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SOUTHERN RHODESIA.



# REPORT

on the

## PUBLIC HEALTH

For the Year 1946

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Presented to the Legislative Assembly  
1947.

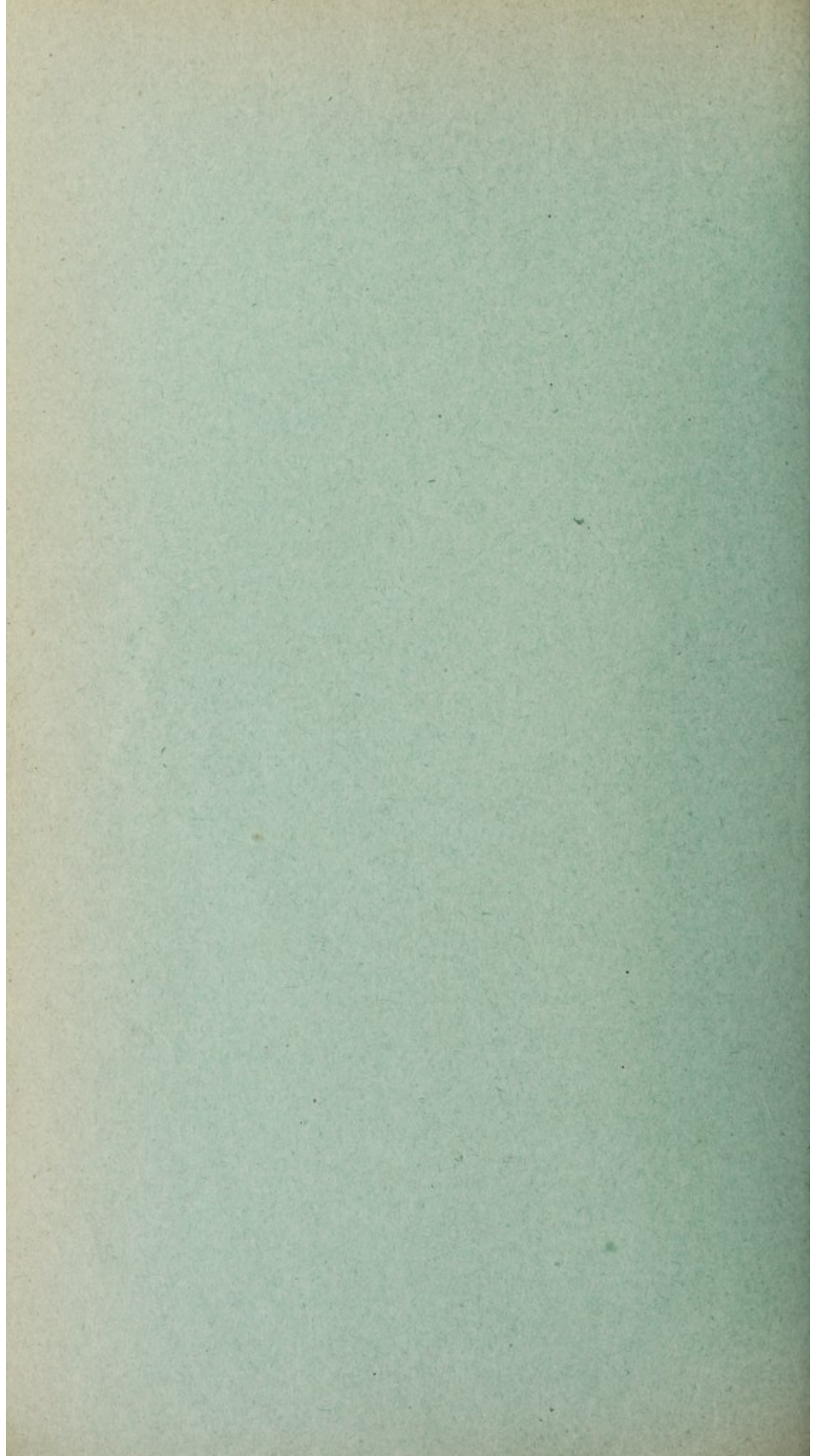
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# Report on the Public Health for the Year 1946.



