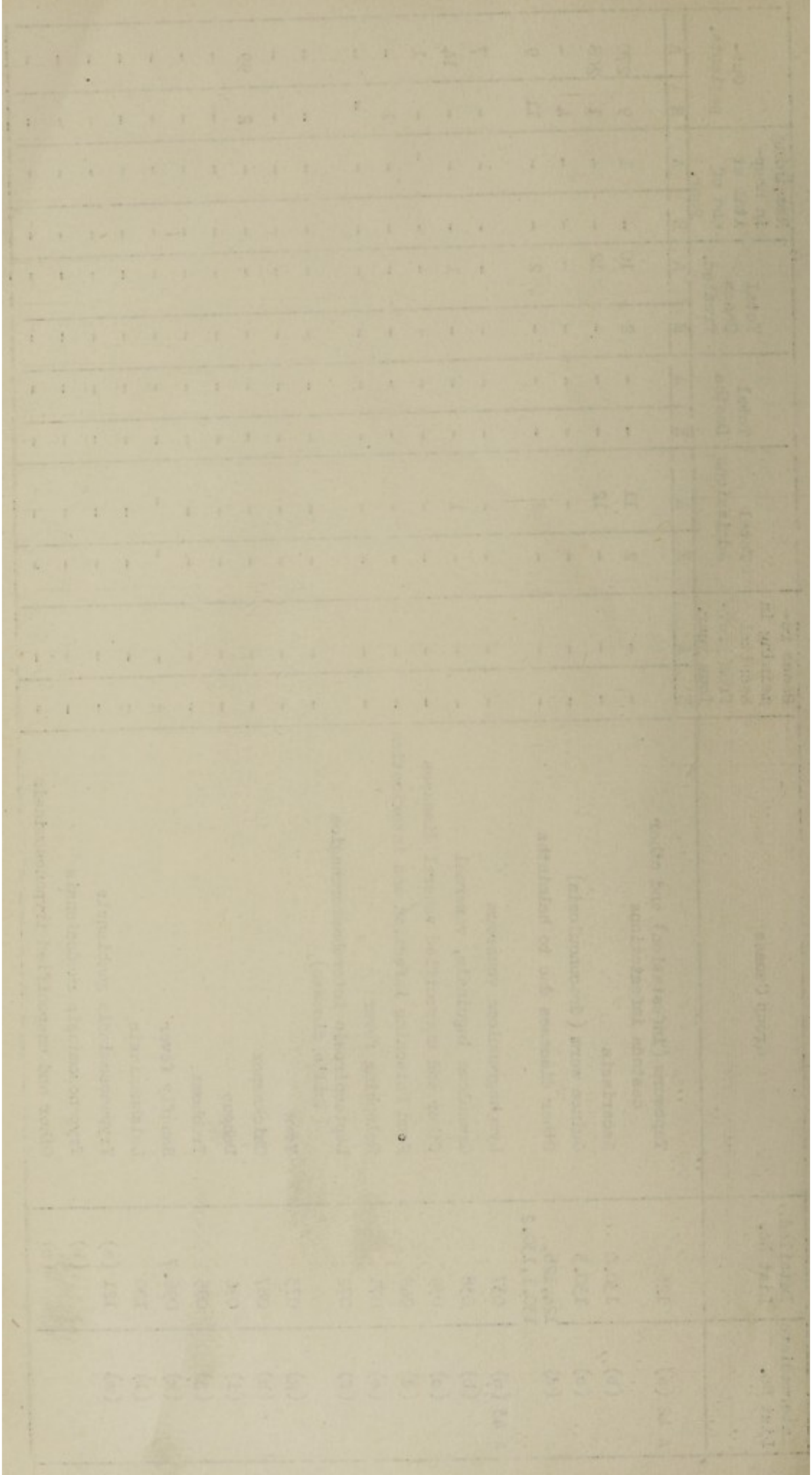
RETURN OF DISEASES AND DEATHS (IN-PATIENTS) FOR THE YEAR 1956.

Intermediate List No.	Detailed List No.	Group Cases	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
A 1	001-008	Tuberculosis of respiratory system	-	10	-	122	-	5	-	123	-	9	-	83
A 2	010	Tuberculosis of meninges and central nervious system	-	-	-	-	-	-	-	-	-	-	-	-
A 3	011	Tuberculosis of intestines, peritoneum and mesenteric glands	-	-	-	9	-	1	-	9	-	-	-	-
A 4	012,013	Tuberculosis of bones and joints	-	4	-	28	-	-	-	30	-	2	-	6
A 5	014-019	Tuberculosis, all other forms	-	1	-	33	-	-	-	31	-	3	1	45
A 6	020	Congenital syphilis	-	1	-	14	-	1	-	13	-	2	-	55
A 7	021	Early syphilis	-	-	-	25	-	1	-	25	-	-	-	295
A 8	024	Tabes dorsalis	-	-	-	-	-	-	-	-	-	-	-	-
A 9	025	General Paralysis of insane	-	-	-	-	-	-	-	-	-	-	-	-
A 10	022,023, 026-029	All other syphilis	-	3	-	22	-	-	-	25	-	-	-	233
A 11	030-035	Gonococcal infection	-	3	-	41	-	-	-	44	-	-	5	726
A 12	040	Typhoid fever	-	1	-	42	-	1	-	36	-	7	-	7
A 13	041,042	Paratyphoid fever and other Salmonella infections	-	-	-	-	-	-	-	-	-	-	-	-
A 14	043	Chlorera	-	-	-	-	-	-	-	-	-	-	-	-
A 15	044	Brucellosis (undulant fever)	-	-	-	-	-	-	-	-	-	-	-	-
A 16 (a)	045	Bacillary dysentery	-	1	3	66	-	-	3	66	..	1	7	198

