Annual medical and sanitary report / Swaziland.

SWAZILAND

ANNUAL MEDICAL & SANITARY REPORT

FOR THE YEAR 1960

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S W A Z I L A N D

ANNUAL MEDICAL AND SANITARY REPORT 1960

CONTENTS.

GENERAL REVIEW

Swaziland has an area of 6,704 square miles and is bordered on the north, west and south by the Transvaal, and on the east by Mozambique and Zululand.

The Territory is geographically divided into four well-defined regions, running from north to south, namely the mountainous highveld in the west with an altitude of 3,500 to 5,000 feet; the middleveld with an average altitude of 2,000 feet; the lowveld or bushveld with an altitude of 700 feet to 300 feet, and the Lebombo Plateau on the east, with an altitude of 2,000 feet. Scenically the Territory is one of the most attractive parts of Africa. The highveld has a temperate climate and frosts occur during the winter, The climate of the middleveld is subtropical and that of the bushveld is almost tropical.

Rainfall, which occurs chiefly in the summer, varies between approximately 60" a year in the highveld and approximately 30" a year in the lowveld. Drizzle and mists are frequent in the highveld areas. The country is well-watered by numerous perennial streams and rivers, some of which are of a considerable size and now provide water for three large irrigation schemes which have been established at Mananga in the north-east, at Big Bend in the east (at both of which sugar and rice are grown) and at Malkerns in the centre of Swaziland (which produces rice, subtropical fruit and citrus).

In addition to the irrigation schemes, other important agricultural activities are cattle ranching in the bushveld, subtropical fruit and rice production in the middleveld, in the southern portion of which a considerable amount of tobacco is also grown, and afforestation and sheep farming in the highveld. Significant mining development is at present restricted to the production of asbestos at Havelock Mine in the north west and a small amount of high-grade coal in the bushveld. Iron ore and additional coal deposits are under investigation.

A census held in 1956 gave the total population of Swaziland as 237,041, of which 5,919 were Europeans and 1,378 Eurafricans.

The Swazi are predominantly peasant farmers and livestock owners, and live in "Native Areas", 35 in number, which are scattered throughout the Territory and intersected by European owned land.

Their dwellings for the most part consist of wattle-and-daub structures, or bee-hive huts, and small family collections of these huts are widely dispersed. Other than in the neighbourhood of the European towns, there are no villages.

Whilst the agricultural activities of the Swazi are still, in the main, concentrated on the raising of cattle and goats and the cultivation of maize, the work of the Land Utilization Department is now producing results, and both the standard and scope of Swazi farming are improving year by year.

The medical needs of the Territory are met by Government hospitals at Mbabane (151 beds), Hlatikulu (135 beds), Mankaiana (24 beds) and Pigg's Peak (16 beds); by Mission Hospitals at Bremersdorp (200 beds), Mahamba (73 beds) and

/Stegi .....

Stegi (35 beds); by 10 Government clinics (three of which are maintained by the Swazi National Treasury) and 15 Mission clinics in outlying areas; by the mine hospital at Havelock Mine.; and by medical practitioners, either working on their own or employed by large industrial concerns, who are stationed at Mbabane, Bremersdorp, Pigg's Peak, Stegi, Mhlambanyati, Malkerns, Mhlume, Big Bend, Mliba in the Manzini District and at Sicunusa in the Mankaiana district.

There are, in fact, 34 medical practitioners working in Swaziland at present, four of these who hold foreign unregistrable qualifications being licensed to practice, under the relevant section of the Medical, Dental and Pharmacy Proclamation. There is thus 1 doctor per 6,972 persons in Swaziland, in comparison with the accepted Western European standard of 1 doctor for 1,000 patients and the "South of the Sahara" average of 1 doctor per 10,000 patients. The 634 hospital beds in use in Swaziland to-day give a ratio of 2.3 beds per 1,000 persons, as against the Western European average of 4 - 5 beds per 1,000.

The Mbuluzi Leper Hospital, situated 20 miles from Mbabane and run by the Nazarene Mission, with the assistance of a Government grant, copes most adequately with the decreasing number of lepers in the Territory.

There is no special tuberculosis hospital, but four general hospitals have separate tuberculosis wards. There is also no mental hospital, and dangerous and violent lunatics are detained and treated in sections of the gaols.

The British Red Cross Society is now running Infant Welfare Clinics at Mbabane, Hlatikulu, Stegi and Pigg's Peak, at which most useful work is being done.

The Public Health services of the Territory are centered at the Health Office, Bremersdorp, under the control of the Medical Officer of Health, in whose charge are also the small clinical pathology laboratory, the malaria control unit and the bilharzia investigational unit.

The recently formed independent Medical Association of Swaziland, whose members include private practitioners, medical missionaries and Government medical officers, hold quarterly meetings, which are usually well supported and which make up to some extent for the lack of professional contact so common in territories such as Swaziland.

Details of the staff at the various Government hospitals and at the Health office will be found in Appendix I, page 18.

The staffing position became easier during 1960, and all Medical Officer and Nursing Sister posts were filled. Applications for employment from African Staff Nurses continued to pour in and far exceeded the demand. A suitable candidate for the vacant post of Laboratory Technician was found, and the Pathology Laboratory was moved from Bremersdorp to Mbabane and re-opened in August.

The training of nurses in Swaziland is carried out at the Ainsworth Dickson Training College attached to the Raleigh Fitkin Memorial Hospital. Two courses of nursing are carried out, the lower standard Swaziland Executive Nursing Committee course and the High Commission Territories Nursing Council course, which is considered to be on a par with the South African Nursing Coun cil course. It is hoped that when sufficient numbers of girls of the

/educational .....

educational standard required for the High Commission Territories Nursing Council come forward, the Swazialnd Executive Nursing Committee course will fall away.

The Ainsworth Dickson Training College can train sufficient nurses for the needs of Swaziland.

Dispensers and Laboratory Assistants are trained at Government Hospitals as required, whilst the Medical Assistants on the staff of the Medical Department received their training in Nyasaland.

Since the successful malaria control programme has resulted in the near-eradication of the disease from Swaziland, tuberculosis is now the main health problem, and it is hoped to start a control programme with the assistance of World Health Organisation shortly. Bilharzia is widespread among the indigenous population, and whilst the clinical manifestations are usually minimal, it is felt that a potentially very dangerous position exists at the irrigation schemes, and a careful watch is being kept on conditions here. Mal nutrition and infantile diarrhoea are important causes of ill-health and death amongst young children, the former being especially noticeable at the post-weaning age, and heart-diseases and pneunomia also rank high as causes of death.

The conditions which cause most attendances at Government hospitals are acute upper respiratory tract infections, diseases of the genito-urinary system, minor disorders of the digestive system, venereal disease, rheumatism and infections of the skin and subcutaneous tissues. Among the infectious diseases, enteric fever was again prevalent, although the majority of cases occurred sporadically.

Public Health duties are carried out by a Health Inspector and the Medical Officer of Health, but coverage at present can only be sketchy, as it is considered essential that the two other Health Inspectors devote their full time to malaria and bilharzia under the guidance of the Medical Officer of Health.

In September, the Medical Officer of Health represented Swaziland at a very successful conference on bilharziasis organised by the South African Council for Scientific and Industrial Research, during which the Bilharzia Research Unit at Nelspruit, Onderstepoort Veterinary College, and the Snail Identification Centre at Potchefstroom University were visited.

MALARIA CONTROL

Collection of Mosquito after Test Spraying of Hut

The Collection of Blood Slides

CHAPTER I - PUBLIC HEALTH

(i) COMMUNICABLE DISEASES.

(a) Malaria

The malaria position remained satisfactory at the beginning of 1959/60 transmission season, with only the occasional indigenous case of malaria occurring, and with the efforts of the Malaria Control Unit being concentrated on finding and treating the fairly numerous cases of malaria among the immigrant labourers coming into Swaziland from Mocambique. No hut spraying or other active control measures were carried out as entomological evidence did not warrant it.

In April, however, after heavy rains following a particularly dry period, intense mosquito breeding occurred, and the vector mosquito was found again inside huts, in rapidly increasing numbers in strong contrast to its behaviour over the past few years when it appeared to have assumed an outdoor mode of existence after some years of hut spraying with insecticides. This change was first noticed south of the Usutu River on our eastern border, and subsequently the same conditions were found patchily distributed over a large part of the central and southern areas of the lowveld. This observation was rapidly followed by an outbreak of malaria in this area, 80 new infections occurring in a month. All possible staff were moved to the area and all cases were treated with anti-malarial drugs, which were also issued, as a preventative measure, to all inhabitants of areas in which the vector mosquito had taken to the huts. The position was fairly rapidly brought under control.

The World Health Organisation was kept informed of the position, and shortly after the outbreak started, an Entomologist was seconded to Swaziland to study the position. Later in the year, when it becamce necessary to train additional microscopists to deal with the large number of blood slides being submitted for examination, the World Health Organisation again rendered valuable assistance by seconding a Laboratory Technician to Swaziland for three months to train the microscopists. This assistance was greatly appreciated.

During the complete transmission season, 16,158 blood slides were examined, and of these 286 were positive for malaria parasites. Of the positives, 168 were immigrants and 111 were indigenous cases, and 7 were untraced. These figures, of course, include the cases which occurred in the outbreak.

The detailed report of the activities of the Malaria Control Unit will be found in Appendix II, at page

(b) Tuberculosis.

It is disappointing to report that up to the end of 1960 there had been no further news of the W.H.O-sponsored Tuberculosis Control Scheme for Swaziland. Tuberculosis is undoubtably Swaziland's chief health problem, and present methods of dealing with the condition consist of making full use of an inadequate number of hospitals beds and having to rely on unsatisfactory out-patient treatment for the majority of patients. These methods leave much to be desired, and must be superceded by some adequate territorial scheme with the minimum of delay.

/The number .....

The number of cases of tuberculosis dealt with at Government and Mission hospitals during 1960 was 1,129 as against 1,015 in 1959, a continuation of the steady rise in the number of cases seen annually. Of these 1,129 cases, 795 were of the pulmonary type.

(c) Bilharzia.

Further surveys on the incidence of this disease and on the presence of vector snails were carried out during 1960 and the Territory has now been covered. It is hoped that it will be possible to collate the findings of these surveys shortly.

The result of the investigations has been as expected, namely that in the middleveld and bushveld there is an infection rate of between 20% and 40% of children and young adults, and that the incidence subsequently decreases with age. Little intestinal bilharzia is seen, except in the north eastern corner of the Territory, where the incidence may go up to 40%.

The ill-effects that this condition has on the indigenous population are difficult to determine. The great majority of patients presenting for treatment at hospitals are young boys suffering from haematuria, and the serious late-effects of the disease, which have been described in other countries, are seldom encountered.

As in previous years, when microscopic examinations of stool specimens were carried out during surveys, a record was also kept of ova, other than those of Sh. mansoni, and the results over the past 3 years have been as follows:-

	1958	1959	1960
Number of specimens examined	567	2633	1358
Ova of Ascaris lumbricoides	13.1%	11.9%	5.9%
" " Taenia Saginata	9.4%	5.6%	2.8%
" " Trichuris Trichuria	8.6%	3.9%	0.7%
" " Strongyloides spp.	2,4%	1.6%	0.4%
" " Entrobius vermicularis	1.6%	0.2%	1.3%
" " Ancylostoma Duodenale	0.5%	-	-
" " Fasciola Hepatica	0.4%	-	-
" " Hymenolepis nana	0.2%	-	0.06%
" " S. Matthei	-	-	0.57%

The full report of the surveys carried out will be found in the report on Bilharzia Investigational activities in Appendix III on page 30.

(d) Influenza.

The increase in the number of cases of influenza reported annually since the epidemic of Asian Influenza in 1957 continued in 1960, when 4,848 cases, with one death, were recorded. The figures for 1959, 1958 and 1957 were 3,579, 3,807 and 3,390 respectively.

A truer picture is probably obtained, however, by combining figures recorded for all acute upper respiratory tract infections, coryza, acute bronchitis and influenza, thus allowing for differing diagnostic practices. These combined figures clearly bring out the significant increase in the numbers of this type of case seen. The reason for

/this .....

this increase is not clear, unless it is still the result of the arrival of the "new" influenza virus in 1957. The figures in question are -

1951	3,078 cases
1952	3,728 "
1953	4,481 "
1954	4,464 "
1955	3,500 "
1956	5,213 "
1957	9.327 "
1958	12,750 "
1959	12,557 "
1960	15,048 "

In 1960 cases occurred throughout the year, with the usual rise in the number of cases in the late winter and spring, but there was no epidemic in the sense of the 1957 epidemic, and again the majority of the cases were very mild.

(e) Leprosy

There is little change to report as far as leprosy is concerned. The number of patients at the Mbuluzi Leprosy Colony at the end of 1960 was 33, as against 30 at the end of 1959, there having been 21 admissions and 8 re-admissions, and 23 discharges, two deaths and 1 desertion during the year.

It was most gratifying to hear the name of Miss Cole, Matron of the Leper Colony since 1948, in the Birthday Honours announced in June.

The full report on the Colony by the Medical Superintendent of the Raleigh Fitkin Memorial Hospital will be found in Appendix IV at page 33.

(f) Smallpox.

No cases of Smallpox occurred in Swaziland during 1960 for the eleventh year in succession. Reports were received of several suspicious cases, all of which on investigation turned out to be severe Chicken-pox or Impetigo contagiosa.