The Minister of Internal Affairs.

I have the honour to submit the Annual Report of the Public Health Department for the year ended 31st December, 1946.

The year has been marked by important changes in the Public Health Department. In April, Dr. A. P. Martin, O.B.E., retired from the office of Medical Director and Chief Health Officer. His very valuable services in that capacity extended over ten years, of which the majority were rendered the more difficult by the additional burdens of war. In spite of the resultant conditions in respect of staff and equipment, Dr. Martin has left an imperishable mark on the Public Health system of the Colony and he will always be remembered with gratitude for his wise guidance in the years of the Colony's development. In particular eighty-seven clinics for Africans and a Tuberculosis Sanatorium remain as permanent monuments to his initiative and organising ability.

In May the National Health Services Inquiry Commission appointed in 1945 under the Chairmanship of Professor C. M. F. Saint, C.B.E., F.R.C.S., presented a report which is a valuable review of every aspect of the National Health. Since its publication this report has received very close study not only in this Department but by all sections of the community. It may be divided into two divisions. The first deals with the re-organisation of the Public Health Department and its manifold activities as a whole. The further consideration of these recommendations now awaits the attention of the Public Services Board.

The other division covers recommendations for a National Health Service. These have been given close and detailed study by an Inter-departmental Committee, which has forwarded its findings. The problems involved have been debated in Parliament and are now the subject of negotiations with the medical profession as represented by the British Medical Association branches.

In May also the Ngomahuru Hospital Inquiry Commission under the Chairmanship of Dr. A. J. Orenstein, C.B., C.M.G., C.B.E., issued a report on the leprosy services of the Colony. With the exception of the future of the Mtemwa Hospital at Mtoko, all these recommendations have been accepted and it has been possible already to implement many of them. Dr. H. van R. Mostert, an experienced leprologist, assumed duty as Medical Superintendent at Ngomahuru in September. Congenial paid work has been found for European patients, but unfortunately other essential improvements have been delayed by the scarcity of artisans and building materials.

For several years attention has been drawn to the urgent need for more intensive investigation into the extent of malnutrition among the native population, and into the best means of remedying this. The National Health Commission gave a high priority to the establishment of a Nutrition Council and steps have since been taken to bring such a body into being in 1947.

Other questions of medical research and investigation have continued to be studied throughout the year. The Bilharzia Research Unit has done valuable field work with a view to standardising a combined method of attack against this disease. The principle involved is simultaneously to kill the snails in the water-courses of an area whilst all the humans are tested and treated by methods elaborated within the Colony. It is probable that in this way Southern Rhodesia is leading the world in original investigations against the disease. Hitherto the financial support has come from the State Lottery Trustees, to whom grateful thanks are offered, but from next year this work will be entirely undertaken and financed by Government.

The overall medical research organisation of the Colony has received much attention especially towards closer co-operation, through the Medical Sub-committee of the Central African Council, between Southern Rhodesia and our Northern neighbours. The aim has been to secure collaboration in questions of medical investigations, the exchange of information, the training of subordinate African personnel for medical and hygiene purposes, and in securing uniformity of elementary requirements in housing, sanitation and ration scales. It is hoped that these preliminary steps will lead to the creation of a Medical Committee which can take its place in the proposed

regional schemes of the Empire Scientific Conference and of the World Health Organisation of the U.N.O.

During the year further attention has been given to the need for amending the law relating to Poisons. A new draft Bill should be ready for presentation to Parliament in 1947. As this entails alterations to the Medical, Dental and Pharmacy Act, it is proposed at the same time to amend the latter Act so as to bring it more into line with modern requirements.

With regard to the recruiting of staff, the year saw a very considerable easing of the position in so far as the medical staff is concerned. This has made it possible to open two new medical stations; one in January at Antelope Mine covers the Matobo Native District with its population of over 80,000 Africans and a not inconsiderable European community. The other at Karoi covers the northern half of the Lomagundi District, including the ex-Servicemen's settlement at Karoi, the Miami Mica fields and the native reserves of the Zambesi Valley.