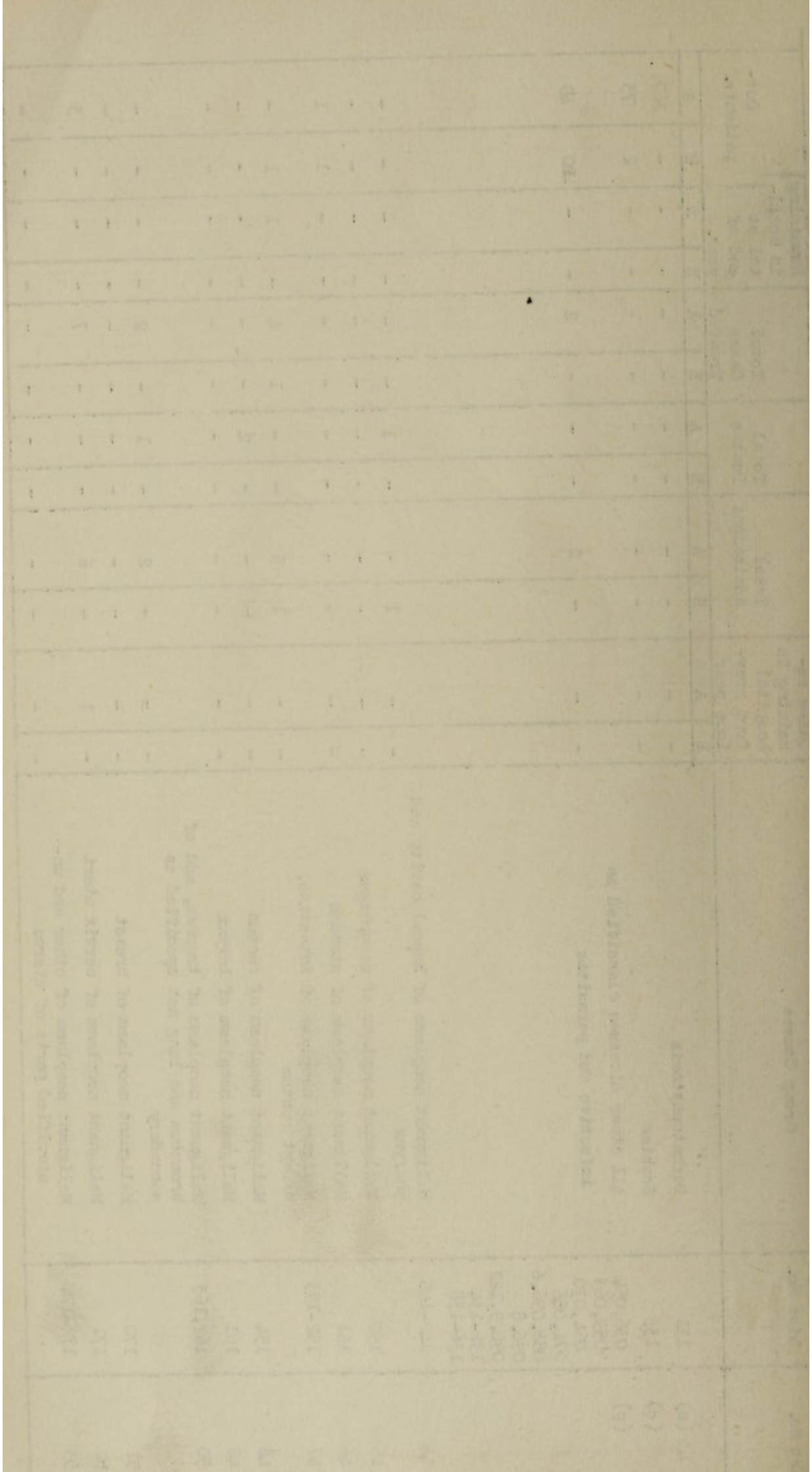
Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year.		Total Admissions.		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 16 (b)	046	Amoebiasis	-	1	-	67	-	3	-	66	-	2	1	17
16 (c)	047,048	Other unspecified forms of dysentery	-	-	-	1	-	-	-	1	-	-	1	5
A 17	050	Scarlet fever	-	-	-	-	-	-	-	-	-	-	-	-
A 18	051	Streptococcal sore throat	-	-	6	20	-	1	6	20	-	-	70	4
A 19	052	Erysipelas	-	-	-	1	-	-	-	1	-	-	-	1
A 20	053	Septicaemia and pyaemia	-	-	1	5	-	1	1	4	-	1	2	-
A 21	055	Diphtheria	-	-	-	7	-	1	-	7	-	-	-	5
A 22	056	Whooping Cough	-	-	-	33	-	1	-	32	-	1	16	141
A 23	057	Meningococcal infections	-	-	-	4	-	2	-	4	-	-	-	-
A 24	058	Plague	-	-	-	-	-	-	-	-	-	-	-	-
A 25	060	Leprosy	-	-	-	2	-	-	-	2	-	-	-	5
A 26	061	Tetanus	-	-	-	1	-	1	-	1	-	-	-	-
A 27	062	Anthrax	-	-	-	-	-	-	-	-	-	-	-	-
A 28	080	Acute Poliomyelitis	-	1	-	2	-	-	-	3	-	-	-	4
A 29	082	Acute infectious encephalitis	-	-	-	-	-	-	-	-	-	-	-	-
A 30	081,083	Late effects of acute poliomyelitis and acute infectious encephalitis	-	-	-	1	-	-	-	1	-	-	-	-
A 31	084	Smallpox	-	-	-	-	-	-	-	-	-	-	-	1
A 32	085	Measles	-	-	2	34	-	-	2	33	-	1	11	62
A 33	091	Yellow fever	-	-	-	-	-	-	-	-	-	-	-	-
A 34	092	Infectious hepatitis	-	1	1	5	-	-	1	5	-	1	8	5
A 35	094	Rabies	-	-	-	-	-	-	-	-	-	-	-	-

Intermediate List No.	Detailed List No.	Group Causes	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
A 36 (a)	100	Louse borne epidemic typhus	-	-	-	-	-	-	-	-	-	-	-	-
(b)	101	Flea borne endemic typhus (murine)	-	-	-	-	-	-	-	-	-	-	-	-
(c)	104	Tick borne epidemic typhus	-	-	3	-	-	-	3	-	-	-	9	5
(d)	105	Mite borne typhus	-	-	-	-	-	-	-	-	-	-	-	-
(e)	102,103, 106-108	Other and unspecified typhus	-	-	-	-	-	-	-	-	-	-	-	-
A 37 (a)	110	Vivax malaria (benign tertian)	-	-	-	-	-	-	-	-	-	-	2	1
(b)	111	Malariae malaria (quartan)	-	-	-	-	-	-	-	-	-	-	-	-
(c)	112	Falciparum malaria (malignant tertian)	-	-	-	1	-	-	-	1	-	-	-	-
(d)	115	Black-water fever	-	-	-	-	-	-	-	-	-	-	-	-
(e)	113,114 116,117	Other and unspecified forms of malaria	-	-	-	1	-	-	-	1	-	-	6	8
A 38 (a)	123.0	Schistosomiasis intestinal (S.mansoni)	-	1	-	1	-	-	-	2	-	-	1	-
(b)	123.1	Schistosomiasis vescial (S.haematobium)	-	12	3	51	-	-	3	63	-	-	2	152
(c)	123.2	Schistomiasis pulmonary (S.japonicum)	-	-	-	-	-	-	-	-	-	-	-	-
(d)	123.3	Other and unspecified schistosomiasis	-	-	-	-	-	-	-	-	-	-	-	-
A 39	125	Hydatid disease	-	-	-	-	-	-	-	-	-	-	-	-
A 40 (a)	127	Onchocerciasis	-	-	-	-	-	-	-	-	-	-	-	-
(b)		Loiasis	-	-	-	-	-	-	-	-	-	-	-	-
(c)		Filariasis (bancrofti)	-	-	-	-	-	-	-	-	-	-	-	-
(d)		Other filariasis	-	-	-	-	-	-	-	-	-	-	-	-
A 41	129	Ankylostomiasis	-	-	-	-	-	-	-	-	-	-	-	-

Intermediate List No.	Detailed List No.	Group Causes	Bases 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
A 42 (a)	126	Tapeworm (infestation) and other cestoda infestations	-	-	2	11	-	-	2	10	-	1	9	270
(b)	130.0	Ascariasis	-	-	-	12	-	-	-	12	-	-	1	208
(c)	130.3	Guinea worm (dracunculosis)	-	-	-	-	-	-	-	-	-	-	4	-
(d)	124,128, 130.1,130.2	Other diseases due to helminths	-	-	-	2	-	-	-	2	-	-	11	9
A 43 (a)	037	Lymphogranuloma venereum	-	-	-	-	-	-	-	-	-	-	-	7
(b)	038	Granuloma inguinale, venereal	-	-	-	1	-	-	-	1	-	-	-	14
(c)	039	Other and unspecified veneral diseases	-	-	-	-	-	-	-	-	-	-	-	1
(d)	049	Food Poisoning infection and intoxication	-	-	-	-	-	-	-	-	-	-	1	-
(e)	071	Relapsing fever	-	-	-	-	-	-	-	-	-	-	-	-
(f)	072	Leptospirosis icterohaemorrhagica (Weil's disease)	-	-	-	-	-	-	-	-	-	-	-	-
(g)	073	Yaws	-	-	-	-	-	-	-	-	-	-	-	-
(h)	087	Chicknepox	-	-	-	-	-	-	-	-	-	-	2	99
(i)	090	Dengue	-	-	-	-	-	-	-	-	-	-	-	-
(j)	095	Trabhoma	-	-	-	-	-	-	-	-	-	-	-	-
(k)	096.7	Sandfly fever	-	-	-	-	-	-	-	-	-	-	-	-
(l)	120	Leishmaniasis	-	-	-	-	-	-	-	-	-	-	-	-
(m)	121 (a)	Trypanosomiasis gambiensis	-	-	-	-	-	-	-	-	-	-	-	-
	(b)	Trypanosomiasis rhodesiensis	-	-	-	-	-	-	-	-	-	-	-	-
	(c)	Other and unspecified trypanosomiasis	-	-	-	-	-	-	-	-	-	-	-	-