During the year only 324 routine vaccinations were carried out, but it is planned to appoint a full-time vaccinator shortly and to step-up considerably the annual number of vaccinations carried out.

(g) Acute Poliomyelitis.

One case of acute poliomyelitis, which ended fatally, was reported during the year.

It is hoped to be able to offer the oral vaccine to susceptible age groups next year, but it is probable that it will be offered only in urban areas and at other areas with concentrations of population.

(h) Enteric Fever.

The number of cases of enteric fever recorded during 1960 was again considerably higher than usual, 191 cases with 14 deaths being recorded at Government and Mission hospitals, as against 141 cases in 1959 and as against the expected annual total of 60 - 80 cases. The cases were widely scattered, and although no definite epidemic

/occurred .....

occurred, there was some concentration of cases in the Malkerns Valley, at Big Bend, and in the Mhlatuzane River-Sitobela-St. Phillips areas. Whilst a low standard of village hygiene is the basic cause of the trouble, the unusually dry summer probably contributed.

As many of the cases as possible were investigated, and polluted water supplies or flies were usually incriminated as causal agents.

In certain areas, where it was considered that an outbreak threatened, immunisation of the local population with T.A.B. vaccine was carried out, and 19,973 injections were given for this purpose, as follows:-

	First Injection	Second Injection
Malkerns Valley	2,706	2,366
Bremersdorp	2,981	2,477
Big Bend	2,121	1,508
Nqabaneni	184	178
St. Phillips	109	109
Mathapha High School	266	272
Mathapha Junior School	439	434
Mhlume	906	906
Maluta	1,051	960

(i) Diphtheria.

Only one case of Diphtheria, which ended fatally, was reported from Government and Mission hospitals during 1960.

(j) Meningococcal Meningitis accounted for four sporadic notifications only in 1960.

(k) Other Infectious Diseases.

Measles and Whooping Cough again accounted for many cases of illness amongst children, the number of cases reported being 875 and 781 respectively, as against 768 and 467 in 1959.

(l) Dysentery and Gastro-enteritis.

The position as far as the bacillary and amoebic dysenteries are concerned remained much the same, but there was a further increase in the number of cases of infantile gastro-enteritis reported. This condition remains one of the greatest dangers to infant life, and the chief cause is, of course, ignorance of the dangers of the lack of hygiene as applied to infant feeding.

The number of cases in infantile gastro-enteritis treated at Government and Mission hospitals over the past three years is as follows:-

1958 - 2,895 cases with 42 deaths,
1959 - 3,597 cases with 48 deaths,
1960 - 4,327 cases with 48 deaths,

(m) Venereal Diseases.

The figures for the number of cases of gonorrhoea and syphilis treated at Government and Mission hospitals and

/Clinics .....

Clinics over the past 10 years brings out clearly the rise in the number of cases of gonorrhoea dealt with combined with the fall in the number of cases of syphilis. This picture has occurred in many other countries and is, strangely enough, the result of effective treatment with modern antibiotics, in that the quick cure of gonorrhoea is followed so often by rapid re-infection, in those so inclined, whereas in the past, treatment of gonorrhoea was a prolonged affair often ending in a state of chronic infection. On the other hand, these repeated courses of antiboitics are probably sufficient to cure the many syphilitic infections contracted at the same time as the gonorrhoeal infection but not apparent when the gonorrhoea is treated.

The figures referred to above are as follows:-

	Syphilis	Gonorrhoea
1951	4,608	1,934
1952	4,349	2,096
1953	3,908	1,973
1954	4,098	1,884
1955	3,270	2,420
1956	2,376	2,407
1957	2,151	2,592
1958	2,379	2,719
1959	1,806	3,005
1960	1,117	3,820

The number of subsequent attendances for treatment in 1960 were

Gonorrhoea	5,038
Syphilis	1,540

The figures above are obtained from hospitals and clinics and will not agree with those given in the nosological returns in Appendix VIII, page 47 , which are for hospitals only.

(n) Tapeworm Infestation.

The campaign against tapeworm infestation has continued,

/even if .....

even if with some loss of momentum, and an attempt is made to treat all cases found at hospitals or clinics - and all cases encountered by the Malaria Control Unit field-staff. The treatment used is a single dose of dichlorophen. The number of cases treated in 1960 was as follows:-

By Malaria Assistants and Health Office staff	5,181
At Government Hospitals and Clinics	1,846
	7,027

The total number of cases treated since the campaign started in 1957 is as follows:-

1957	9,434
1958	6,951
1959	7,674
1960	7,027
	31,086

The percentage of beef carcases found to be affected with "measles" at the Bremersdorp Abattoir over the past 8 years is -

1953	18%
1954	10%
1955	10%
1956	12%
1957	8%
1958	7%
1959	5%
1960	4%

Similar figures, in respect of Swaziland carcases, obtained from the Livestock and Meat Industries Control Board in Durban are as follows:-

1956	9.7%
1957	Figure not available
1958	6.89%
1959	6.28%
1960	6.9%

(ii) NUTRITIONAL AND DEFICIENCY DISEASES.

The number of cases of "nutritional disease" recorded in 1960 was much the same as in the previous year - although the number of deaths reported rose from 37 to 66. The cases dealt with in 1960 were as follows:-

Malnutrition, unqualified,	1,040	cases	with	30	deaths
Pellaga	693	"	"	5	"
Kwashiorkor	423	"	"	30	"
Scurvy	40	"	"	1	"

while the total number of cases of "nutritional disease" recorded annually since 1952 is -

/1952 .....

1952	147
1953	286
1954	388
1955	330
1956	454
1957	1,010
1958	1,459
1959	2,010
1960	2,196

The increase in the number of cases of pellagra commented on in 1959 was maintained in 1960.

Owing to pressure of other duties, it was not possible to continue the medical examination of school children, with particular reference to their nutritional state, which was started in 1959. It is hoped, however, that in conjunction with the Natal University, a Nutritional Survey will be carried out in Swaziland in 1960.

Swaziland's request to U.N.I.C.E.F. for a supply of milk powder for distribution to malnourished children is still under consideration.

(iii) SANITATION, WATER SUPPLIES AND FOOD SUPPLIES.

General public health duties are carried out by one Health Inspector under the guidance of the Medical Officer of Health. The coverage possible with this arrangement is inadequate and it is hoped to increase the establishment of Health Inspectors shortly.

The Mbabane Sewerage Works were completed in the first half of the year and are now serving Mbabane Hospital, St. Mark's School, premises in the central area of the township and part of Msunduza Township. This great improvement was overdue, as the recurrent overflowing of french drains at Mbabane Hospital and St. Mark's School was creating an impossible situation. The need for a similar scheme in Bremersdorp is becoming urgent.

Otherwise the general sanitary conditions in the townships have remained fairly satisfactory. Conditions in the rural areas, however, are far from satisfactory, as water supplies are often polluted and excreta disposal is non-existent. Furthermore, labourers employed by certain industrial concerns in the early stage of their development and by contractors working on these concerns are housed under very poor and insanitary conditions in some cases, although the permanent housing at the larger concerns is of a high standard. These matters are at present receiving attention and it is hoped to be able to include safeguards in an employment proclamation.

The report on public health matters by the Health Inspector concerned will be found in Appendix V page 37 .

(iv) HEALTH EDUCATION

As in previous years the Medical Officer of Health and his staff lectured to the Cattle Guards in training at the Mpisi Government Farm, and to the agricultural trainees at the Mdutshane Experimental farm, on such subjects as sanitation, milk supplies, meat inspection, water supplies, venereal diseases, enteric fever, diphtheria, smallpox, tuberculosis, malaria and bilharzia.

/A Medical ,.....

A Medical Department exhibit illustrating malaria control, bilharzia, meat inspection and similar matters was put up at the Swaziland Show at Bremersdorp in July by the Medical Officer of Health and his staff, and again attracted much interest.

CHAPTER II : HOSPITALS AND CLINICS.

(a) Government Hospitals and Clinics.

The most urgent hospital requirements are extensions and alterations of Mbabane Hospital. This hospital has a most unsatisfactory design, and bed space is now grossly overcrowded, and outpatient, theatre and x-ray services are wholly inadequate. With the considerable increase in the size of Mbabane, and with the development of large industries in the neighbourhood of Mbabane, the position must be rectified rapidly, failing which a breakdown in the hospital services in this area seems inevitable.

The hospital is built on an awkward sloping site and owing to the presence of staff quarters adjoining the hospital, the possibilities for expansion are limited. To make matters more difficult, the fundamental design of the present hospital will not allow of "piece-meal" additions to the various hospital departments as they now stand, as this would soon lead to an unworkable and inefficient structure with very poor "circulation".

The position has been put up to the Public Works Department, whose consulting Architect has produced a long term solution of the problem with a plan which includes new and most adequate out-patient-casualty department, theatre and x-ray department, and other services, and which continues to utilize the present wards for the time being, but allows for a new ward block later. The building of these extensions will be an expensive business, but if the plan is not accepted, the "block-by-block" extension of the hospital (and extension is inevitable) will probably eventually cost as much, while leading to a much less efficient hospital. It has not been possible to obtain Colonial Development and Welfare funds for these extensions during the present development period, but funds have been allocated to allow the detailed planning of these extensions to go forward, and additional funds are being sought to provide such temporary accommodation and services as are essential now.

At Hlatikulu Hospital, following the building of new wards and a new out-patient department, the old central section of the hospital has been rehabilitated, and this hospital is now a greatly improved structure.

At Pigg's Peak Hospital much needed extensions and improvements have been carried out in the Out-patient Department; and it is hoped to instal an x-ray machine shortly. C.D.& W. funds are being sought to provide additional ward space at this hospital.

The extensions to Mankaiana Hospital have been completed, and electricity has been installed, resulting in much improved services at this hospital.

During 1960 work continued at full pressure at all Government Hospitals - and the number of admissions rose from 9,583 to 10,307, whereas the daily average number of

/in-patients .....

in-patients (with a total of 326 beds) was 455. Out-patients dealt with at Government hospitals increased from 86,572 to 94,014, while those seen at Government clinics rose from 64,513 to 70,102.

Details of the number of patients dealt with at the various hospitals and clinics, and of the establishment and bed state of the hospitals, will be found at Appendix VI, page 43 , whilst the detailed nosological returns will be found at Appendix VIII, page 47.

(b) Mission Hospitals and Clinics.

Following the completion of 3 new ward blocks at the Raleigh Fitkin Memorial Hospital in Bremersdorp, one old ward was converted into a Physiotherapy Department, whilst another was radically rehabilitated into a modern surgical ward. The extensions and alterations carried out at this hospital over the past 3 years (to which Government contributed funds) have been most successful and have vastly improve this hospital.

A new wing has been built onto the Good Shppherd Hospital at Stegi, which will eventually house additional wards and an operating theatre.

The volume of work carried out at Mission Hospitals and Clinics was maintained during 1960, admissions increasing from 6,562 to 6,905 and hospital out-patients from 37,711 to 38,560, while clinic out-patients increased from 30,385 to 35,340.

Details of the numbers of patients seen at the various Mission Hospitals and clinics will be found in Appendix VII, page 45 .

(c) Havelock Mine Hospital.

The number of Africans who were not mine employees or their dependants who were treated at Havelock Mine Hospital during 1960 was as follows:-

Number of Admissions	242
Daily Average No. of In-patients	5.6
Number of Out-patients -	
New Cases	310
Re-attendances	346.

These figures are substantially the same as in 1959 with the exception of Out-patient Re-attendances which have increased greatly.

CHAPTER III

MATERNITY AND CHILD WELFARE SERVICES.

Ante-natal clinics are held at all Government and Mission Hospitals and at most of the outlying clinics. In previous years, it was necessary to encourage Swazi women to come into hospital for their confinements, but the maternity wards are now so popular that overcrowding may shortly necessitate restricting admissions to primiparous women and others in whom difficulty is expected.

/The number .....

The number of antenatal examinations and confinements carried out during the past 4 years has been as follows:-

	Antenatal Examinations				Confinements			
	1957	1958	1959	1960	1957	1958	1959	1960
Mbabane Hospital	1998	2212	2068	1704	512	586	436	611
Hlatikulu Hospital	3456	3183	1373 ++	1315 ++	189	196	247	375
Mankaiana Hospital	422	486	694	1798	136	147	154	171
Pigg's Peak Hospital	-	99	636	807	-	27	146	168
Raleigh Fitkin Mem. Hospital and Clinics	4557	4888	4998	5722	794	853	1054	1276
Good Shepherd Hospital	+	467	1242	791	+	137	137	132
Mahamba Methodist Hospital	+	712	584	550	+	71	76	84

\+ = Figures not available
++ = Excludes figures for c linics which were previously included.

Child Welfare clinics have continued at the Nazarene Mission health centres and also at the Government clinics at Sipofaneni, Mhlotsheni and Lubuli where the following attendances were recorded -

Sipofaneni	1807
Mhlotsheni	1196
Lubuli	560

CHAPTER IV - TRAINING OF AFRICAN NURSES.

Nurses are trained at the Ainsworth Dickson Nursing College, attached to the Raleigh Fitkin Memorial Hospital at Bremersdorp, for both the High Commission Territories Nursing Council Certificates and the Swaziland Executive Nursing Committee Certificates. The minimum educational standard for the latter is only Standard 6, and it is hoped that as more candidates with Junior Certificate come forward to train under t he High Commission Territories Nursing Council, the training of lower standard will fall away.

The well-equipped Ainsworth Dickson Nursing College is capable of training sufficient nurses for the needs of Swaziland.