Unfortunately there was less success in the recruitment of trained nurses and of chemists and druggists. Throughout the latter part of the war it was only possible to carry on the work of the hospitals by the whole-hearted efforts of a rapidly dwindling band of nurses on the permanent staff supplemented by the devoted help of many nurses, mostly married women, temporarily employed. At the beginning of 1946 less than one-third of the Authorised Establishment was filled and for the next six months the position became increasingly precarious since many of the temporary staff felt it imperative for domestic reasons to resign.

Some 80 trained nurses have been recruited and their advent began a steady improvement which has somewhat eased the situation since September. More nurses are due to arrive in the course of the next few months as passages become available, but the year ended with only 126 permanent staff out of an authorised establishment of 245.

The shortage of chemists and druggists has borne most heavily on the Medical Store, which continues to give very satisfactory service, so that it is hoped that whatever the outcome of present investigations, this organisation will be permitted to continue, even if in a somewhat modified form.

In common with the rest of the Colony, the Public Health Department's programme has been seriously hindered by the lack of building material and artisans. Although Parliament has voted the necessary funds and accepted plans and specifications have been prepared it has often been quite impossible to provide urgently required works, since no contractor could be induced to tender or to undertake the job. It is hoped that under the new Commission there will be better prospects even if the total programme has to be drastically curtailed.

As from the commencement of April the Clinic construction unit of the Department was transferred and merged into the Engineering Branch of the Native Affairs Department. This experiment has not been a success, partly because of the fact that that Branch only operates in Native Reserves and Native Areas, and partly because of the general scarcity of materials. As a result there has been an unfortunate slowing up of clinic construction throughout the Colony, although it has been possible to avoid a complete cessation of building.

It has been possible to arrange for greatly increased grants to Missions willing and able to treat all native patients irrespective of their ability to pay. The aim of the new scale is to encourage Missions to set up a high standard of medical work by grants towards capital expenditure as well as maintenance and qualified staffing. Grants will not, however, be payable unless the standards of work and of skilled supervision warrant assistance from public funds.

Through development of both Government facilities and Mission hospitals, it is now arranged that a larger number of native women will be trained to a higher standard of midwifery, for which there is an ever-growing demand in rural clinics. Unfortunately the very small number of native girls with adequate secondary education precludes the opening of a training school, the certificate of which may be accepted for the purpose of registration as a midwife with the Medical Council.

The year has seen a gradual diminution of the emergency war-time services, such as the Soldiers' Dependents Medical Aid Scheme. Among these the services rendered to the Royal Air Force by honorary consultants

in Salisbury, Bulawayo and Gwelo merit special mention and commendation. It has not been sufficiently realised that a comparatively small band of consultants in these centres has given voluntary and entirely free service in their respective capacities from 1940 to the end of 1946. This work has entailed thousands of consultations, operations and day and night attendance on thousands of members of the Royal Air Force. Members of the Government service and private practitioners have shared alike, and great praise is due for the self-sacrifice entailed. With the changeover from the wartime training group to the peacetime R.A.F. training wing, an entirely new arrangement will be instituted, but the S.R. Government will continue to place all general hospital facilities as the disposal of the Royal Air Force.

The actual carrying out of the Workmen's Compensation Act, in so far as it requires medical and surgical supervision and reports on injured native workmen, continues to give rise to many difficulties in native hospitals and has proved a heavy burden on Government Medical Officers. It has long been felt that many of these difficulties could be obviated if all employers would co-operate by sending full and reliable particulars as well as a statement that the accident occurred whilst at work, whenever such a native patient is sent for treatment. Only too often these essentials have not been available, and many hours have been spent in endeavours to trace particulars in given cases, which sometimes have related to accidents many months before.

The rising cost of drugs, dressings and provisions have given cause for considerable perturbation in the Department, and it has now become essential that some method of closer control by decentralisation be adopted.