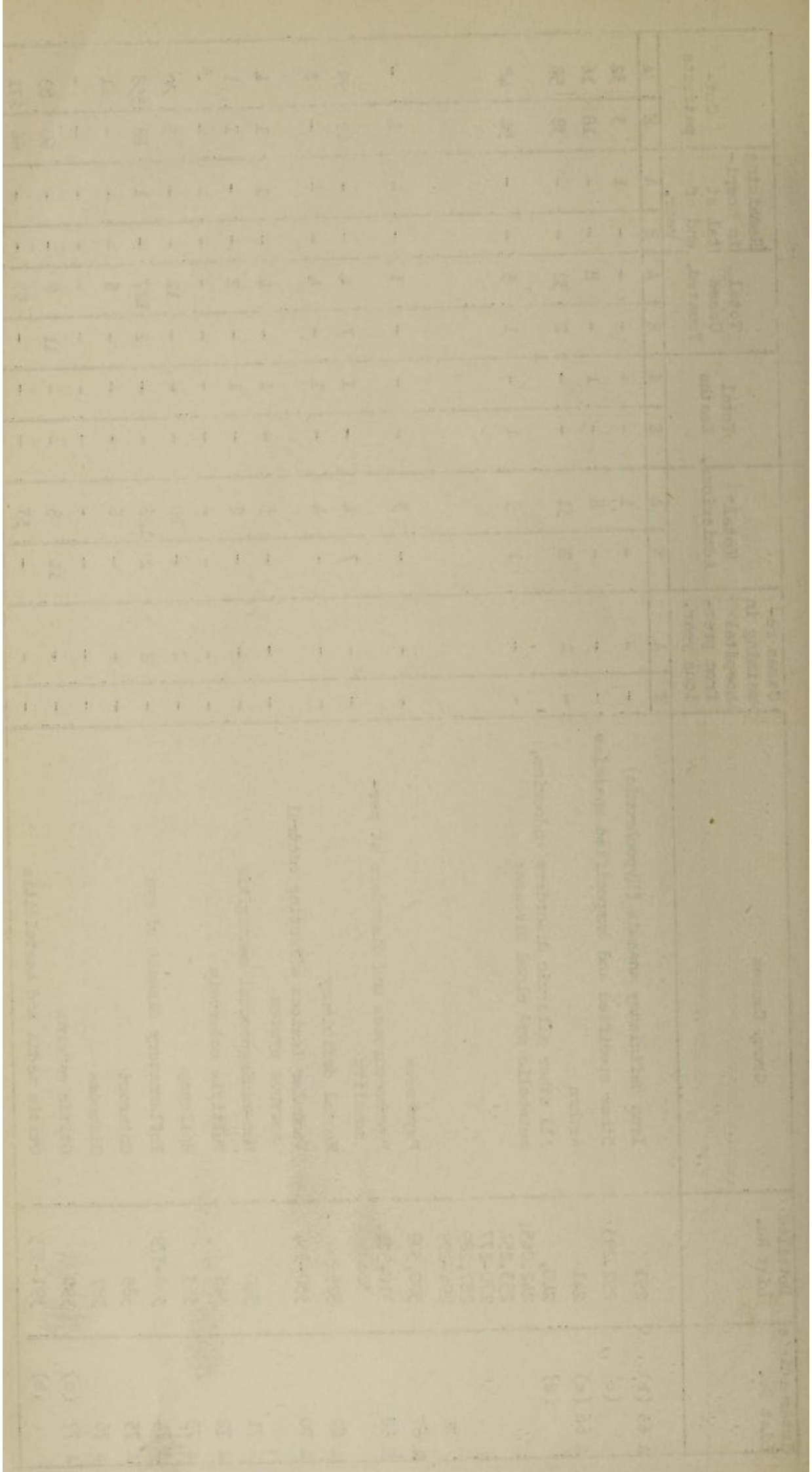


Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 43 (n)	131	Dermatophytosis	-	-	-	-	-	-	-	-	-	-	-	267
(o)	135	Scabies	-	-	-	-	-	-	-	-	-	-	2	73
(p)	036,054 059,063 064,070 074,086 088,096.6 096.8 098.9,122 132-134 136-138	All other diseases classified as infective and parasitic	-	-	-	2	-	-	-	2	-	-	10	49
A 44	140-148	Malignant neoplasm of buccal cavity and pharynx	-	-	1	-	-	1	-	-	-	-	-	-
A 45	150	Malignant neoplasm of oesophagus	-	-	-	-	-	-	-	-	-	-	-	-
A 46	151	Malignant neoplasm of stomach	-	-	-	-	-	-	-	-	-	-	1	1
A 47	152-153	Malignant neoplasm of intestine, except rectum	-	-	1	5	-	-	1	4	-	1	1	-
A 48	154	Malignant neoplasm of rectum	-	-	-	-	-	2	-	-	-	-	-	-
A 49	161	Malignant neoplasm of larynx	-	-	-	-	-	-	-	-	-	-	-	-
A 50	162,163	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary	-	-	-	2	-	1	-	2	-	-	-	-
A 51	170	Malignant neoplasm of breast	-	-	-	-	-	-	-	-	-	-	-	-
A 52	171	Malignant neoplasm of cervix uteri	-	1	-	6	-	-	-	7	-	-	-	3
A 53	172-174	Malignant neoplasm of other and unspecified parts of uterus	-	-	-	-	-	-	-	-	-	-	-	-