The results of the examinations held during the year were as follows:-

/HIGH .....

HIGH COMMISSION TERRITORIES NURSING COUNCIL.

	Passed	Failed
Preliminary Examination in General Nursing November 1960	12 (2 with honours)	1
Final Examination in General Nursing, November 1960	1	-
Midwifery, Part II	4	-

SWAZILAND EXECUTIVE NURSING COMMITTEE.

Preliminary Examination in General Nursing November 1960	2	9
Final Examination in General Nursing November 1960	8	-
Midwifery Examination	6	2

The number of nurses in training at the end of December 1960 was

General Nurses	1st Year	25
	2nd Year	14
	3rd Year	11
	4th Year	2
Midwifery Students		8
		60

CHAPTER V - LABORATORY SERVICES.

It was not until August 1960 that it was possible to fill the vacant Laboratory Technician post, by the appointment of a suitably qualified married woman. As the lady in question lived in Mbabane, it was necessary to move the Laboratory from the Health Office in Bremersdorp to Mbabane, where it is now working satisfactorily.

The number of investigations carried out from August 1960 to December 1960 was as follows:-

V.D.R.L.	1,954
Agglutination Reactions	135
Blood Cultures	39
Urine Cultures	6
Stool Cultures	11
Swab Cultures	7
Blood Counts	22
Blood Grouping	1
C.S.F. Examinations	3
Sensitivity Tests	7
Sputum Examinations	176
Other Smears for Bacteriological Examination	7
Blood Slide Examinations (Malaria and Relapsing Fever)	20
Parasitology of Stools	27
Water Analysis	27
	2,441

The routine examination of blood slides by the Malaria Control Unit, and of urines and stools for bilharzia are not, of course, included, here, but in the sections of this report dealing with these conditions.

The small laboratories at Mbabane and Hlatikulu Hospitals, where simple routine examinations are carried out, continue to fill a very useful purpose, and during the year dealt with the following specimens:-

	Mbabane Hospital	Hlatikulu Hospital
Urine Examinations (including microscopy)	5,828	2,188
Stool Examinations	1,175	415
Sputum Examinations	3,770	439
Other Bacteriological Smears	3,211	121
Full Blood Counts	361	27
Red Cell Counts	-	34
White Cell Counts	67	118
E.S.R.	2,139	280
Blood Films for Parasitology	51	-
Other Microscopic Examinations	1,288	84
	17,890	3,418

Histological examinations and the more complicated procedures were, as before, carried out at the South African Institute for Medical Research, Johannesburg.

CHAPTER VI - VITAL STATISTICS.

The registration of births and deaths is complusory only in the case of European inhabitants of Swaziland, and available statistics are consequently of limited value. They are as follows:-

Total European population (1956 Census)	5,932
European births 1960	136
European deaths 1960	31
Deaths of infants under 1 year in 1960	3

The causes of the European deaths were as follows:-

/Diseases .....

Diseases of the heart and circulatory system	7
Cerebral Haemorrhage	7
Accidental	4
Pneumonia	3
Malignant Neoplasms	3
Leukaemia	1
Parkinson's Disease	1
Duodenal Ulcer	1
Uraemia	1
Septicaemia	1
Gastro-enteritis	1
Suicide	1

CHAPTER VII - PRISONS.

Medical inspections of the prisons at Mbabane, Hlatikulu Bremersdorp and Stegi are carried out at regular intervals, and sanitary conditions have been satisfactory throughout the year, and the health of the prisoners has also been satisfactory, in spite of a degree of overcrowding in most gaols.

At Mbabane Gaol a small sick-bay has been constructed and a warder has been trained as a medical orderly at Mbabane Hospital. Sick parades are now held in the gaol, which is a great advance on the previous system when large batches of prisoners wereled up to the out-patients department of Mbabane Hospital, both from the point of view of lessening the congestion at the out-patient department and from the point of view that reporting sick automatically meant a day off work for the prisoner.

The majority of unmanageable lunatics in the Territory are confined to Mbabane Gaol where they are under medical treatment.

CHAPTER VIII - LEGISLATION.

The only legislation affecting the Medical Department enacted during 1960 was

Government Notice No. 66, Government Hospital Charges (Swaziland)

/Chapter IX .....

CHAPTER IX - FINANCE.

The financial statement of the Department for the period 1st April 1959 to 31st March 1960 is as follows:-

Revenue		£	
Hospital, Health Centre and other fees		6,450	
Expenditure.			
Personal Emoluments		70,882	
Travelling Expenses		2,028	
Allowances and Fees		2,447	
Maintenance of Patients		27,738	
Laboratory Services		1,020	
Maintenance of Mental Patients		3,086	
Hospital Equipment		3,951	
Subsidies for Medical Services: Church of the Nazarene Mission of South Africa £17,106; Roman Catholic Mission £100; Catholic Mission, Stegi £2,223; Mahamba Methodist Mission £2,003; Our Lady of Sorrows Clinic £200; Red Cross £75		21,707	
Anti-Malaria Measures		108	
High Commission Territories Nursing Council		243	
Upkeep of Grounds		191	
Upkeep of X-ray Plants		1,536	
Other Transport Charges		4,257	
Bilharzia Control		1,091	
Upkeep of Vehicles		935	
Contributions to C.D.W. Schemes:			
D.2713 Anti-Malaria Campaign		9,287	
D.2715 Leper Settlement		1,545	
Purchase & Replacement of Vehicles		1,029	
Vaccinations		14	153,095
C.D.W. Schemes Expenditure			
D.2713 Anti-Malaria & Public Health		9,856	
D.2715 Leper Settlement		1,625	
		11,481	
LESS Territorial Contribution			
D.2713 Anti-Malaria & Public Health	9,287		
D.2715 Leper Settlement	1,545	10,832	649
Total expenditure on Medical & Sanitary Services			£153,744
Total Revenue of Territory			£1,453,570
The relationship of medical expenditure (excluding C.D.W. Fund expenditure) to total revenue of Territory			10.8%

CONCLUSION.

I wish to express my sincere appreciation of the loyal and efficient manner in which members of the Department carried out their duties during the year, often under extremely difficult conditions.

B. D. WHITWORTH

DIRECTOR OF MEDICAL SERVICES.

APPENDIX I.

MEDICAL DEPARTMENT STAFFING (AS AT 31.12.60)

(a) DIVISION I AND II.	Name	Station
Director of Medical Services	Dr. B.D. Whitworth	Mbabane
1 Medical Officer of Health	Dr. R. D. Gauldie,	Bremersdorp
8 Medical Officers	Dr. L.E.D.F. Joubert	Mbabane
	Dr. J. F. Alexander	Mbabane
	Dr. F. Friedman	Pigg's Peak
	Dr. J.M.L. Klopper	Hlatikulu
	Dr. A. M.Nxumalo	Mbabane
	Dr. L. Becker	Mbabane
	Dr. D.M. Macfadyen	Hlatikulu
	Dr. S. R. Platman	Hlatikulu
2 Pharmacist/Storekeepers	Mr. J.L.van der Vyver	Hlatikulu
	Mr. G. R. Gibbon	Mbabane
2. Matrons	Miss E.M. Bailey	Mbabane
	Miss J. Wilson	Hlatikulu
12 Nursing Sisters	Miss M.A.von Wissell	Mbabane
	Miss D.E. Burns	Hlatikulu
	Miss A. Martin	Hluti Health Centre
	Mrs. P.T. Mdiniso	Mbabane
	Mrs. A.C.T.Mabuza	Mbabane
	Mrs. M.Clements	Mbabane
	Mrs. S.M. Cooper	Mbabane
	Mrs. A.L. Ogden	Hlatikulu
	Mrs. S. Dowling	Goedgegun
	Mrs. D. Bell	Mbabane
	Miss M.Dolman	Hlatikulu
	Miss J.I.Richardson	Mbabane
1 Radiographer	Miss R. J. O'Shea	Mbabane
1 Laboratory Technician	Mrs. M. E Gibbon	Mbabane
3 Health Inspectors	Mr. G.J. van Eeden	Bremersdorp
	Mr. D. M. Eckard	Bremersdorp
	Mr. J. F. Bateson	Bremersdorp
1 Smear Examiner	Mr. P. M. Matthews	Bremersdorp
3 Medical Assistants	Mr. J. B. Mwali	Hlatikulu
	Mr. E. S. Njenje	Mbabane
	Mr. A.F.K. Phiri	Mankaiana
1 Housekeeper (Mbabane Hospital)	Mrs. M. McCall	Mbabane
1 Accountant	Mr. J. H. Thomas	Mbabane
1 Lady Clerk	Mrs. D.M.C. Lane	Mbabane
1 Clerk (Higher Grade)	Mr. M. Mdiniso	Mbabane

(b) DIVISION III.

3 Dispensers
2 Pupil Dispensers
3 Laboratory Assistants
4 Clerks
72 Nurses
4 Outpatient Attendants.

/Ambulance .....

Division III continued

7 Ambulance and Truck Drivers
1 Senior Malaria Assistant
10 Malaria Assistants
4 Dispensary Orderlies
9 Ward Attendants
20 Orderlies
3 Nurse Aides
12 Laundresses
2 Seamstresses
2 Office Messengers
1 Night Watchman
5 Groundsmen
6 Cooks
3 Assistant Cooks
5 Housemaids

APPOINTMENTS, PROMOTIONS, RESIGNATIONS, RETIREMENTS IN DIVISION I AND II DURING 1960.

APPOINTMENTS.

Mrs. D. Bell	Nursing Sister	1.1.60
Miss M. Dolman	Nursing Sister	29.6.60
Miss J. I. Richardson	Nursing Sister	1.8.60
Mrs. M. E. Gibbon	Laboratory Technician (part-time)	2.8.60
Dr. D. M. Macfadyen	Medical Officer	21.4.60
Dr. S. R. Platman	Medical Officer	6.10.60
Mr. P. M. Matthews	Smear Examiner	1.12.60

RETIREMENTS.

Mrs. H. Perkins	Nursing Sister	30.9.60
Dr. O. Arnheim	Medical Officer	on leave pending retirement.

RESIGNATIONS

Dr. H. Seidel	Laboratory Technician	16.1.60
Miss J. Wilhelm	Nursing Sister	27.1.60
Dr. M. Bedford	Intern	31.1.60

MALARIA CONTROL

Search for Mosquito larvae

Spraying Team in Discussion with Chief

APPENDIX II

MALARIA IN SWAZILAND.
1959-60 TRANSMISSION SEASON.

1. CLIMATIC CONDITIONS.

From the following monthly resume of the weather conditions it is quite clear that we have experienced a reasonably dry season. The rainfall for each month from August 1959 to January 1960 was much below the usual for each respective month. Subsidiary showers during January had very little effect on t he depleted watercourses (dams and rivers) and the average fall was only 54% of the mean for the territory. Heavier rains fell during the 3rd week of the month.

During February the first good r ains fell throughout the territory and an average of 132% of the mean had been registered. Ideal breeding places were thus established, particularly in the Stegi bushveld. Puddles, dams etc. were constantly replenished by intermittent showers.

The temperature and rainfall figures for the whole territory are not recorded here on account of the recording system being changed as from January 1960.

The following table reveals a study of the position at five bushveld stations, three of which are situated in the bushveld zone where the outbreak of malaria occurred towards the latter part of the season.

It is interesting to note that the rainfall at St. Phillips and Gollel was actually 100% higher during the months of February-March-April than normally recorded for this period.

Place & Altitude		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
Bar Circle 800 ft	Mean	1.8	2.5	3.7	3.5	4.1	3.9	2.3	2.1	23.90
	1958-59	1.28	1.59	3.92	3.33	4.29	4.27	2.96	0.0	21.64
	1959-60	1.62	2.26	1.02	4.40	2.26	3.36	3.04	4.09	22.05
Crookes 500 ft.	Mean	1.3	1.7	2.9	3.5	3.4	2.4	2.5	1.4	19.10
	'58-59	0.57	2.50	4.49	5.04	1.42	4.39	2.40	0.0	20.81
	'59-60	1.32	2.05	1.10	3.52	1.65	3.89	3.25	3.55	20.33
St.Phillips 600 ft.	Mean	1.1	2.0	3.3	3.6	4.1	3.1	2.4	1.7	21.30
	58-59	0.81	1.74	4.04	4.46	1.37	3.79	2.58	0.0	18.79
	59-60	1.24	1.91	2.01	3.18	2.30	6.23	4.24	3.60	24.71
Gollel 600 ft	Mean	1.4	2.1	2.9	3.7	3.1	3.2	1.9	1.5	19.80
	58-59	1.59	1.81	4.49	3.78	3.80	1.72	1.00	0.12	18.31
	59-60	1.98	3.04	3.90	3.09	0.39	6.80	2.50	3.18	24.88
Stegi 2200 ft.	Mean	1.7	2.9	4.1	4.6	5.4	5.0	4.6	2.2	30.5
	58-59	1.78	0.99	5.17	5.35	6.37	4.25	2.71	0.59	27.21
	59-60	2.21	2.09	1.64	4.07	2.98	4.46	4.43	4.92	26.80

N.B. Figures are underlined where the actual amount of rain recorded exceeds the normal for that month.

/Comparing .....

Comparing the actual amount which fell during the 1959-60 rainy season with the normal or mean for the season, the southern half of the Swaziland lowveld was generally found to have been wetter, whereas the top of the Lebombo had been drier.

For the period September to January inclusive in the 1959-60 rainy season all stations received well below average rainfall, although at some, notably Gollel, individual months were sometimes above average. But the opposite conditions occurred for the period February to April inclusive. All stations during that time received above average rainfall.