#### CHAPTER I.—VITAL STATISTICS.

The National Health Commission in their report drew attention to the grave lack of statistical information concerning the African population and recommended strongly that a complete census of the African population should be carried out as soon as possible. As it was neatly put by a member of the Commission, this country has more accurate information concerning its cattle population than its human population. The figures of African population given are based on what can only be termed informed guessing.

##### (1) Summarised Vital Statistics.

The vital statistical indices of 1946 for the European population have been compared with the data for 1941 and 1936.

	1946	1941	1936
Estimated European population (as at 30th June each year) — — — — —	83,450	69,330	55,590
Rate of natural increase per 1,000 of the population — — — — —	17.5	15.4	13.1
Gross number of immigrants — — — — —	9,195	599	2,586
Number of European births — — — — —	2,147	1,763	1,302
Illegitimate births included above — — — — —	32	26	21
Annual birth rate — — — — —	25.7	25.4	23.4
Number of European deaths — — — — —	687	696	572
Annual death rate, crude — — — — —	8.2	10.0	10.3
Number of infant deaths — — — — —	65	75	64
Infant mortality rate per 1,000 live births	30	43	49
Number of still births (not included in either births or deaths) — — — — —	34	39	27
Number of maternal deaths — — — — —	4	7	9
Maternal mortality rate per 1,000 live births	1.9	4.0	6.9

88.68 per cent. of the births, 1,904 in number, took place in maternity homes. All the still births registered were reported from maternity homes. Of the four maternal deaths, two occurred in institutions giving a mortality rate per 1,000 live births of 1.04 as compared with a domiciliary maternal mortality rate of 8.27. This excessively high figure is probably to be explained by the number of rural residents who have their babies at home without skilled assistance during labour.

##### (2) Population of Southern Rhodesia.

	1946	1941	1936
Europeans — — — — —	83,450	69,330	55,590
Asiaties — — — — —	2,940	2,570	2,191
Coloured persons — — — — —	4,590	3,970	3,189
Natives — — — — —	1,687,000	1,380,000	1,249,621
<b>Total</b> — — — — —	<b>1,777,980</b>	<b>1,455,870</b>	<b>1,310,591</b>



A census of the first three classes was held during the year. The figure for natives is provisional. The native population of Southern Rhodesia has doubled since 1921 when the population was estimated to be 864,700. The rate of increase in the native population is accelerating and the present figure promises to double itself in less than 25 years. The fact of accelerated population increase is not regarded seriously enough and should be the subject of the most anxious consideration in long-range national and economic planning and development.

(3) *European Birth Rates.*

	1946	1945	1944	1941	1936
Southern Rhodesia	25.7	25.3	24.5	25.4	23.5
England and Wales	—	16.1	18.0	14.2	14.8
Union of South Africa	27.7	25.5	26.6	25.3	24.7

(4) *European Infant Deaths.*

*Causes of Death, 1937-46.*

Disease	No. of Deaths	Total	Percentages
	1946	No. of deaths	of Total
Premature birth and diseases of early infancy	29	383	53.79
Bronchitis and pneumonia	9	69	9.69
Diarrhoea and enteritis	5	82	11.52
Malaria	4	47	6.60
Measles, whooping cough, diphtheria, dysentery	2	30	4.21
Various, not classified above	16	101	14.19
	65	712	100.00

*Deaths During Different Months, 1937-46.*

	No. of Deaths	Total	Percentages
	1946	No. of deaths	of Total
First month	38	385	54.07
Two months to six months	15	198	27.81
Six months to twelve months	12	129	18.12
	65	712	100.00

*Infant Mortality Rates.*

	1946	1945	1944	1941	1936
Southern Rhodesia	30	35	45	43	49
England and Wales	—	46	46	59	59
Union of South Africa	36	40	42	52	59

The infant mortality rate is the lowest ever recorded in Southern Rhodesia. Despite this the total of 65 infant deaths includes four from malaria. It is a regrettable fact that about one-seventh of the deaths from malaria in 1946 should be of infants under one year.