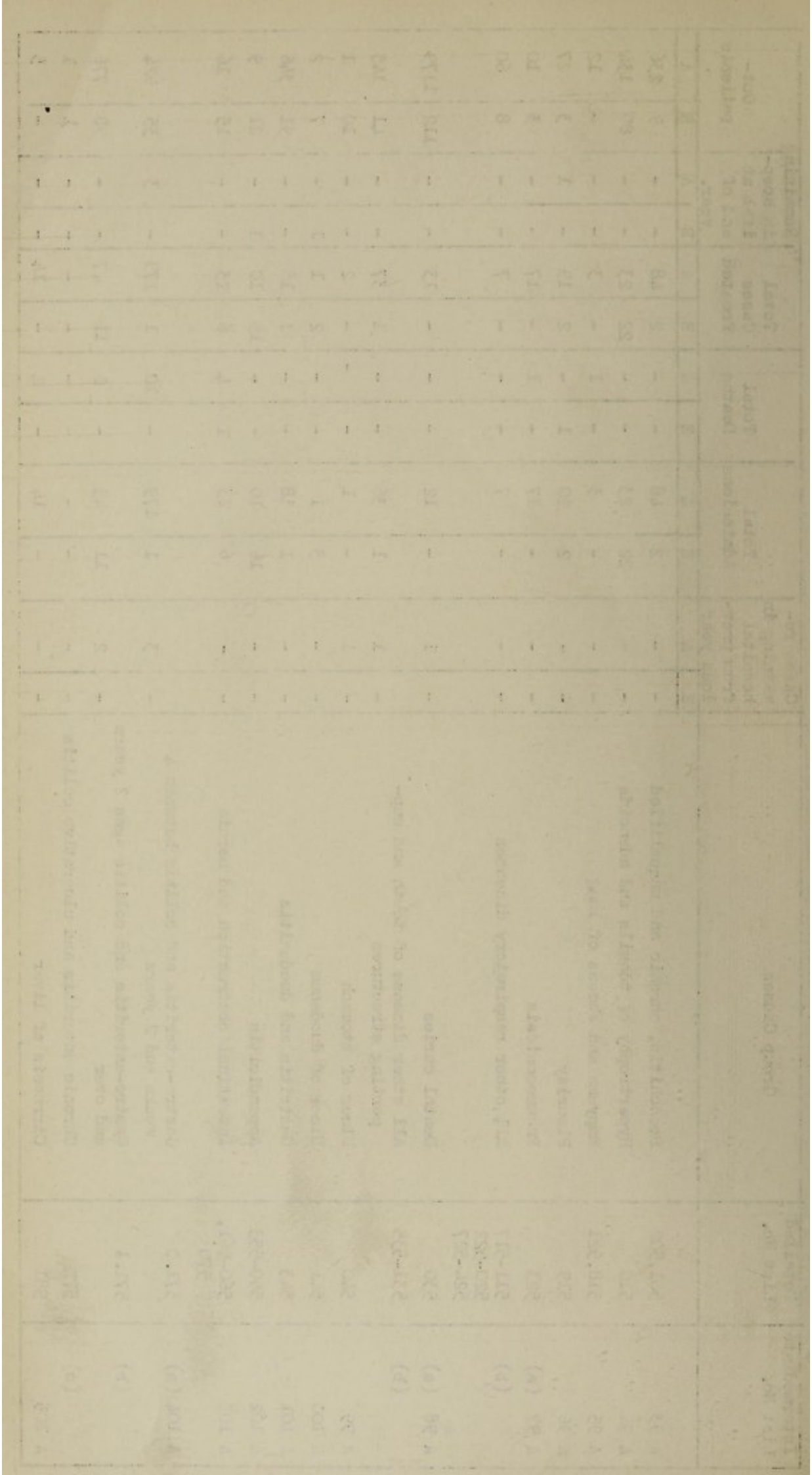
Intermediate List No.	Detailed List No.	Groups Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 54	177	Malignant neoplasm of prostate	-	-	-	-	-	-	-	-	-	-	-	-
A 55	190-191	Malignant neoplasm of skin	-	-	-	2	-	-	-	2	-	-	-	1
A 56	196,197	Malignant neoplasm of bone and connective tissue	-	-	-	6	-	2	-	6	-	-	-	-
A 57	155-160 164,165, 175,176, 178-181, 192-195, 198,199	Malignant neoplasm of all other and unspecified sites	-	-	-	10	-	2	-	10	-	-	-	7
A 58	204	Leukaemia and aleukaemia	-	-	-	-	-	-	-	-	-	-	-	-
A 59	200-203 265	Lymphosarcoma and other neoplasm of lymphatic and haematopoietic system	-	-	-	-	-	-	-	-	-	-	-	-
A 60	210-239	Benign neoplasms and neoplasms of unspecified nature	-	1	-	81	-	1	-	81	-	1	16	33
A 61	250,251	Nontoxic goitre	-	-	2	3	-	-	2	3	-	-	-	33
A 62	252	Thyrotoxicosis with or without goitre	-	-	-	4	-	-	-	4	-	-	7	15
A 63	260	Daibetes mellitus	-	-	-	1	-	-	-	1	-	-	1	-
A 64 (a)	280	Beriberi	-	-	-	2	-	-	-	2	-	-	-	-
(b)	281	Pellagra	-	1	-	28	-	-	-	25	-	4	1	107
(c)	282	Scurvy	-	-	-	-	-	-	-	-	-	-	-	2
(d)	283-286	Other deficiency states	-	6	-	143	-	16	-	147	-	2	14	174
A 65 (a)	290	Pernicious and other hyperchromic amaemias	-	-	-	1	-	-	-	1	-	-	-	-

Intermediate List No.	Detailed List No.	Group Causes	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
A 65 (b)	291	Iron deficiency anaemia (Hypochromic)	-	-	-	1	-	-	-	-	-	1	3	32
(c)	292,293	Other specified and unspecified anaemias	-	-	-	8	-	1	-	8	-	-	18	16
A 66 (a)	241	Asthma	-	1	2	31	-	-	2	32	-	-	38	58
(b)	240, 242,245, 253,254 270-277 287,289 294-299	All other allergic disorders endocrine, metabolic and blood diseases	-	-	1	5	1	-	1	5	-	-	54	48
A 67	300,309	Psychoses	-	-	-	3	-	-	-	3	-	-	1	-
A 68	310-324, 326	Psychoneuroses and disorders of personality	-	-	7	4	-	1	7	4	-	-	69	99
A 69	325	Mental deficiency	-	-	-	4	-	1	-	4	-	-	-	8
A 70	330-334	Vascular lesions affecting central nervous system	-	-	-	5	-	1	-	4	-	1	1	4
A 71	340	Non-meningococcal meningitis	-	-	-	2	-	1	-	2	-	-	1	1
A 72	345	Multiple sclerosis	-	-	-	-	-	-	-	-	-	-	-	-
A 73	353	Epilepsy	-	1	-	10	-	-	-	11	-	-	3	20
A 74	370-379	Inflammatory disease of eye	-	2	2	126	-	-	2	127	-	1	68	558
A 75	385	Cataract	-	-	-	6	-	-	-	6	-	-	-	11
A 76	387	Glaucoma	-	-	-	-	-	-	-	-	-	-	-	-
A 77 (a)	390	Otitis externa	-	-	11	8	-	-	11	8	-	-	60	83
(b)	391-393	Otitis media and mastoiditis	-	-	-	33	-	-	-	33	-	-	66	271