2. POPULATION/HUT COUNT.

During the first week of August 1959, all the field staff were gathered at Bremersdorp for the annual meeting, Problems were discussed and talks and practical demonstrations were given on the various aspects of their duties.

The population and hut count of the area to be covered by surveillance was then carried out, with the following results -

Area No.	No.of Huts	Adults	Child	Babies	Total Population.
1.	9796	5496	5167	1092	11,755
2.	4827	2397	3245	396	6,038
3.	1920	1526	1471	371	3,368
4	2425	1813	1645	260	3,718
5	6439	4029	4180	858	9,067
6	4423	2783	4342	823	7,950
7	4711	5145	3361	739	9,245
8	2293	1637	1632	374	3,643
9	4670	3471	2051	694	6,216
10a	4409	2834	1714	1179	5,727
10b	6406	4328	3053	1695	9,076
11	2859	2034	1217	940	4,191
Farms	705	1965	388	-	2,353
Big Bend	1655	2656	649	111	3,416
S.I.S.	987	1323	388	94	1,705
Mhlume	527	1983	243	-	2,226
	59052				89,694

3. SURVEILLANCE.

A mobile unit consisting of 6 men conducted surveillance work on European owned farms and also assisted in entomological work, such as "night-catches" on a few occasions.

Under normal conditions it took them 30 days to work through the territory. This period was extended to six weeks during the rainy periods.

Routine surveillance of all "Native Areas" throughout all the bushveld areas was continued on the same lines as reported previously. It has, however, been found that, with the available transport (bicycle) and the vast areas to be covered the staff could not cover their respective areas in the required fortnightly intervals. This matter may have to be reviewed.

/Owing .....

Owing to practical difficulties the intervals between visits to farms have been too long and surveillance work is to be intensified by utilizing an additional vehicle and engaging more staff during the next season.

4. ROUTINE BLOOD SLIDES.

Infants	1191	No. Positive	8
Children	8390	" "	65
Adults	4787	" "	166
	14368	No. Positive	239

GROUP SURVEYS

Infants	130	No. Positive	nil
Children	958	" "	nil
Adults	150	" "	nil
	1238	" "	nil

SURVEY - "CRAMMOND EARTH MOVERS".

Total 246 No. Positive 4

ABERCORN DRIFT SURVEY

Total 170 No. Positive 4

HOSPITAL SLIDES.

Total 136 No. Positive 28

TOTAL SLIDES FOR 1959/60 SEASON

Total 16,158 No. Positive 286.

The "breakdown" of these positive slides, as to origin, was as follows:-

Of extra-territorial origin	168
Indigenous	111
Untraced	7
	286

5. MOZAMBIQUE BORDER.

Precautionary measures at Matanjeni, the anauthorised entrance between Swaziland and Mozambique, has been continued.

A blood slide was taken from each person entering the territory who was also dosed with antimalarial drugs.

The results of this work are tabulated as follows:-

/Matenjeni .....

MATENJENI (Entrance to Swaziland)

MONTH	No. of people staying in Swaziland for longer than one day	Visiting Store & return to P.E.A. same day	Immigrants seeking work in Swaziland	In transit to Union of S. Africa for work	Total No. of People Seen	Results of Blood Slides Negative	Results of Blood Slides Positive
1959							
August	10	6	-	-	16	14	2
September	7	16	7	29	59	55	4
October	15	27	4	14	60	58	2
November	24	39	1	13	77	73	4
December	20	47	2	10	79	75	4
1960							
January	8	12	11	17	48	47	1
February	33	45	18	14	110	107	3
March	15	67	17	14	113	106	7
April	8	27	-	23	58	42	16
May	23	47	2	35	107	101	6

Percentage "positives" - Average for 10 months 7.2%
For April 1960 38%

6. ENTOMOLOGY

The following table indicates the results of "test-spraying" of living quarters by the surveillance staff.

RECORD OF SPRAY-TESTS AND ANOPHELINE MOSQUITOS COLLECTED DURING THE SEASON

	1959 Sep	Oct	Nov	Dec	1960 Jan	Feb	Mar	Apr	May	June	Total
No. of huts tested	200	879	956	1140	1059	838	1023	805	768	420	7988
MOSQUITO SPECIES.											
A.gambiae	-	-	3	30	2	3	553	877	779	613	2860
A.funestus	-	-	-	-	-	1	2	-	-	-	3
A.pretoriensis	-	-	-	2	1	8	1	2	-	-	14
A.maculipalpis	-	-	-	-	-	1	-	-	-	-	1
A.marshalli	-	-	1	-	10	-	1	-	1	-	13
A. coustani	-	-	2	-	-	9	1	3	1	-	16
A.squamosus	-	-	-	-	-	2	-	-	11	-	13
A. rufipes	-	-	1	-	1	-	1	-	-	-	3
A. demeilloni	-	-	1	4	-	-	-	-	-	-	5
A. leesoni	-	-	-	-	-	1	-	-	-	-	1

During December 1959, a team of W.H.O workers, consisting of Dr. Cavallier (Malariologist), Mr. Clark (Entomologist), Mr. Petridez (Technician), visited the area with the object of assessing Malaria. It was on their recommendation that the entomological observations (spray-testing of living quarters) were reduced considerably.

During the 1958/59 season a total number of 12,785 huts were tested, whereas only 7,988 spray-tests were made during

1959/60. With reference to the suggestion of the W.H.O Malaria Assessment Team, that more time and attention should be devoted to the parasite (blood taking, location of immigrants, etc) and that the entomological work should be curtailed, it was felt that this would undoubedtly have been the ideal in any area where the parasite could be eliminated entirely, but that Swaziland unfortunately is confronted by

(a) A 150 mile uncontrolled borderalong the Mozambique territory where no malaria control has yet been done,
(b) A fair number of un-co-operative farmers,
(c) A section of un-co-operative Africans inspired by religious ideas.

With the exception of two unoccupied huts at Nkambeni, in which 30 A. gambiae were found during a test spray in December, this vector appeared in negligible numbers in living quarters during the period September 1959 - February 1960, throughout the territory.

Particular attention was given to the Nkambeni area and no further signs of A. gambiae entering huts, had been found for the remainder of the season.

On the 24th March 1960,during surveillance on farms along the Usutu River, close to the Lebombo poort (Big Bend area) an average of one A. gambiae was found per hut out of a total of 30 huts spray-tested. At the same time an average of 10 per hut appeared on the farm known as "Umfula". All these huts had been treated with B.H.C. during December 1958.

The behaviour of A. gambiae appeared different to what we have experienced in our sprayed areas during the past.

Residual spraying of this area was delayed in order to give an entomologist from W.H.O an opportunity to study the mosquito in all its phases.

Whilst this very important scientific work was being done the local population was protected by regular issues of Daraprim and Chloroquine.

During the first week of April the numbers of A. gambiae increased to 3 per hut on the farms and crown land surrounding "Umfula" and on the latter farm, with its poorly drained swampy land, 80 A. gambiae appeared per hut.

During investigations which followed even larger numbers of mosquitoes entered the human habitation and Mr. Clark, the W.H.O. entomologist, was able together valuable information on feeding and resting habits of A. gambiae.

It was interesting to note that large numbers of this malaria vector were collected by our staff in outside shaded shelters in that area.

Mr. Clark's report is not yet available.

The normal winter conditions usually experienced in June had very little effect on the mosquito population at "Umfula" and theyestill appeared at the rate of 60 per hut by the end of June. B.H.C was then applied to all the huts in this complex.

During the first week in April, A. gambiae also appeared in huts in increasing numbers over a very widely scattered area, extending from the Ingwavuma River in the south, the

/new coal .....

new coal mine at Maloma, and in a widely scattered area of the Stegi bushveld up to the Stegi-Bremersdorp road with its main concentration along the lower Nyetane River.

By that time fresh infections of malaria occurred at various places, Maloma Coal Mine, Nyetane, Mateta, Langa and Mpolonjeni.

Residual spraying of such a vast area was considered impractical at this stage and the liberal distribution of drugs was resorted to, to deal with the emergency.

All available staff and transport was used in the drug campaign, which was carried out on an organised basis.

The entire area, described above, including the European farms, was covered by our drug staff each fortnight and each individual, within reason, received attention.

A certain amount of difficulty was experienced by religious objectors. This matter was reported and it is hoped that we will have more support from the African Authority in future.

NIGHT CATCHING.

On account of the staff, normally used for night catching, being occupied on more intensive surveillance work, the night catching was not conducted at such regular intervals and places as was planned at the beginning of the season.

At first it was only possible to do "night-catching" in addition to the normal investigation procedures, at places where malaria cases occurred, namely at the Tambankulu estates (two fresh infections), the Hope area at Kubuta and also at the Mhlatuzane area near Sinceni.

As reflected in the attached table, no "man-fed" gambiae were found at any of these places. Drugs were, however, issued and no further cases occurred at these points.

During February, we were able to do a series of night catches at the Nyokanyoka River, Nkambeni area.

This place was selected because we had a high concentration of A. gambiae feeding on cattle during the 1958-59 season and also because 30 A. gambiae were found in two newly built huts, on only one occasion, during December 1959. Since then no vectors were to be found in huts.

Precipitin tests revealed negative results for human blood.

Night catching was also arranged at Vickery's farm at Malkerns, following the finding of two A. funestus adults by the surveillance staff and complaints received from the African residents. No further vectors were to be found.

Since the outbreak of malaria occurred at Big Bend towards the end of March, all available staff was directed on the drug campaign and night-catching investigations were only continued by the entomologist of World Health Organisation, whose records are not yet available.

/Table .....

TABLE SHOWING NIGHT-CATCHES BETWEEN 6.30 PM AND 12 MIDNIGHT.

DATE, PLACE & SPECIES FOUND.	Biting man inside native hut	Resting inside hut	Biting man outside hut	Resting outside hut	Biting Cattle & resting at cattle kraal	REMARKS
13th November 1959						
Tambankulu Estates						
A.Pretoriensis	-	1	1	-	-	No Cattle near Compound
A. Marshalli	-	-	12	-	-	
A.Maculipalpis	-	-	4	-	-	
A. Coustani	-	-	6	-	-	
A. Squamosus	-	-	1	-	-	
16th February 1960						
Hope Area, Kubuta						
A.Pretoriensis	-	-	-	-	21	2 A.gambia found in hut during test-spraying. Early next morning Precipitin tested 1 Mammal (weak feed) 1 Bovid
A.Maculipalpis	-	-	-	-	7	
A. Coustani	-	-	-	-	3	
A. Demeilloni	-	-	-	-	3	
A. Squamosus	-	-	-	-	1	
15th February 1960						
Mhlatuzane Area						
A. gambiae	-	-	-	-	2	Blood result of gambiae - 1 Sheep/goat/ox. 1 unfed
A.Pretoriensis	-	-	-	-	17	
A. maculipalpis	-	-	-	-	1	
A. rufipes	-	-	-	-	3	
A. squamosus	-	-	-	-	1	
12th February 1960						
Border Gate-N. Area						
A. coustani	-	-	-	-	6	Work done by 2 men only.(Not supervised)
A. squamosus	-	-	-	-	6	
29th February 1960						
Nkambene (Nyoka-Nyoka River						
A. gambiae	-	-	-	-	4	3 .ed on bovine blood.
A. squamosus	-	-	3	-	140	
A.maculipalpis	-	-	-	-	1	
A.pretoriensis	-	-	-	-	2	
A. coustani	-	-	-	-	6	
A. nili	-	-	-	-	1	

/30th February .....

DATE, PLACE & SPECIES FOUND.	Biting man inside native hut	Resting inside hut	Biting man outside hut	Resting outside hut	Biting cattle & resting at cattle kraal	REMARKS
30th February 1960						
Nkambeni						
A. gambiae	-	-	-	-	8	8 A.gambiae fed on bovine blood.
A. squamosus	-	-	-	-	194	
A. coustani	-	-	-	-	35	
A.pretoriensis	-	-	-	-	1	
A. nili	-	-	-	-	1	
A. demeilloni	-	-	-	-	1	
A. rufipes	-	-	-	-	2	
3rd March 1960						
Near Nkambeni Dip						
A. gambiae	-	-	-	1	9	1 A.gambiae bovine blood. 1 unfed.
A. squamosus	-	-	-	-	9	
A. coustani	-	-	1	-	-	
A. nili	-	-	1	-	1	
A. rufipes	-	-	-	-	2	
A. funestus	-	-	-	-	3	2 A.funestus fed on bovine blood
10th March 1960						
Vickery, Malkerns.						
A. coustani	9	-	140	-	-	Spray-tested 19 huts early next morning. Found 1 coustani 3 marshalli 1 " 3 culicine
A. marshalli	15	-	151	-	-	
A. squamosus	3	-	33	-	-	
A. theileri	1	-	-	-	-	
A. rufipes	-	-	6	-	-	
A.pretoriensis	-	-	3	-	-	
1st June 1960						
Nkambeni						
A. gambiae	-	-	-	-	2	
A. coustani	-	-	-	-	4	
A. squamosus	-	-	-	-	1	
SUMMARY						
A. gambiae	-	-	-	1	25	
A. funestus	-	-	-	-	3	
A.pretoriensis	-	1	4	-	41	
A. coustani	9	-	147	-	54	
A. marshalli	15	-	163	-	-	
A. squamosus	3	-	37	-	439	
A. theileri	1	-	-	-	-	
A.maculipalpis	-	-	4	-	9	
A. nili	-	-	1	-	2	
A. rufipes	-	-	6	-	7	
A. demeilloni	-	-	-	-	4	

/Larvae .....