*Causes of Infant Deaths, 1946.*

International List No.	Cause of Death	Deaths
6	Cerebro-spinal (meningococcal) meningitis	1
10	Diphtheria	2
28	Malaria	4
33	Influenza	1
64	Diseases of the thymus (including status lymphaticus)	1
73	Anaemias	1
81	Meningitis (non-meningococcal)	1
84	Mental disorders and deficiency	1
86	Convulsions in children under 5 years of age	1
89	Diseases of the ear and of the mastoid antrum	1
107	Broncho-pneumonia	5
108	Lobar pneumonia	2
109	Pneumonia (unspecified)	1
111	Congestion, oedema, haemorrhagic infarction and thrombosis of the lungs	1
119	Enteritis and diarrhoea	5
122	Hernia, intestinal obstruction	1
157	Congenital malformations	10
159	Premature birth	18
160	Injury at birth	1
161	Other diseases peculiar to the first year of life	7

## (5) Causes of European Deaths, 1942-46.

	1946	1945	1944	1943	1942	Total	Percentage of Total Deaths
1.—Cancer .. .. .	86	94	95	91	89	455	12·82
2.—Violence .. .. .	53	73	108	105	152	491	13·83
3.—Heart diseases .. .. .	127	137	112	103	83	562	15·83
4.—Pneumonia and Bronchitis .. .. .	41	38	41	24	31	175	4·93
5.—Malaria and blackwater fever .. .. .	34	33	44	63	47	221	6·23
6.—Nervous diseases .. .. .	75	51	52	44	48	270	7·61
7.—Premature birth and diseases of early infancy .. .. .	38	38	48	46	39	209	5·89
8.—Tuberculosis (all forms) .. .. .	11	12	19	13	14	69	1·94
9.—Influenza .. .. .	8	7	4	9	7	35	0·99
10.—Diarrhoea and enteritis .. .. .	5	16	16	15	10	62	1·75
11.—Old age .. .. .	16	11	11	9	13	60	1·69
12.—Enteric fever .. .. .	4	3	2	4	5	18	0·51
13.—Diphtheria .. .. .	4	6	3	5	5	23	0·65
14.—Dysentery .. .. .	1	4	6	2	3	16	0·45
15.—Whooping cough .. .. .	—	5	1	6	3	15	0·42
16.—Measles .. .. .	1	—	1	3	1	6	0·17
17.—Scarlet fever .. .. .	—	—	—	—	—	—	—
18.—Other causes .. .. .	183	159	172	170	178	862	24·29
<b>TOTAL .. .. .</b>	<b>687</b>	<b>687</b>	<b>735</b>	<b>712</b>	<b>728</b>	<b>3,549</b>	<b>100·00</b>

*European Maternal Deaths, 1937-46.*

	No. of Deaths	Percentage of Total
Puerperal Sepsis .. .. .	20	35·09
Accidents of pregnancy .. .. .	5	8·77
Other accidents of childbirth .. .. .	8	14·04
Puerperal haemorrhage .. .. .	8	14·04
Puerperal albuminuria and toxæmia .. .. .	10	17·54
Other causes .. .. .	6	10·52
<b>Total .. .. .</b>	<b>57</b>	<b>100·00</b>

## CHAPTER II.—INFECTIOUS AND COMMUNICABLE DISEASES.

## (1) Notification of Infectious Disease:

Little improvement has been experienced in the notification of infectious disease, particularly in regard to native cases. Where, however, other factors operate than the mere legal requirement of notification, it is thought that the figures given in such instances may be reasonably accurate. This will apply to such diseases as smallpox where the reputation of the disease still commands wholesome respect and to silicosis where the question of compensation is involved.