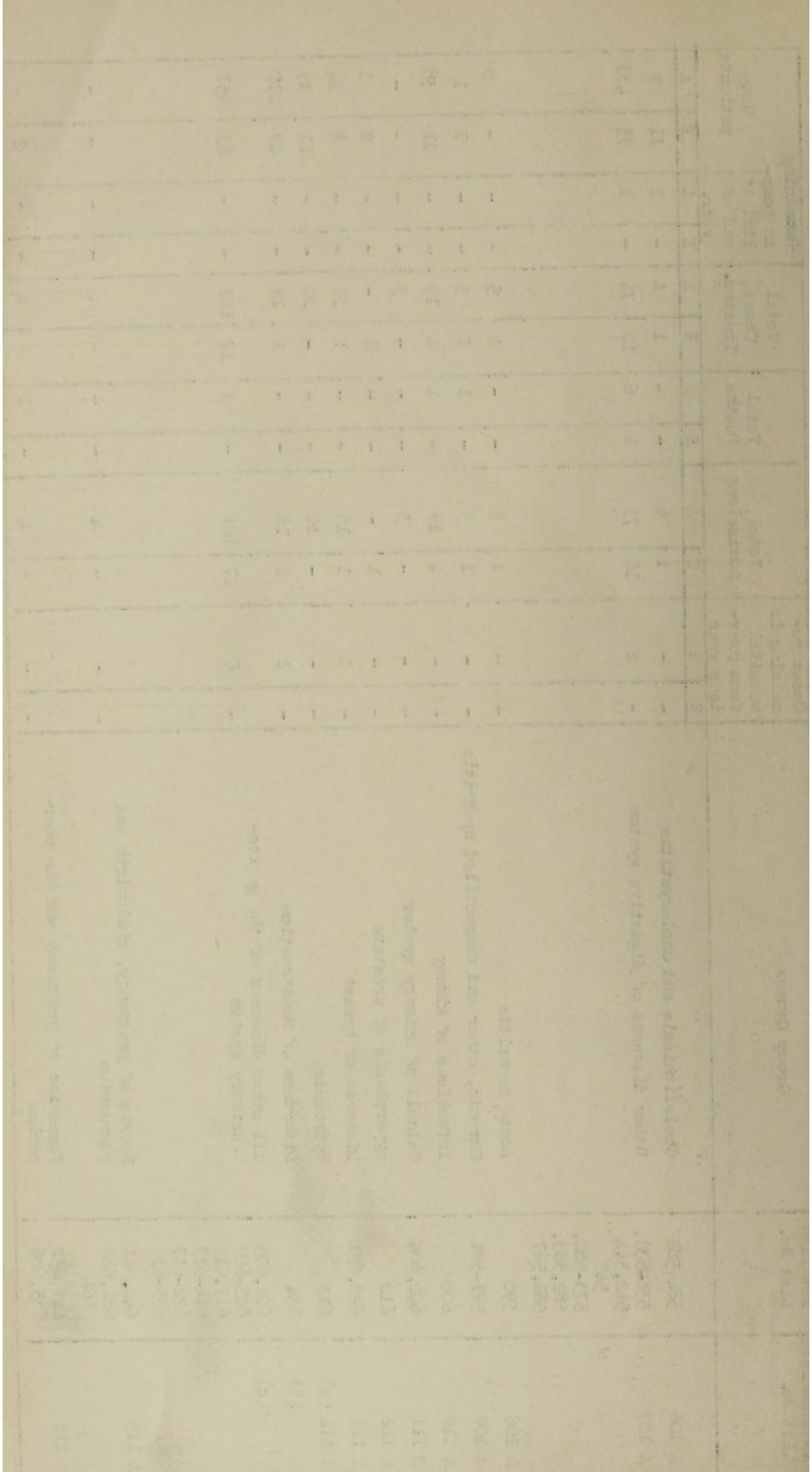


Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients.	
			E	A	E	A	E	A	E	A	E	A	E	A
A 78 (a)	380-384, 386,388 389	All other diseases and conditions of eye	-	1	-	14	-	-	-	15	-	-	28	89
(b)	341,344, 350,352, 354,357 360-369 395,398	All other diseases of the nervous system and sense organs.	-	1	3	16	-	-	3	17	-	-	58	295
A 79	400-402	Rheumatic fever	-	-	2	9	-	-	2	8	-	1	3	12
A 80	410-416	Chronic rheumatic heart disease	1	-	-	32	-	3	1	32	-	-	-	48
A 81	420,422	Arteriosclerotic and degenerative heart disease	-	4	14	42	1	7	4	40	-	6	12	2
A 82	430,434	Other diseases of heart	-	3	-	18	-	1	-	21	-	-	10	152
A 83	440-443	Hypertension withheart disease	-	1	3	2	-	-	3	3	-	-	4	4
A 84	444-447	Hypertension without mention of heart	-	-	1	2	-	-	1	2	-	-	14	6
A 85	45-456	Diseases of arteries	-	-	1	2	-	-	1	2	-	-	2	1
A 86	460-[illegible]9	Other diseases of circulatory system	-	-	10	32	-	1	10	32	-	-	73	37
A 87	470-475	Acute upper respiratory infections	-	-	6	26	-	-	6	26	-	-	241	560
A 88	480-483	Influenza	-	-	10	115	-	-	10	112	-	3	234	1262
A 89	490	Lobar pneumonia	-	1	1	125	-	4	1	123	-	3	6	36
A 90	491	Bronchopneumonia	-	3	2	213	-	7	2	211	-	5	2	206
A 91	492-493	Primary atypical, other and unspecified pneumonia	-	-	9	22	-	1	9	22	-	-	14	2
A 92	500	Acute bronchitis	-	2	7	132	-	-	7	133	-	1	104	2516

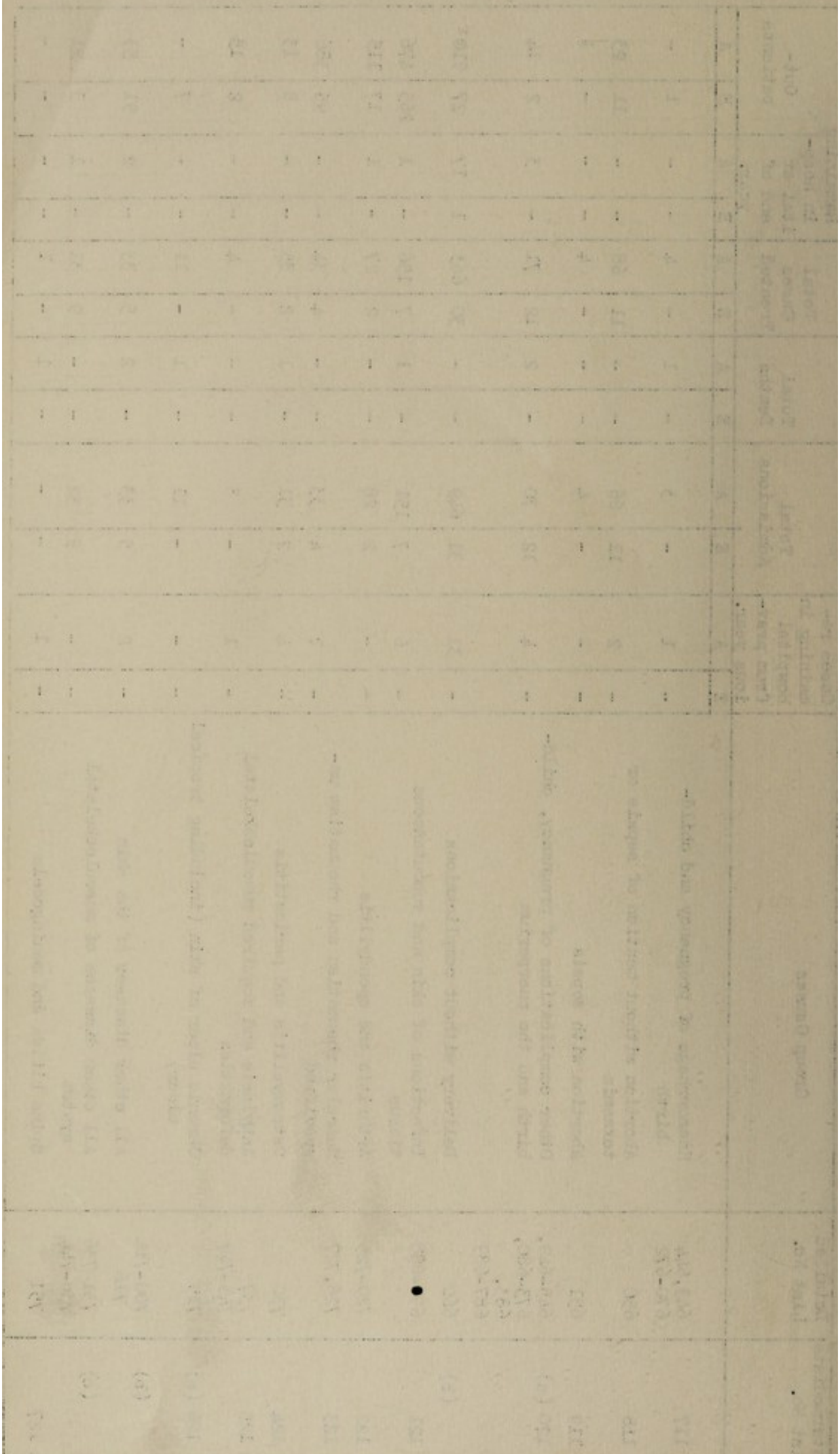
Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Treated		Remaining in hospital at end of year.		Out-patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 93	501,502	Bronchitis, chronic and unqualified	-	-	2	48	-	-	2	48	-	-	9	236
A 94	510	Hypertrophy of tonsils and adenoids	-	-	22	23	-	-	22	23	-	-	80	134
A 95	518,521	Empyema and abcess of lung	-	-	-	3	-	1	-	3	-	-	-	12
A 96	519	Pleurisy	-	-	2	20	1	-	2	19	-	1	3	27
A 97 (a)	523	Pneumoconiosis	-	-	-	17	-	1	-	17	-	-	3	10
(b)	511-517 520-522 524-527	All other respiratory diseases	-	-	-	7	-	-	-	7	-	-	8	60
A 98 (a)	530	Dental caries	-	1	-	12	-	-	-	13	-	-	112	1179
(b)	531-535	All other disease of teeth and supporting structures	-	1	1	36	-	-	1	37	-	-	41	145
A 99	540	Ulcer of stomach	-	1	-	1	-	-	-	2	-	-	10	1
A 100	541	Ulcer of duodenum	-	-	3	1	-	-	2	1	1	-	7	2
A 101	543	Gastritis and duodenitis	-	-	1	18	-	-	1	18	-	-	91	346
A 102	550-553	Appendicitis	-	-	16	10	-	-	15	10	1	-	21	9
A 103	560-561, 570	Intestinal obstruction and hernia	-	-	6	23	1	4	6	23	-	-	15	16
A 104 (a)	571.0	Gastro-enteritis and colitis between 4 weeks and 2 years	-	3	1	179	-	10	1	179	-	3	35	924
(b)	571.1	Gastro-enteritis and colitis ages 2 years and over	-	2	11	45	-	2	11	47	-	-	98	776
(c)	572	Chronic enteritis and ulcerative colitis	-	-	-	-	-	-	-	-	-	-	1	1
A 105	581	Cirrhosis of liver	-	-	-	14	-	2	-	14	-	-	-	5