LARVAE COLLECTING.

The incidence and distribution of A. gambiae larvae coincides with our findings in the previous season and is detailed as follows:-

ANOPHELINE MOSQUITO LARVAE.

SPECIES	1959 Oct	Nov	Dec	1960 Jan	Feb	Mar	Apr	May	June	TOTAL
A. gambiae	4	115	69	134	98	122	319	396	16	1273
A. funestus	-	8	3	4	-	19	-	-	-	34
A. pretoriensis	185	401	81	288	75	329	59	12	-	1430
A.maculipalpis	28	164	4	27	70	75	19	-	-	387
A. rufipes	8	80	-	80	20	55	80	50	-	373
A. squamosus	4	8	12	17	-	30	8	126	5	210
A. Squam.Var.Cyd.	-	-	-	-	3	-	7	-	-	10
A. marshalli	17	2	5	1	-	-	-	-	-	25
A. coustani	23	33	-	25	20	66	33	30	-	230
A. de Meilloni	1	1	-	-	-	6	-	4	-	12
A.longipalpis	1	-	-	-	-	8	-	-	-	9
A. pharoensis	-	-	-	26	16	2	12	-	-	56
A. cinereus	5	-	-	-	-	-	-	4	-	9
A. theileri	-	-	-	1	-	-	-	-	-	1
A. listeri	6	-	-	-	-	-	-	-	-	6
A. leesoni	-	-	-	-	5	-	-	-	-	5

PRECIPITIN TESTS.

Specimens of blood derived from malaria vectors, found during hut "test-spraying" and also by "night-catching", were analysed by the Lister Institute for Preventive Medicine.

The results are interesting in that the A. gambiae were found to revert back to feeding on man in the Stegi district, as compared to the northern areas, Nkambeni, they still appear to prefer cattle blood.

RESULTS OF PRECIPITIN TESTS.

Date	Place	Method of Collection	Species	Bloodmeal Result.
15.2.60	Mhlatuzane Area	Resting outside	1 A.gambiae	1 Sheep/Goat/Ox
18.2.60	Kabuta Hope "	Spray catch	1 A.gambiae	1 Mammal
"	" " "	" "	1 A.gambiae	1 Bovid
"	Mpaka (Stegi bushveld)	" "	2 A.gambiae	2 Bovine
"	" " "	" "	1 A.gambiae	Unidentified Bovid
25.2.60	Nkambeni	" "	1 A.gambiae	1 Bovine
29.2.60	" (night-catch)	Resting outside	12 A.gambiae	12 Bovine
"	" " "	Resting in hut	1 A.gambiae	1 Mammal
3.3.60	" " "	Resting outside	5 A.gambiae	5 Bovine
"	" " "	" "	3 A.gambiae	3 Bovine
4.3.60	" " "	" "	1 A.funestus	1 Bovid
"	" " "	" "	2 A.gambiae	2 Bovine
13.3.60	" (spray-catch)	Spray-catch	2 A.gambiae	Negative
13.3.60	Sicaweni	" "	1 A.gambiae	1 man
"	" "	" "	7 A.gambiae	7 mammal
"	" "	" "	4 A.gambiae	4 bovine

/Sipofaneni .....

Date	Place	Method of Collection	Species	Bloodmeal Result.
21.3.60	Sipofaneni Area	Spray-catch	10 A.gambiae	10 man
24.3.60	Pacardi Est. (Usutu Farm)	" "	5 A.gambiae	5 "
"	Usutu Planters (Usutu Farm)	" "	2 A.gambiae	2 "
"	Poortsicht Farm Big Bend	" "	2 A.gambiae	2 "
"	Harmony Farm, Big Bend	" "	8 A.gambiae	8 "
"	" " "	" "	1 A.gambiae	1 Bovine
"	" " "	" "	1 A.gambiae	1 Dog
"	" " "	" "	1 A.funestus	Negative
25.3.60	Umfula Planters, Big Bend	" "	16 A.gambiae	16 Man
"	Marhsall Campbell Big Bend	" "	7 A.gambiae	7 "
			2 A.gambiae	2 "
"	Nyetane Native Area	" "	1 A.gambiae	1 "
"	Picardi Est. (Pig Bend)	" "	6 A.gambiae	6 "
12.4.60	Mpaka	" "	3 A.gambiae	2 " 1 Bovid
"	Nkambeni	" "	1 A.gambiae	1 Man
23.5.60	Langa, Stegi bushveld	" "	11 A.gambiae	11 Man
"	Mahuku " "	" "	4 A.gambiae	3 man 1 mammal
16.5.60	Ndlovina Stegi bushveld	" "	9 A.gambiae	7 man, 1 bovid 1 unfed
20.5.60	Mbuta	" "	2 A.gambiae	2 man
23.5.60	Langa, Stegi bushveld	" "	5 A.gambiae	5 man
19.5.60	Guquka Area	" "	11 A.gambiae	6 man, 4 bovid 1 un-identified bovid
20.5.60	Mbutu Area	" "	5 A.gambiae	5 man
23.5.60	Mahuku Area	" "	6 A.gambiae	5 man 1 unid-entified bovid,
25.5.60	Gundwini Area	" "	1 A.gambiae	1 bovid

G. J. VAN EEDEN

HEALTH INSEPCTOR.

" " " "

APPENDIX III

REPORT ON BILHARZIA INVESTIGATION ACTIVITIES.

BILHARZIA SURVEY

The territorial survey was continued during the year but had to be interrupted on occasions on account of other more urgent work. The schedule which follows gives the results of the surveys carried out.

PLACE	SNAIL SURVEY		BILHARZIA INCIDENCE SURVEY S. HAEMATOBIUM				S. MANSONI			
				Percentage +ve				Percentage +ve		
	PHY	BIOM	No.examined	Total	0-10 yrs	11-20 yrs	No.examined	Total	0-10 yrs	11-20 yrs
Mliba/ Croydon Stokodo River	P+	NF	141	31.2	24.4	34	141	0	0	0
Mliba/ Croydon Black Umbuluzi	P+	P								
Mliba, Impala Ranch, By special request.	NF	NF	26	15.4			16	6.25		
Mliba/ Luve 8 Dams	NF	NF								
Nomahasha Stream 11 miles away	P	P								
Dwaleni Mahosha River	P+	NF								
Dwaleni-Makonza	NF	NF	150	28.7	14.5	43.2	150	0	0	0
Mahamba-Mbukwane	NF	NF	120	5	3.3	6.6	120	0	0	0
Hlatikulu Town	NF	NF	150	12	4	20	150	0	0	0
Bremersdorp Peebles N.9	NF	NF								
Mankaiana Ntondozi Usutu River	P	NF								
Mankaiana Gege, nr. Mankaiana	P	NF								
Mankaiana Gege, Trib. of Ngwempisi	NF	P								
Mankaiana Gege, Siounusa.	NF	NF	120	15	5.9	18.6	120	0	0	0

/Mankaiana .....

PLACE	SNAIL SURVEY		BILHARZIA INCIDENCE SURVEY S. HAEMATOBIUM				S. MANSONI			
					Percentage +ve				Percentage +ve	
	PHY	BIOM	No. examined	Total	0-10 yrs	11-20 yrs	No. examined	Total	0-10 yrs	11-20 yrs
Mankaiana Town	NF	NF	150	14	15.3	13	150	0	0	0
Usutu Forests Usutu River	P	NF								
Usutu Forests Dam nr. Orchards	P	NF								
Usutu Forests	NF	NF	116	8.6	7	9	113	0	0	0
Mhlume, Resurvey 4 Dams	NF	NF								
Luve/ Bekinkosi Streams	P+	NF								
Herefords Mayiwane Dam	P	P	118	63.5	50	75.8	118	25.4	16	34
Endlalambe 5 m N. of Mayiwane	NF	NF	50	58	44.4	73.9	50	18	7.4	30.4
Ngonini/ Pigg's Peak Stream nr. Ngonini	P+	NF								
Pigg's Peak Town	NF	NF	130	14.6	9.3	21.8	130	3.8	6.6	0
Pigg's Peak Komati Valley	NF	NF	100	7	10.5	4.8	100	3	2.6	3.2

P = Present
NF = Not found
P+ = Present and Shedding Cercariae

PHY = B. Physopsis
BIOM = Biomphalaria

During the microscopic examination of stool specimens carried out during the above survey, the presence of other parasitic helminths was also noted and the particulars of the 1,358 specimens which contained ova other than S. Mansoni were as follows:-

Ova of Ascaris Lumbrocoides	present in	5.93%	of specimens examined
Ova of Taenia saginata	"	"	2.83%	"	"	"
Ova of Entrobius vemicularis	"	"	1.34%	"	"	"
Ova of Trichuris trichuria	"	"	.59%	"	"	"
Ova of S. Matthei	"	"	.47%	"	"	"
Ova of Strongyloides spp.	"	"	.35%	"	"	"
Ova of Hymenolepis nana	"	"	.06%	"	"	"

/Experiments .....

EXPERIMENTS.

1. On the 6th May it was attempted to infect a white rat with cercariae from Physopsis snails collected in the Mzimnene River just below the Bremersdorp Abattoir. As effluent from the abattoir was being discharged into this river, it was reasonable to assume that at least some of the cercariae being shed would have been those of S. Bovis or S. Matthei.

The rat was allowed to paddle in a few inches of infected water for 20 minutes, when he was removed. He immediately showed signs of irrigation by biting his feet and rubbing his nose.

Examination of the rat and his faeces 9 weeks later showed no signs of infection.

Twenty-five urine and thirteen stool specimens taken on 12th May from Africans living on K. S. Sprengles' farm, just below the Bremersdorp Abattoir and using this aforementioned stream, showed no signs of S. Bovis or Matthei, but revealed 48% positive for S. Haematobium and 7.7% (1 out of 13) positive for S. Mansoni.

These snails are apparently not infected with S. Bovis or S. Matthei although a high percentage of cattle slaughtered at the abattoir are infected with this disease.

2. On the 8th and 9th August approximately 3 cubic feet of mud from a dried out pool (adjoining the Mzimnene River near Bremersdorp), densely populated with physopsis and biomphalaria was obtained and screened for snails. The result was that 111 dead biomphalaria, 112 dead physopsis and 7 live physopsis were obtained. Four weeks later these latter were all still alive, after having been placed in water.

3. During December an experiment with a new molluscicide (Bayer 73) was conducted at Swaziland Irrigation Scheme, Mananga. The area involved viz. 9 rice paddies and a canal, was twice surveyed before applying the molluscicide; 10¾ man hours of searching being devoted to each survey. A re-survey will be conducted in January next year to assess the results.

OTHER ACTIVITIES.

1. Talks on Bilharzia were given to the Mliba Farmers Association and to the Standards 5 and 6 classes at Mount Hermon School, Mankaiana.

2. In addition to survey specimens, 158 specimens of urine and 3 stools were examined in the laboratory.

D. M. ECKARD

HEALTH INSPECTOR

APPENDIX IV

ANNUAL REPORT OF MBULUZI LEPER COLONY.

FOR THE YEAR ENDING 31ST DECEMBER 1960.

The Leper Colony is situated in an isolated area (about 1000 acres in extent) in the hilly region eleven miles north of Mbabane. Some of the disadvantages of distance have been ameliorated this year by the great improvement in the dirt road to the Colony, and in the installation of a telephone. These improvements have been a great boon to the staff and patients and are much appreciated.

The land at the Colony is not very fertile but patients are encouraged to cultivate vegetable gardens of their own with a view to providing healthful exercise and to supplementing their diet. Beans and maize have been grown communally and on the advice of Dr. P. C. Teale and Mr. Vermaak of the Veterinary Department, Mbabane, Japanese Radish was grown for cow feed to improve the milk yield of the herd at the Colony. Milk forms an important article in the diet of the patients.

The pine trees (Pinus patula) and Wattle planted on some of the land are showing sturdy growth. There is no lack of firewood for the patients now.

The making of the bridge across the Mbuluzi River on the river boundary of the Colony and the diversion of the road through a part of the Colony at some distance from the buildings has solved the problem of pedestrians entering the infected part of the Colony.

We finished the year with 3 more patients (33) than we had at the end of 1959 (30). 29 were admitted during the year. This indicated that there are still foci of infection and most cases can be traced to areas from which other patients have come. 8 of the 29 admissions were cases who had been in the Colony before. 7 of them were not recurrences of the disease, but were suffering from malnutrition and disability from their deformities and breaking down of tropic ulcers. The only active case was a girl who had run away and returned in Lepra reaction.

Diaminodiphgnylsulphone (D.A.D.P.S) and Diphenylthiourea (Ciba 1960) were the specific drugs used in treatment. Steady progress towards cure is made in most cases under treatment with these drugs. Good nutrition is maintained and the general hygiene and happy atmosphere of the place all contribute to assist in the rehabilitation of the patients. Various forms of exercise and occupational therapy are used. During the past year we were glad to receive from Mrs. Stephens of Pigg's Peak two spinning wheels, the wool from which is being sent to Pigg's Peak for weaving. Wool for knitting has been supplied by the Mbabane Branch of the Red Cross Society and regular visits by Mr.Cuthbert Pretious, M.B.E. and other Red Cross members is greatly appreciated by staff and patients.

A school with an attendance of 10 is conducted for the younger patients by an ex-patient.