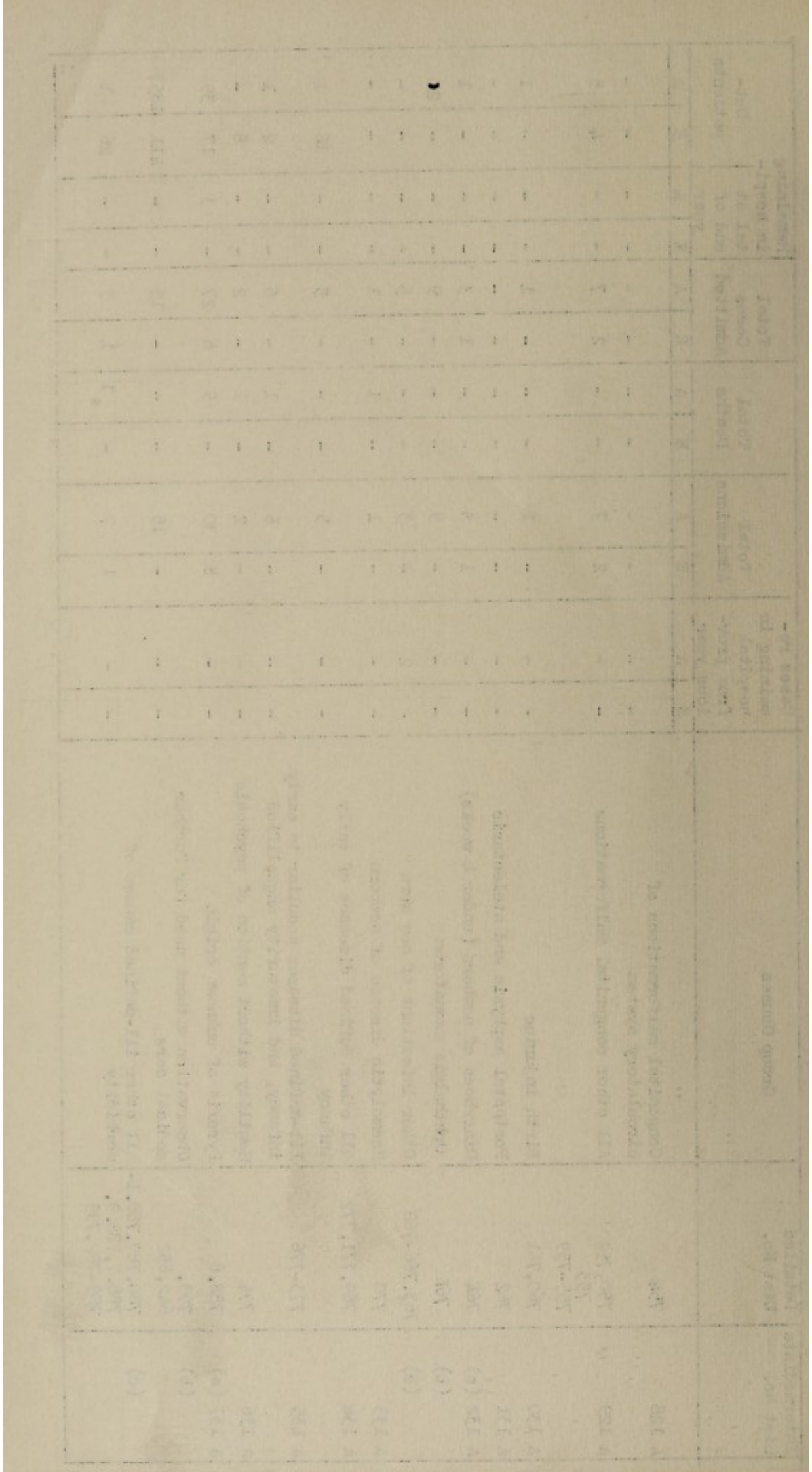
Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Treated.		Remaining in hospital at end of year.		Out-patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 106	584,585	Cholelithiasis and cholecystitis	-	-	1	6	-	-	1	4	-	2	11	2
A 107	536-539, 542,544 545 573-580, 582,583, 586,587	Other diseases of digestive system	-	2	10	73	1	6	10	74	-	1	95	433
A 108	590	Acute nephritis	-	-	1	5	-	-	1	5	-	-	-	9
A 109	591-594	Chronic, other and unspecified npehritis	-	-	1	5	-	1	1	5	-	-	1	1
A 110	600	Infections of kidney	-	-	4	19	-	1	4	19	-	-	11	38
A 111	602,604	Calculi of urinary system	-	-	-	3	-	-	-	3	-	-	-	-
A 112	610	Hyperplasis of prostate	-	-	1	-	-	-	1	-	-	-	2	1
A 113	620,621	Diseases of breast	-	1	1	15	-	-	1	16	-	-	8	24
A 114 (a)	613	Hydrocele	-	-	-	10	-	-	-	10	-	-	11	19
(b)	634	Disorders of menstruation	-	1	2	18	-	-	2	19	-	-	49	210
(c)	601,603 605-609 611,612 614-617 622-633 635-637	All other diseases of the genito-urinary system	-	6	17	181	-	2	17	187	-	-	69	951
A 115	640,641 681,682 684	Spesis of pregnancy, childbirth and puerperium	-	-	-	4	-	-	-	4	-	-	-	-
A 116	642,652 685,686	Toxaemias of pregnancy and the puerperium	-	-	-	4	-	1	-	4	-	-	2	-