A Nativity play was given by the patients at Christmas time when the patients were greatly encouraged by the visit of the Resident Commissioner and Mrs. Marwick who distributed gifts.

/Miss .....

Miss Cole, who had been Matron of the Colony since 1948 was granted the M.B.E. by Her Majesty the Queen in the Birthday Honours last June. Patients and staff rejoiced at this worthy recognition of her faithful service amongst them.

1. Staff.

Dr. David Hynd, C.B.E.,	Medical Superintendent,
Miss Mary Bagley, S.R.N., S.C.M.,	Matron,
Miss Betty Mamba,	Nurse,
Rev. Samuel Dlamini,	Chaplain and Liaison Officer,
Mrs. Prisca Manana	Teacher
2 Labourers	

Miss Cole proceeded on overseas leave in March and we were fortunate in having Miss Bagley to take her place. I make fortnightly visits from the Hospital at Bremersdorp for therapeutic and administrative purposes and I am assisted by the clerical staff of the Raleigh Fitkin Memorial Hospital in the running of the Colony. The Colony is run as a department of the Raleigh Fitkin Memorial Hospital, Bremersdorp, and thus receives gratuitously the services of the Medical Superintendent and its clerical staff.

II. Financial.

The following is a statement of the running costs of the Colony for the year ending 30th April 1960 -

Food	£421. 7. 1.
General Supplies	246. 8. -
Salaries and Wages	832. 14. 6.
Medical Supplies	177. 18. 8
Repairs	24. 11. 6
Travelling Expenses	81. 13. -
Railage and Transport	73. 10. 3
Ambulance Maintenance	248. 6. 6
Ambulance Depreciation	62. 10. -.
	£2,168. 19. 6.

The Government provides an annual grant of £1,574 for maintenance and the balance of expenditure is met from donations from the Mission to Lepers and the Church of the Nazarene.

III. State During The Past Year.

Number of Patients, December 1959	30
" " " " 1960	33

IV. ADDITIONS TO POPULATION.

	Males	Females	Total.
Admissions	11	10	21
Re-Admissions	4	4	8
	15	14	29

/Losses .....

V. LOSSES IN POPULATION.

	Males	Females	Total.
Deaths	1	1	2
Desertions	1	-	1
Discharges	14	9	23
	16	10	26

VI. ORIGIN OF PATIENTS ADMITTED.

District.	Males	Females	Total	Percentage.
Mbabane	7	5	12	41.4
Mankaiana	2	3	5	17.3
Bremersdorp	2	1	3	10.3
Pigg's Peak	2	1	3	10.3
Hlatikulu	1	1	2	6.9
Stegi	4	-	4	13.8
	18	11	29	100%

VII. DURATION OF DISEASE BEFORE ADMISSION.

Duration	Admissions	Percentage.
0 - 1 years	12	57.1
1 - 2 "	7	33.3
2 - 3 "	-	-
3 - 4 "	1	4.8
4 - 5 "	1	4.8
	21	100%

VIII. CLASSIFICATION OF ADMISSION.

Type	Admissions	Percentage.
Lepromatous	2	9.6
Neural	14	66.6
Combined Neural & Lepromatous	5	23.8
	21	100%

Of the 21 admissions in the Colony the following gives the type of disease according to sex:-

Type	Males	Females	Total	Percentage.
Lepromatous	2	-	2	9.6
Neural	7	7	14	66.6
Neural & Lepromatous	2	3	5	23.8
	11	10	21	100%

IX. AVERAGE AGE ON ADMISSION.

The average age on admission was 31.6 years.

X. PROPORTION OF CHILDREN TO TOTAL ADMISSIONS.

There were 5 admissions of children under the age of 16 years out of a total of 29 admissions, i.e. 17.3%

/Treatment .....

XI. TREATMENT.

The attendances at the Dispensary were 1,263

There were 20 patients admitted to the Hospital wards during this period; the total hospital inpatient days being 1,148.

The following were the diseases treated:-

Malnutrition	2
Tropical ulcers	3
Lepra reactions	7
Pregnancy	1
Other diseases	7
	21.

XII. LABORATORY REPORT.

63 smears from patients were examined during the year for the presence of B. Leprae with the following results -

	Positive		Negative.	
	Nasal	Skin	Nasal	Skin
Lepromatous	-	17	-	4
Neural	-	-	-	33
Neural & Lepromatous	-	7	-	2
		24		39

I wish to express my appreciation for all the co-operation and loyal support which I have had from the staff in the running of the Colony; to the District Commissioner, Mbabane and the Public Works Department for their help in maintaining the road to the Colony and repairs to buildings; to the Controller of Posts and Telegraphs for the construction of the telephone line to the Colony; to the Land Utilization Department for their help and advice in Veterinary and Agricultural matters; to the Director of Medical Services for his unfailing kindness and financial help in the running of the institution; to the Red Cross Branch, Mbabane, for all their interest and practical help; to Mrs. Stephens of Pigg's Peak for her help in initiating the use of the spinning wheel amongst the patients; to an innumerable host of interested people who render us help in the care of sufferers from this disease through the Mission to Lepers and the Church of the Nazarene.

DAVID HYND

MEDICAL SUPERINTENDENT.

APPENDIX V.

REPORT ON PUBLIC HEALTH MATTERS.

1. SEWERAGE.

Since the inauguration of the Mbabane sewage disposal scheme, two hotels, Mbabane Hospital, Mbabane Gaol, St. Mark's School and nine other premises have been connected to the town's sewers, and, as applications and plans for further connection are submitted, more and more premises are being linked to the system.

The sewage disposal works are sited just south of the Township on the Mbabane River.

It was found possible to incorporate the African Township of Msunduza into the scheme, but due to the siting of the existing communal latrines at lower levels than it was practical to construct the sewer they could not be utilised, and new ones have had to be built. This is a great step forward and will pay dividends as this Township expands.

Due to the rapid expansion in Bremersdorp, industrial and otherwise, it becomes obvious that this must be the next town to require a sewage disposal works, and that in the not too far distant future.

In the other townships conditions remain much the same with here and there water borne sewerage to septic tanks replacing existing pail closets.

Nightsoil removal and disposal has been well carried out, very few complaints about non-removal having been made to this Department. The construction and maintenance of pail closets though leaves much to be desired, and owners have been induced to replace defective structures by water borne systems rather than have them repaired.

2. REFUSE REMOVAL.

Unfortunately there is very little progress to report in this direction. In Mbabane and Bremersdorp the collections are carried out with the township lorries which due to their open construction, leave a trail of litter down each street visited. The new refuse vehicle with enclosed body for use in Mbabane has been ordered but is still awaited.

3. REFUSE DISPOSAL.

This falls into two categories -

(a) disposal by householders on their own stands,
(b) disposal by Government after collection.

Both are unsatisfactory.

In the case of (a) housholders either dig a hole in their backyard or throw their refuse onto adjoining vacant ground. In either case it is left uncovered and exposed to flies. The practice is so widespread that it is impossible to make regular house to house investigations into this nuisance.

In the case of (b) refuse is dumped into large open pits or it is used for reclamation purposes.

/A system .....

A system of controlled tipping as practised in overseas cities could easily be established, if the difficulty of cost could be overcome, the expense being mainly for the provision of earth for covering purposes.

4. WATER SUPPLIES

As there have been no outbreaks of infectious diseases attributable to reticulated water in the townships, it may be said that supplies have been fairly reasonable under circumstances obtaining.

MBABANE is well catered for as regards quantity and purification.

BREMERSDORP is awaiting the completion of the new purification and pumping plant on the Little Usutu River which will ensure a supply equal to that of Mbabane. Construction on this plant is said to be ahead of schedule and the works should be in operation early in 1961.

PIGG'S PEAK. New pumps and a drip chlorinator were installed in the earlier part of the year. There is still no filtration of this supply.

STEGI. No new works have been carried out in this Township. The position due to the shortage of water before the rains was critical.

HLATIKULU. The position remains unchanged, water from the catchment area being pumped to an open distribution reservoir without treatment.

GOEDGEGUN The construction of new purification works was begun this year and the works are almost completed. The installation of equipment has still to be done, meanwhile two of the four sand filters are in operation after which water is piped to the old pump station where it is chlorinated by means of a drip chlorinator and then pumped to the distribution reservoir.

Specimens of water from these Townships have been submitted for bacteriological examination and the results have been notified to the Director of Public Works and the Local Authorities concerned.

The following table shows the number of samples collected from the various areas with the results of examination -

/Table .....

URBAN	1st Quarter.				2nd Quarter				3rd Quarter				4th Quarter				Total for each Area
	Date	A	B	C	Date	A	B	C	Date	A	B	C	Date	A	B	C	
Bremersdorp	22.2.60	6	6	-					18.7.60	2	2	-	21.11.60	6	1	5	14
Mbabane	8.2.60	4	4	-	27.6.60	6.	6	-					8.11.60	6	5	1	16
Stegi	11.1.60	4	3	1					8.8.60	5	5	-					9
Hlatikulu	21.3.60	2	2	-					12.9.60	2	2	-	12.12.60	-	-	2	6
Goedgegun	21.3.60	4	4	-					12.9.60	4	4	-	12.2.60	4	1	3	12
Pigg's Peak	8.3.60	5	5	-					29.8.60	5	3	2	5.12.60	6	1	5	16
RURAL																	
Border Gate	11.1.60	2	1	1													2
Mdutshane	8.2.60	2	2	-													2
Mankaiana					30.5.60	4	-	4					7.11.60	5	4	1	9
Mhlume					6.6.60	6	-	6									6
Mantenga					31.5.60	1	1	-									1
Mpisi									18.7.60	2	-	2					2
Rayner Mhlambanyati									18.7.60	1	1	-					1
													4.10.60	6	2	4	6

A = Total; B = Satisfactory; C = Unsatisfactory. Included in the unsatisfactory samples are the tests on 11 specimens of raw water.

5. FOOD IN RELATION TO DISEASE.

(a) Trade Premises. Routine inspections of trade premises were carried out in all the Urban Areas, and the following unsound articles were seized and destroyed -

43 tins Pickled Fish
1 case Sardines
127 tins various foodstuffs including beans, jam and fruit,
40 lbs. potatoes.

In many cases General Dealers hand over unsound foodstuffs to wholesalers' representatives for disposal and obtain a credit direct from the firm.

(b) Abattoirs. There are five Government abattoirs in the Territory. There is daily control over the one in Bremersdorp, while the one at Mbabane is visited at least weekly by a Health Inspector. Those at Stegi, Hlatikulu and Goedgegun can only be visited monthly.

The following table gives the number of carcases examined at Mbabane and Bremersdorp. Figures for the other three centres are not available.

Abattoir	Anumals Slaughtered			No. Frozen			No. Cooked			No. Destroyed		
	B	P	S	B	P	S	B	P	S	B	P	S
Mbabane	1163	277	697	4	-	-	4	-	-	-	8	-
Bremers-dorp	1455	511	1060	35	-	-	20	-	-	8	20	-

B = Bovines; P = Pigs; S = Sheep.

CARCASES OR PORTIONS THEROF DESTROYED	MBABANE	BREMERSDORP.
Bovine livers (fluke)	17	102
" " (abscess)	-	5
" " (cirrhosis)	-	1
" lungs (abscess)	-	1
" " (cysts)	4	24
Sheep livers (fluke)	6	54
" " (stilesia)	1	169
" " (abscess)	-	4
" lungs (abscess)	-	12
Pig Livers (abscess)	-	1
Bovines (bruising)	-	± 15 lbs.
" (measles)	-	8
Pigs (measles)	8	20
Bovines whole carcase (multiple abscess)	-	1
" " " (emaciation)	-	1
Sheep " " (lymphadenitis)	-	1

The incidence of C. Bovis and C. Cellulose respectively was as follows:-

Mbabane 0.7% and 2.8%
Bremersdorp 4.3% and 3.7%

/(c) Rural .....

(c) Rural Butcheries. There are many rural butcheries, mostly African owned, scattered about the Territory where there is little or no supervision from this Department. These butcheries are poorly constructed, with very few facilities. Water for washing down and cleaning implements is the exception, fly screening is broken or non-existent, while slaughtering is usually done in the open just outside the butchery.

6. BUILDINGS.

Eighty-seven building plans were submitted to the Health Office by Local Authorities for scrutiny and comment, made up as follows:-

Mbabane	44
Bremersdorp	28
Stegi	4
Hlatikulu	1
Goedgegun	8
Other	2
	87.

Some of the major projects in Mbabane included plans for a block of shops and offices, showroom and flats for Swaziland Agencies, extensive extensions to the Central Hotel, a new Hotel, and buildings at the recently opened Industrial Site, while in Bremersdorp a large block of flats is under construction, "Security House" contemplate a block of shops and offices, Mitchell Cotts have erected a very fine building for use as offices and storeroom, Barclays Bank have had plans approved for a new Bank on their present site, and the M.O.T.H.S will be building a public hall.

New dwellings have not been neglected, but the housing problem in Bremersdorp and Goedgegun is still acute.

Arrangements were made for the Health Office in Bremersdorp to retain a copy of all plans submitted for use in routine inspections of buildings under construction. At present the Public Works Department does not submit plans of any of its proposed buildings to the Health Department and Government buildings are not included in the above survey.

7. HOTELS.

There are twenty-nine licensed hotels and clubs in Swaziland. Plans and applications were lodged for four more hotels. Annual reports, as well as any interim reports which may be called for such as at change of ownership, are submitted to the Liquor Licensing Board. These reports deal chiefly with conditions of hygiene, the state of linen, crockery, the adequacy of sanitary facilities, servants quarters and the like. It is noticeable that licencees are much more receptive to suggestions made than are storekeepers and other members of the public.