Intermediate List No.	Detailed List No.	Group Causes	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
A 117	643,644 670-672	Haemorrhage of pregnancy and child-birth	-	1	-	3	-	1	-	4	-	-	1	-
A 118	650	Abortion without mention of sepsis or toxaemia	-	2	11	66	-	-	11	68	-	-	11	23
A 119	651	Abortion with sepsis	-	-	-	4	-	-	-	4	-	-	-	1
A 120 (a)	645-649, 673-680, 683, 687-689	Other complications of pregnancy, child-birth and the puerperium	-	4	12	70	-	2	12	71	-	3	2	14
(b)	660	Delivery without complications	-	31	31	649	-	-	30	663	1	17	27	910
A 121	690-698	Infections of skin and subcutaneous tissue	-	6	7	151	-	1	7	156	-	1	265	476
A 122	720-725	Arthritis and spondylitis	-	-	2	28	-	-	2	27	-	1	17	115
A 123	726,727	Muscular rheumatism and rheumatism un-specified	-	1	4	33	-	-	4	34	-	-	95	386
A 124	730	Osteomyelitis and periostitis	-	4	2	31	-	1	2	35	-	-	8	13
A 125	737 745-749	Ankylosis and acquired musculoskeletal deformities	-	1	-	3	-	-	-	4	-	-	2	15
A 126 (a)	715	Chronic ulcer of skin (including tropical ulcer)	-	-	-	11	-	1	-	11	-	-	7	-
(b)	700-714 716	All other diseases of the skin	-	2	5	33	-	2	5	33	-	2	91	53
(c)	731-736 738-744	All other diseases of musculoskeletal system	-	-	9	32	-	-	9	31	-	1	3	21
A 127	751	Spina bifida and meningocele	-	1	-	-	-	1	-	1	-	-	-	-

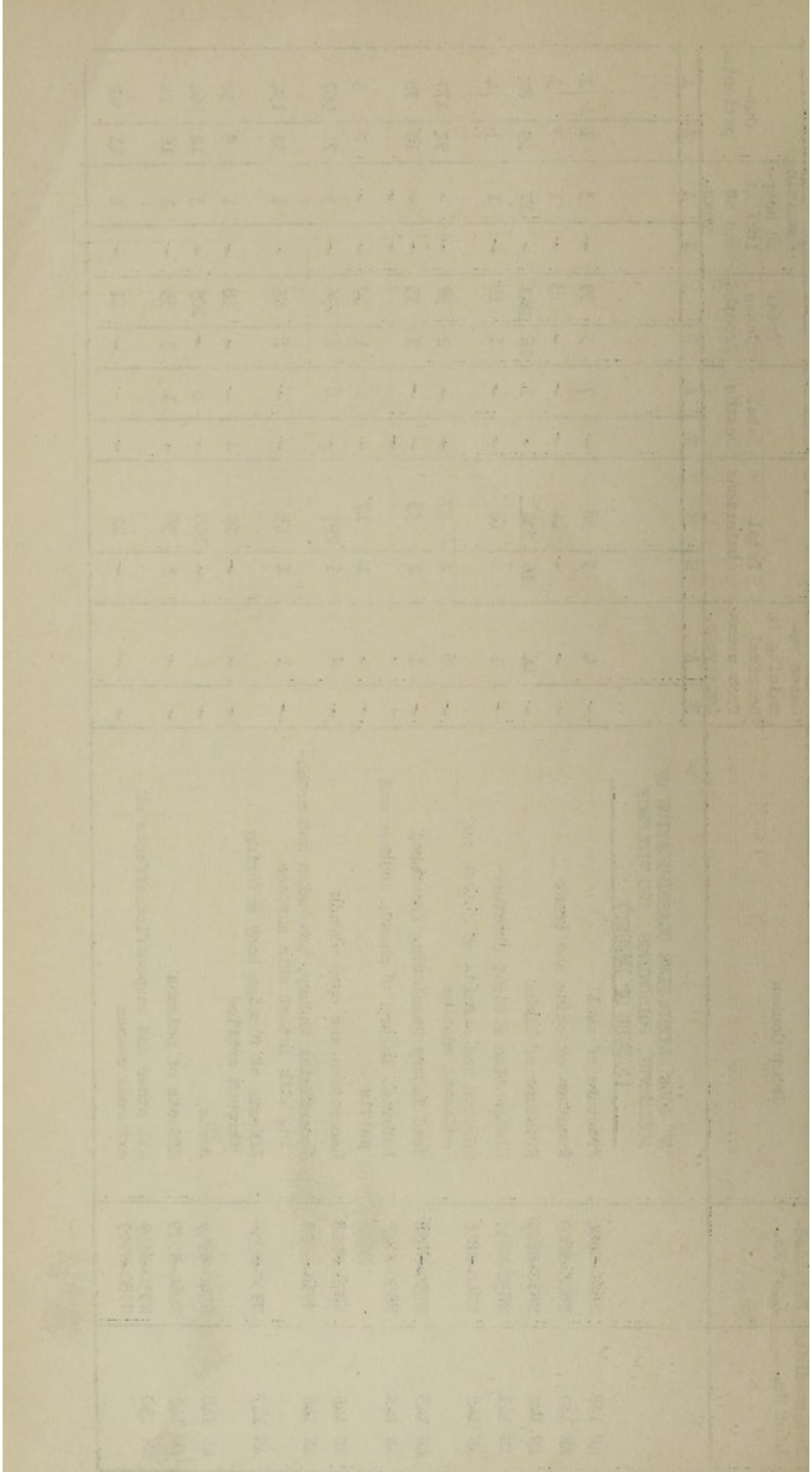


Intermediate List No.	Detailed List No.	Group Causes	Cases remaining in hospital from previous year		Total Admissions		Total Deaths		Total Cases Admitted		Remaining in hospital at end of year		Out-patients	
			E	A	E	A	E	A	E	A	E	A	E	A
A 128	754	Congenital malformations of circulatory system	-	-	-	-	-	-	-	-	-	-	-	-
A 129	750,752 753 755-759	All other congenital malformations	-	-	2	7	-	-	2	7	-	-	4	5
A 130	760,761	Birth injuries	-	-	-	1	-	-	-	1	-	-	-	1
A 131	762	Postnatal asphyxia and atelectasis	-	-	-	-	-	-	-	-	-	-	-	-
A 132 (a)	764	Diarrhoea of newborn (under 4 weeks)	-	-	1	3	-	-	1	3	-	-	-	1
(b)	765	Ophthalmia neonatorum	-	-	-	9	-	-	-	9	-	-	-	2
(c)	763,766-768	Other infections of new born	-	2	-	3	-	-	-	5	-	-	-	-
A 133	770	Haemolytic disease of newborn	-	-	-	1	-	1	-	1	-	-	-	-
A 134	769,771,772	All other defined diseases of early infancy	-	-	-	5	-	-	-	5	-	-	16	1
A 135	773-776	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	-	-	-	6	-	1	-	6	-	-	2	1
A 136	794	Senility without mention of psychosis	-	-	-	2	-	1	-	2	-	-	8	-
A 137 (a)	788.8	Pyrexia of unknown origin	-	-	8	30	-	5	8	27	-	3	17	39
(b)	793, 642,652	Observation without need for further medical care	-	-	-	15	-	-	-	15	-	-	411	1857
(c)	780,787,788.1-788.7,788.9, 789-792,795	All other ill-defined causes of morbidity	-	-	1	7	-	1	1	7	-	-	26	1