With the advent of new regulations, and it is hoped an increase in the inspectorate staff, it may be possible in the future to extend annual reports to cover all places of business. An adverse report which is likely to affect the renewal of a person's licence is a great incentive to such a person to put his house in order.

/8. Fumigation .....

8. FUMIGATION.

At the request of owners numerous fumigations were carried out free of charge to exterminate bed bugs, cockroaches and bees.

In view of the time and labour involved and the distances which have to be travelled a tariff of charges for such services might be considered. A number of residents of Stegi have signified their willingness to pay for the spraying of houses and quarters against mosquitoes.

9. LEGISLATION.

The proposed Urban Areas Regulations and the Building Regulations have been before the Advisory Council and are being redrafted. The proposed Drainage Regulations are before the Attorney General.

10. MSUNDUZA TOWNSHIP .

Planning of this African Township was held up due to lack of funds, but the survey of the area was completed. The scheme envisages 100 medium density sites and 500 high density sites, with water reticulation costing £11,300 and sewerage £47,000.

J. BATESON

HEALTH INSPECTOR.

APPENDIX VI

GOVERNMENT HOSPITALS AND CLINICS.

HOSPITALS.

	Mbabane	Hlatikulu	Mankaiana	Pigg's Peak	Total
Establishment.					
Medical Officers	4	3	-	1	
Matron	1	1	-	-	
Nursing Sisters	6	3	1	-	
Pharmacist/Storekeeper	1	1	-	-	
Radiographer	1	-	-	-	
Housekeeper	1	-	-	-	
Medical Assistant	1	1	1	-	
Laboratory Assistant	1	1	-	-	
Dispensers	2	1	-	-	
Pupil Dispensers	-	2	-	-	
Nurses	30	23	6	6	
Outpatient Attendants	3	-	1	-	
Ambulance Drivers	2	2	-	1	
Ward Attendants and Orderlies	15	12	1	3	
BEDS: European	8	8	-	-	
African	143	127	24	16	326
ADMISSIONS: European	368	110	-	2	
African	3925	2625	2069	1208	10307.
DAILY AVERAGE NO. OF IN-PATIENTS.					
European	5.03	1.62	-	0.01	
African	236.12	124.5	48.1	39.3	454.68
DEATHS: European	10	1	-	-	
African	143	100	27	35	316
OPERATIONS:	1529	369	-	40	1938
X-RAY Examinations	3064	1028	-	-	4092
Screenings	217	16	-	-	233
OUTPATIENTS:					
1st Attendances,					
European	5763	814	39	469	
African	18371	14629	10815	7370	58270
Subsequent Attendances:					
Europeans	5435	548	40	275	
Africans	15020	10056	3367	1003	35744
	44589	26047	14261	9117	94014

/Clinics .....

CLINICS.

	1st Attendances E	1st Attendances A	Subsequent Attendances E	Subsequent Attendances A	Total Attendances E	Total Attendances A
HLATIKULU DISTRICT						
Goedgegun	676	7665	615	6648	1291	14313
St. Phillips Mission ++	12	4245	-	1518	12	5763
Mhlotsheni	66	5713	45	4704	111	10417
Hluti	113	3494	53	1774	166	5268
Sipofaneni	17	4495	7	2967	24	7462
Lubuli +	19	3228	3	831	22	4059
Vimy Ridge (Gollel)	-	1108	-	-	-	1108
PIGG'S PEAK DISTRICT.						
Horo	1	10151	-	9012	1	19163
Lesters +	-	2879	-	730	-	3609
MBABANE DISTRICT.						
Government Farm	2	5260	-	2417	2	7677
STEGI DISTRICT						
Nomahasha +	1	940	-	323	1	1263
GRAND TOTAL					1630	70102

\+ = Clinics staffed and supplied by the Swazi National Treasury,

++ = Roman Catholic Clinic, supplied and supervised from Hlatikulu Hospital.

APPENDIX VII

MISSION HOSPITALS AND CLINICS.

HOSPITALS.		RALEIGH FITKIN MEMORIAL HOSPITAL	GOOD SHEP-HERD HOSPITAL	MAHAMBA METHO-DIST HOSPITAL.	TOTALS
BEDS:	European	8	2	-	10
	African	192	33	73	298
ADMISSIONS:	European	327	24	7	758
	African	4378	917	852	6,147
DAILY AVERAGE NO. OF INPATIENTS.					
	European	6.2	0.35	0.11	6.66
	African	163.4	27.7	57.9	249.0
DEATHS:	European	2	-	-	2
	African	101	31	55	187
OPERATIONS		1066	-	341	1407
X-RAY:	Examinations	1303	-	721	2024
	Screenings	6	-	-	6
OUT-PATIENTS:					
1st Attendances:					
	Europeans	4438	451	119	
	Africans	11265	5826	2163	24262
Subsequent Attendances:					
	Europeans	948	187	182	
	Africans	8586	2060	2335	14298
	TOTALS	20237	8524	4799	38560

/Clinics .....

MISSION CLINICS.

	First Attendances		Subsequent Attendances		Total Attendances	
	E	A	E	A	E	A
NAZARENE MISSION						
Endingeni	2	4364	-	1433	2	4797
Stegi	30	4744	41	3386	71	8130
Pigg's Peak	3	2202	1	935	4	3137
Mayiwane	-	979	-	4074	-	5053
Ebenezer	-	1245	-	360	-	1605
Mliba	-	582	-	1399	-	1981
Mafuteni	-	416	-	733	-	1149
Bhekinkosi	-	493	-	480	-	973
Balegane	1	712	-	730	1	1442
Malinda	-	854	-	1016	-	1870
Tambankulu	9	2437	4	1204	13	3641
TOTALS	45	19028	46	15750	91	33778
METHODIST MISSION.						
Gege	-	572	-	646	-	1218
Dwaleni (January-June)	-	168	-	176	-	344
TOTALS	-	740	-	822	-	1562
TOTALS MISSIONS	45	19768	46	16572	91	35340

APPENDIX VIII:

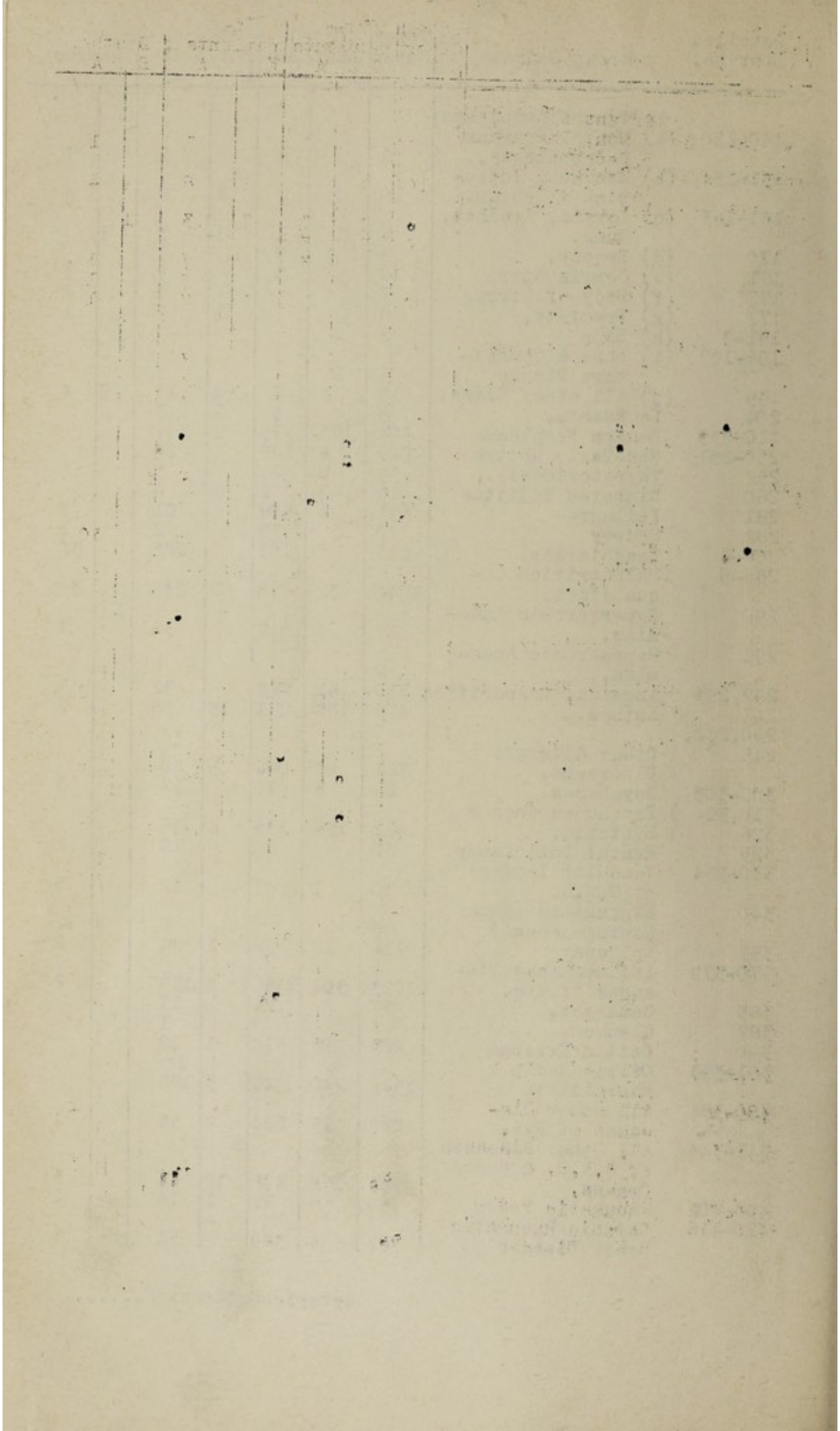
RETURN OF CASES TREATED: GOVERNMENT AND MISSION HOSPITALS, 1960.

Detailed List No.	Group Causes:	Total Cases	Out - patients E	Out - patients A	In-patients E	In-patients A	Deaths: E	Deaths: A
001-008	Tuberculosis, Respiratory System.	795	2	259		534		60
010	Tuberculosis of Meninges or C.N.S.	16		4		12		8
011	Tuberculosis of Intestine & Peritoneum.	30		3		27		
012-013	Tuberculosis of Bones & Joints.	75		13		62		
014-019	Tuberculosis - All other forms.	213	14	130		69		
020	Congenital Syphilis.	81		63		18		1
021	Early Syphilis.	458	4	429		25		
024	Tabes Dorsalis.	2		1		1		
022-023) 026-029)	All other Syphilis.	294		265		29		1
030-035	Gonococcal Infection.	1389	26	1320		43		
036-039	Other Venereal Diseases.	104		96		8		
040-041	Enteric Fever.	190		6	13	171		14
045	Bacillary Dysentery	552	50	348	5	149		6
046	Amoebiasis.	193	10	43	6	134		7
050	Scarlet Fever.	4	4					
053	Septicaemia.	5				5		1
055	Diphtheria.	1				1		1
056	Whooping Cough.	981	29	829		123		2
057	Meningococcal Infections.	4				4		
060	Leprosy.	14		7		7		
061	Tetanus.	8				8		3
080	Acute Poliomyelitis.	1				1		1
081-083	Late Effects of Poliomyelitis.	4	1	3				
085	Measles.	875	137	591	1	146		
092	Infectious hepatitis	68	24	17	1	26		1
104	Tick-Bite Fever.	8	6	1		1		1
116	Malaria.	33	8		6	19		
123-1	Bilharzia (Vesical)	881	33	705		143		
123-0	Bilharzia (Intestinal)	10		9		1		
125	Hydatid Disease.	1		1				
126	Tapeworm.	921	19	878	1	23		
130-0	Ascariasus.	814	29	768		17		
124,128) 130-1)	Other Helminthic Diseases.	203	53	129		21		
049	Food Poisoning.	5				5		
087	Chickenpox.	213	66	130		17		
131	Dermatophytosis	405	2	403				
135	Scabies.	148	4	138		6		
137,138	Other Infective and Parasitic Diseases.	106	35	65		6		

Malignant/.....