Intermediate List No.	Detailed List No.	Group Causes	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
		"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS POISONINGS, AND VIOLENCE (EXTERNAL CAUSE)												
AE 138	E810-E835	Motor vehicle accidents	-	-	6	38	-	-	6	37	-	1	9	14
AE 139	E800-E802 E840-E866	Other transport accidents	-	2	-	56	-	1	-	57	-	1	1	32
AE 140	E870-E895	Accidental poisoning	-	-	2	1	-	-	2	1	-	-	7	19
AE 141	E900-E904	Accidental falls	-	15	21	226	-	-	21	227	-	14	137	380
AE 142	E612	Accident caused by machinery	-	1	-	13	-	-	-	14	-	-	4	14
AE 143	E916	Accident caused by fire and explosion of combustible material	-	6	-	54	-	8	-	57	-	3	6	79
AE 144	E917,E918	Accident caused by hot substance, corrosive, liquid, steam & radiation	-	2	-	45	-	-	-	46	-	1	8	65
AE 145	E919	Accident caused by firearm	-	-	-	4	-	-	-	4	-	-	-	-
AE 146	E929	Accidental drowning and submersion	-	-	-	2	-	-	-	2	-	-	-	-
AE 147	E910,E915, E913-E915, E920-E928 E930-E965	All other accidental causes	-	3	7	224	-	-	7	221	-	6	138	571
AE 148	E970-E979	Suicide and self-inflicted injury	-	-	-	1	-	-	-	1	-	-	1	-
AE 149	E980-E985	Homicide and injury purposely inflicted on other persons (not in war)	-	9	-	230	-	10	-	228	-	11	4	183
AE 150	E990-E999	Injury resulting from operations of war	-	-	-	-	-	-	-	-	-	-	-	-
		GRAND TOTAL	1	180	341	4906	5	140	339	4953	3	133	3532	20816
		ATTENDANTS	-	16	17	691	-	-	17	691	-	16	-	-
		RE-ATTENDANCES	-	-	-	-	-	-	-	-	-	-	4654	15529

Intermediate List No.	Detailed List No.	Group Causes	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
		"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE (NATURE OF INJURY)												
AN 138	N800-N804	Fracture of skull	-	4	3	38	-	7	3	39	-	3	1	2
AN 139	N805-N809	Fracture of spine and trunk	-	-	-	14	-	-	-	13	-	1	7	3
AN 140	N810-N829	Fracture of limbs	-	14	16	204	-	1	16	241	-	17	49	87
AN 141	N830-N839	Dislocation without fracture	-	1	1	18	-	-	1	18	-	1	3	4
AN 142	N840-N848	Sprains and strains of joints and adjacent muscles	-	1	2	37	-	-	2	38	-	-	92	177
AN 143	N850-N856	Head injury (excluding fracture)	-	1	2	33	-	-	2	33	-	-	13	78
AN 144	N860-N869	Internal injury of chest, abdomen and pelvis	-	-	1	17	-	1	1	17	-	-	2	5
AN 145	N870-N908	Laceration and open wounds	-	8	6	297	-	1	6	296	-	9	71	587
AN 146	N910-N929	Superficial injury, contusion and crushing with intact skin surface	-	1	1	45	-	-	1	45	-	1	32	134
AN 147	N930-N936	Effects of foreign body entering through orifice	-	-	-	19	-	-	-	18	-	1	6	50
AN 148	N940-N949	Burns	-	8	-	100	-	8	-	105	-	3	12	164
AN 149	N960-N979	Effects of poisons	-	-	3	36	-	1	3	35	-	1	16	24
AN 150	N950-N959 N980-N999	All other and unspecified effects of external causes	-	-	-	42	-	-	-	41	-	1	11	42



APPENDIX II

METEOROLOGICAL OBSERVATIONS.

SWAZILAND 1956.

Station - Mbabane (Highveld)

Alt. 3,700 feet.

Month	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total.	No. of days.
January	24.6	12.8	28.4	8.2	2.72	8
February	25.9	15.2	34.2	10.00	10.57	15
March	23.2	13.9	32.0	8.2	8.78	11
April	24.9	12.5	30.2	9.2	0.32	2
May	21.8	10.7	30.0	4.5	2.09	7
June	19.6	8.5	28.3	4.3	1.20	4
July	24.0	4.0	18.9	7.0	0.51	3
August	25.8	10.4	31.4	4.5	0.25	2
September	22.7	10.7	33.1	5.1	4.06	6
October	24.9	11.4	33.1	4.5	5.98	11
November	25.3	13.0	33.5	7.2	3.15	14
December	25.7	13.4	32.1	9.2	6.98	14.
Total °F	75.25	52.47	93.56	39.7	46.62	97
						/Average 56.46

Station - Bremersdorp (Middleveld)

Month.	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days.
January	29.6	17.3	33.4	13.9	1.05	8
February	29.0	19.2	36.8	15.3	8.98	17
March	28.6	18.9	32.5	14.9	5.3	12
April	28.1	15.2	33.6	11.0	0.19	3
May	25.3	11.4	34.0	4.6	1.98	10
June	28.4	9.0	30.5	7.0	0.49	4
July	24.1	9.1	28.6	5.4	0.57	2
August	27.1	10.6	35.3	3.6	0.06	2
September	25.7	11.2	37.7	6.7	3.10	7
October	26.1	14.2	37.1	6.0	3.98	15
November	27.5	16.0	37.4	12.4	3.24	14
December	27.4	16.4	35.4	13.4	4.05	18
Total °F	80.96	57.27	99.32	40.28	33.01	112.
						/Average 33.78

METEORLOGICAL OBSERVATIONS.

SWAZILAND : 1956.

Station - Hlatikulu (Highveld)

Alt. 3,890 feet

Month	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days.
January	22.7	13.9	27.0	10.0	1.30	6
February	24.1	15.8	30.0	11.0	12.66	15
March	22.4	14.4	26.0	11.7	6.17	7
April	21.6	13.9	28.0	9.0	0.49	4
May	20.3	10.7	26.5	5.0	2.65	9
June	19.9	10.1	24.0	3.0	0.34	1
July	24.5	8.5	24.7	5.5	0.43	3
August	21.0	12.5	29.5	6.0	0.15	4
September	19.8	9.2	31.0	3.5	2.09	7
October	21.2	10.7	32.6	5.8	5.69	19
November	20.9	13.1	31.2	9.0	3.13	15
December	21.6	12.7	29.0	9.4	10.60	21
Total °F	70.9	53.8	70.9	32.54	45.64	111
					/Average 45.85	

Station - Stegi (Lowveld)

Month.	Air Temperature °C				Rainfall	
	Mean Max.	Mean Min.	Actual Max.	Actual Min.	Total	No. of days.
January	23.2	16.2	30.6	12.5	2.15	5
February	24.6	18.1	34.5	14.2	11.38	15
March	26.5	17.8	31.0	13.2	5.85	9
April	23.6	15.2	32.0	10.6	0.00	0
May	23.3	13.0	31.4	6.4	1.50	6
June	22.4	11.8	28.4	6.2	0.41	2
July	21.8	11.3	27.2	9.4	1.52	1
August	25.2	13.1	34.0	6.6	0.33	1
September	26.6	8.6	33.0	3.0	4.06	7
October	23.6	13.2	36.0	6.6	2.48	9
November	26.2	14.9	35.5	11.2	4.84	7
December	25.1	15.7	32.6	11.5	8.39	10
Total °F	75.8	57.32	96.8	32.54	42.91	72
					/Average 29.61	