Detailed List No.	Group Causes:	Total Cases	Out-patients E	Out-patients A	In-patients E	In-patients A	Deaths: E	Deaths: A
	Malignant Neoplasms:							
140-150	(a) Mouth, Pharynx & Oesophagus.	2		1		1		1
151-154	(b) Stomach, Intestine & Rectum.	10	1		1	8		4
161-163	(c) Larynx, Trachea, Lung.	6	1	1	1	3	1	
170	(d) Breast.	8	1	3		4		
171	(e) Cervix Uteri	10		3		7		1
172	(f) Body of Uterus	7				7		1
177	(g) Prostate.	8			1	7		1
191-9	(h) Skin	2	1			1		
196-197	(i) Bone & Connective Tissue	5	2			3		
199	(j) All other Sites.	19		5	1	13	1	4
204	Leukaemia.	5		1	1	3		
210-239	Benign Neoplasms	504	177	175	7	147		
250-251	Non-Toxic Goitre	223	6	188		29		
252	Thyrotoxicosis.	34	8	21		5		
260	Diabetes Mellitus	19	7	2	2	8		
281	Pellagra	693	4	608		81		5
282	Scurvy	40		38		2		1
286-6	Kwashiorkor	423	5	193		225		30
286-5	Malnutrition unqualified.	1040	32	778	2	235		30
290	Hyperchromic Anaemias.	47	4	7		36		1
291	Hypochromic Anaemias.	2				2		
292,293	Anaemia, unspecified	355	61	262		32		1
241	Asthma.	472	128	271	15	58		2
240,242, 245	Other Allergic Disorders.	361	90	246	5	20		
300-309	Psychoses.	28	6	10		12		3
310,324 326	Psychoneuroses & Hysteria.	411	136	235	4	36		
325	Mental Deficiency	30		20		10		2
330-334	Vascular lesions of C.N.S.	30	1	17		12		5
340	Meningitis (Non-Meningococcal)	8				8		2
353	Epilepsy	114	12	57	1	44		2
370-379	Inflammatory Diseases of Eye.	2023	304	1585	1	133		2
385	Cataract.	37		26		11		
387	Glaucoma	3		2		1		
390	Otitis Externa	469	146	310	1	12		
391-393	Otitis Media & Mastoiditis	1305	240	941	3	121		
380-384	All other Diseases of Eye.	272	13	224	2	33		1
341-344	All Other Diseases of C.N.S. & Sense Organs.	746	172	496	12	66		3
400-402	Rheumatic Fever	38	6	17	1	14		1
410-416	Chronic Rheumatic Heart Disease	367	4	329		34		3

Arteric-Sclerotic/.....



DETAILED LIST NO:	Group Causes:	Total Cases	Out-patients E	Out-patients A	In-patients E	In-patients A	Deaths: E	Deaths: A
420-422	Arterio-sclerotic & Degenerative Heart Disease	147	20	45	3	79	2	13
430-434	Other Diseases of Heart	587	112	324	18	133	1	9
440-443	Hypertension & Heart Disease.	90	20	52	1	17		2
444-447	Hypertension	290	175	66	6	43		
450-456	Diseases of Arteries	24	8	11	1	4		
460-468	Other Diseases of Circulatory System	589	140	349	18	82	3	2
470-475	Acute Upper Respiratory Tract Infections including Acute Tonsillitis	4544	934	3247	59	344		
480-483	Influenza	4848	740	3528	21	559		1
490	Lobar Pneumonia	385	10	109	11	255	1	13
491	Broncho-Pneumonia	1355	50	746	14	545		45
492,493	Atypical Pneumonia	117	43	5	9	59	1	5
500	Acute Bronchitis	5656	396	4830	6	424		1
501,502	Bronchitis, Chronic & Unspecified	1143	96	946	2	97		
512	Chronic Pharyngitis & Chronic Tonsillitis.	468	77	321	3	67		
518,521	Empyema & Lung abscess.	21		3		18		3
519	Pleurisy.	329	43	199	4	83		2
523	Pneumoconiasis	35		23		12		
520-522	Other Respiratory diseases.	271	61	194		16		
530	Dental caries.	2848	272	2513	1	62		
531-535	All other Diseases of Teeth & Gums.	674	39	593	1	41		
540	Gastric Ulcer.	48	27	11		10		
541	Duodenal ulcer.	10	5	4		1		
543	Gastritis & Duodenitis.	1910	125	1727	8	50		1
550-553	Appendicitis.	369	128	108	50	83		2
570	Intestinal Obstruction.	30	3	4	1	22		6
560	Hernia.	106	22	39	10	35		1
570-0	Gastro-enteritis (4 weeks to 2 yrs)	4327	175	3407	15	730	1	47
571-1	Gastro-enteritis (over 2 years)	2894	384	2070	24	416		15
572	Chronic enteritis and Colitis.	434	7	391	7	29		1
581	Cirrhosis of Liver	106	10	46	1	49		9
584,585	Cholecystitis.	72	32	29	6	5	1	1
536-539, 544,573, 580,582, 583,586, 567.	Other Diseases of Digestive System.	3181	527	2388	16	250		18

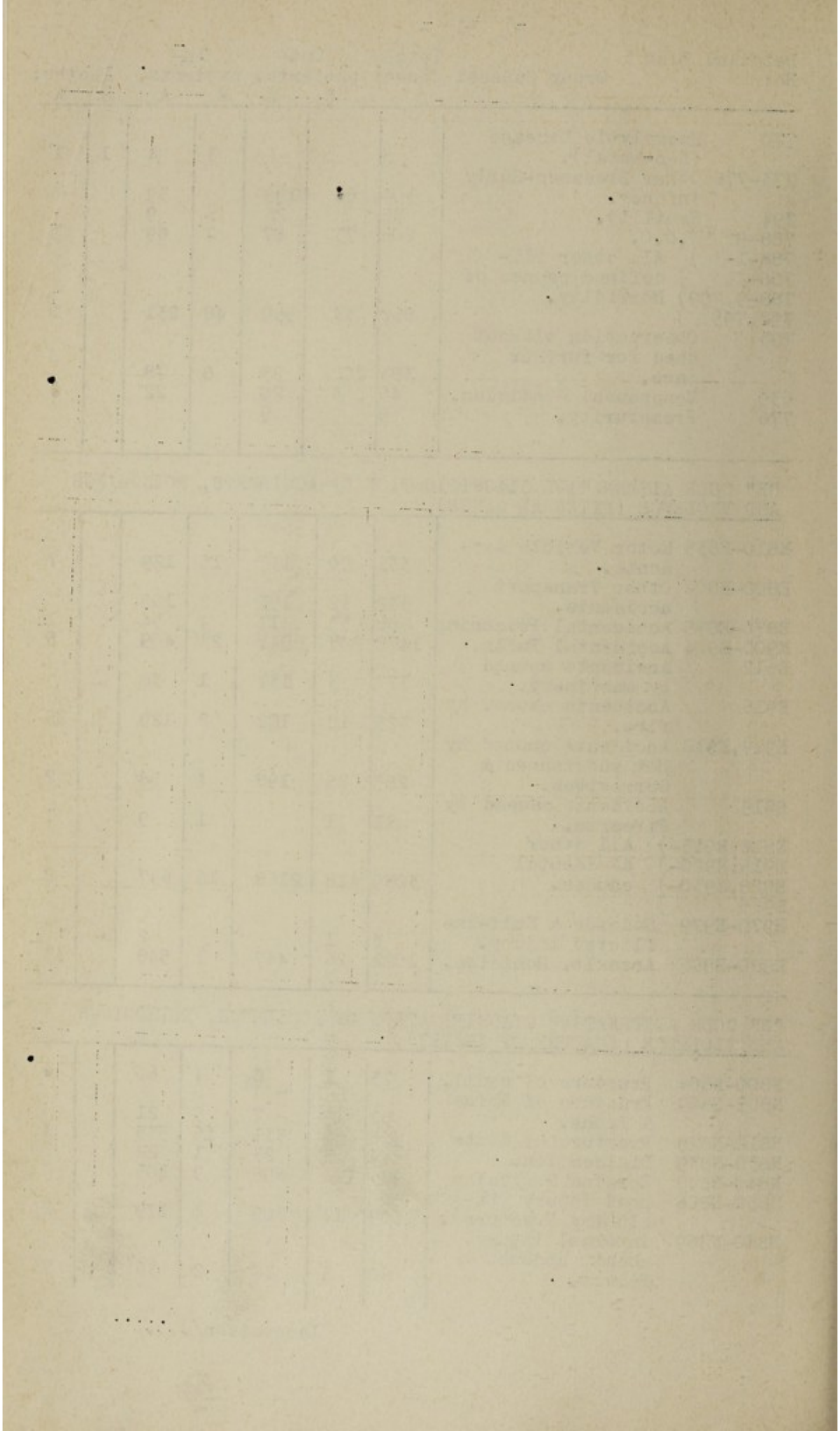
Acute Nephritis/.....

Detailed List No.	Group Causes	Total Cases	Out-patients E	Out-patients A	In-patients E	In-patients A	Deaths E	Deaths A
590	Acute Nephritis	107	8	67	1	31		1
591-594	Chronic Nephritis	50		34	1	15		3
600	Infections of Kidney	271	65	119	17	70		4
602,604	Calculi of Urinary System	6	2	2	1	1		
610	Hyperplasia of Prostate	29	23		1	5		
620,621	Diseases of Breast	141	20	83	2	36		
613	Hydrocele	79	1	59	1	18		
634	Disorders of Menstruation	1781	151	1500	9	121		
601,603,605-609,611,612,614-617,622-633,635-637	All other Diseases of Genito-Urinary System	4622	328	3534	54	706		6
660	Normal Deliveries	1987			90	1897		
671, 673-678	Delivery with Complications	280			23	257		3
640,641,681,682,684	Sepsis of Pregnancy, Childbirth and Puerperium	70	1	32		37		
642	Toxaemia of Pregnancy	31	3	8	5	15		1
643,644 670,672	Haemorrhage of Pregnancy & Childbirth	27		2	1	24		1
650	Abortion	471	29	125	21	296		
651	Abortion with Sepsis	72	1	29		42		4
690-698	Infections of Skin & Subcutaneous Tissues	2516	484	1653	13	366		
720-725	Arthritis and Spondylitis	612	76	439	1	96		
726,727	Muscular Rheumatism & Rheumatism Unqualified	1829	273	1381	2	173		
730	Osteomyelitis & Peri-Ostitis	159	29	53	1	76		
737,745 749	Ankylosis & Acquired Musculo-Skeletal Deformity	18		13		5		
		54	7	36		11		1
700-714	All other Diseases of Skin	1952	353	1469		130		1
731-736 738-744	All other Diseases of Musculo-Skeletal System	417	199	159	3	56		
750-759	Congenital Malformations	50	2	26		22		2
760-762	Birth Injuries	14		11		3		
765	Ophthalmia Neonatorum	19		10		9		

Haemolytic Disease/.....

Detailed List No:	Group Causes:	Total Cases:	Out-patients. E	Out-patients. A	In-patients. E	In-patients. A	Deaths: E	Deaths: A
770	Haemolytic Disease (Neo-natal).	5			1	4	1	1
773-776	Other Diseases-Early infancy.	304	66	199		39		7
794	Senility.	35		26		9		
788-9	P.U.O.	206	73	57	7	69		1
788-1-, 788-7, 788-9,789 792,795	All other ill-defined causes of Morbidity.	862	33	550	48	231		1
793	Observation without need for further care.	383	202	95	8	78		
635	Menopausal Condition.	45	3	20		22		6
776	Prematurity.	9		9				
	"E" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (EXTERNAL CAUSE).							
E810-E835	Motor Vehicle Accidents.	331	50	137	15	129		7
E800-E802	Other Transport accidents.	312	12	193	2	105		
E870-E895	Accidental Poisoning	88	33	17	4	34		1
E900-E904	Accidental Falls.	1478	203	843	23	409		5
E612	Accidents caused by machinery.	177	3	137	1	36		
E916	Accidents caused by fire.	325	12	182	2	129		15
E917,E918	Accidents caused by Hot substances & Corrosives.	285	25	198	4	58		2
E919	Accidents caused by Firearms.	11	1		1	9		1
E910,E913-E915,E920-E928,E930-E965	All other accidental causes.	3239	418	2168	16	637		2
E970-E979	Suicide & Self-Inflicted injury.	3	1			2		
E980-E985	Assault, Homicide.	1022	26	447	1	548		13
	"N" CODE ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS AND VIOLENCE (NATURE OF INJURY).							
N800-N804	Fracture of skull.	73	1	8	4	60		6
N805-N809	Fracture of Spine & Trunk.	52	19	7	5	21		
N810-N829	Fracture of Limbs	926	65	311	15	535		4
N830-N839	Dislocation.	49	3	23	1	22		
N840-N848	Sprains & strains	983	174	695	9	105		
N850-N856	Head Injury (Excluding Fracture).	509	17	309	4	179		2
N860-N869	Internal Injury, chest, abdomen & Pelvis.	60	5	17	2	36		7

Laceration/.....



Detailed List No.	Group Causes:	Total Cases:	Out-patients. E	Out-patients. A	In-patients E	In-patients A	Deaths E	Deaths A
N870-N908	Laceration and open wounds.	2655	250	1703	14	688		8
N910-N929	Superficial Injury, contusion.	939	114	700	5	120		
N930-N936	Foreign Body entering through Orifice.	286	39	190	1	56		
N940-N949	Burns	651	47	380	6	218		17
N960-N979	Effects of Poisons	84	29	15	3	37		1
N950-N959) N980-N999)	All other effects of External Causes.	114	21	64		29		1
Y00	Medical Examination, Boards, and Tax Exemption Examinations.	4298	315	3754 229				
Y02	Prophylactic Injections:							
(a)	Smallpox Vaccination	324	298	26	19	2		
(b)	T.A.B.	570	180	390	97	305		
(c)	Diptheria, Whooping Cough & Tetanus.	210	140	70	186	38		
(d)	Diphtheria.	12	5	7	7			
(e)	Tetanus.	102	13	89				
(f)	Poliomyelitis.	141	138	3	258			
(g)	Yellow Fever.	110	86	24				
Y06	Antenatal Examinations	5212	369	4843				
Y08	Attendants admitted as Inpatients with sick children.	1172			13	1159		

TOTAL "NEW" PATIENTS. 94857

SUBSEQUENT ATTENDANCES:	TOTAL:	E.	A.
Subsequent Ante-Natal Attendances.	4,387	361	4,026
Subsequent Prophylactic Injections.	912	567	345
Other Subsequent Attendances.	43,198	6,705	34,493.
TOTALS:	48,497	7,633	40,864