Disease	European		Native	
	Cases	Deaths	Cases	Deaths
<b>1. Convention Diseases.</b>				
Cholera .. .. .	—	—	—	—
Plague .. .. .	—	—	—	—
Smallpox .. .. .	—	—	181	1
Typhus fever (exanthematous) .. .. .	—	—	—	—
Yellow fever .. .. .	—	—	—	—
<b>2. Tuberculosis and Silicosis.</b>				
Pulmonary tubercu'osis .. .. .	36	3	323	89
Non-pulmonary tuberculosis .. .. .	9	—	54	11
Silicosis .. .. .	—	—	18	9
<b>3. Infectious Diseases of Childhood.</b>				
Chickenpox .. .. .	247	—	577	—
German measles .. .. .	25	—	—	—
Measles .. .. .	345	—	433	—
Mumps .. .. .	38	—	90	—
Whooping cough .. .. .	84	—	106	—

Disease	European		Native	
	Cases	Deaths	Cases	Deaths
4. <i>Virus Encephalitis Group.</i>				
Acute anterior poliomyelitis	30	1	16	1
Polio-encephalitis	3	—	2	1
Encephalitis (not specified)	—	—	4	—
5. <i>Bacterial Infections.</i>				
Tetanus	—	—	3	1
Scarlet fever	62	—	1	—
Erysipelas	9	—	2	—
Puerperal septicaemia	2	—	9	2
Cerebro-spinal meningitis	2	—	41	4
Meningitis—other organisms	3	1	5	5
Diphtheria	51	—	231	40
Typhoid fever	24	1	84	9
Paratyphoid fevers	2	—	11	—
Undulant fever	9	—	1	—
6. <i>Miscellaneous.</i>				
Relapsing fever	—	—	3	1
Tick typhus	9	—	—	—
Trachoma	—	—	133	—
Trypanosomiasis	—	—	13	5

(2) *Malaria and Blackwater Fever.*

The number of admissions of European cases of malaria is the lowest recorded for five years and the blackwater fever admissions the lowest ever recorded in the history of the Colony. The number of registered deaths from blackwater fever is also the lowest ever recorded. It is interesting to note that during 1945-46 malaria season quinine was not available to the public for purchase as a prophylactic agent in malaria. Mepaerine had been replacing quinine during the war years, but quinine stocks had become so low in 1945 that it was decided to reserve supplies for the treatment of the disease in hospitals. How far the reduction in blackwater fever can be attributed to this is a matter for speculation. It will be interesting to note in future years when paludrine is being used whether blackwater fever will eventually disappear.

Towards the end of the year and at the beginning of the 1946-47 malaria season trials of paludrine as a prophylactic were being arranged and DDT residual sprays were being used to control mosquitoes in some of the more unhealthy Government stations.

A new pamphlet on malaria, Public Health Department No. 8, and one on DDT, Public Health Department No. 5, were produced, printed and distributed during the year.

Surveys of the anophelines of the country were continued and a great amount of data is now available and it is more and more evident that *A. gambiae* is the main vector.

(3) *Schistosomiasis (Bilharzia).*

The ravages of these diseases are difficult to estimate statistically as is so often the case with helminthic infections. As a death-dealing agency the schistosomiasis are probably of little account, but as each year passes the toll in sickness and inefficiency becomes more apparent and there is no doubt that the destruction and interference with the normal function of organs contributes a great deal to the general background picture of disease especially in the field of surgery. The work described in last year's report has been maintained during 1946 and much has been done to investigate further the methods of "fast treatment" and "fast diagnosis" described by Mr. W. Alves, the Bilharzia Research Officer. Work in the biological field has also been carried further and molluscides have been tried and the natural history of the vector snails and the cercariae have been made.

The Research Unit itself acted as a "pilot" human treatment and snail control unit during the year and demonstrated in several native reserve areas to the north of Salisbury the practicability of a two-fold attack on the disease by the synchronisation of treatment of human beings with the destruction of snails in the natural streams and rivers in the same area. The

control unit operated in two sections, one engaged in a snail survey of all water and the treatment of infested waters with copper sulphate solution applied from knapsack sprayers. It is well nigh impossible to estimate accurately the water volume being treated, the rivers during the dry season being merely a series of disconnected pools.

The human treatment section operated simultaneously and a total of 5,455 Africans of all ages were treated without incident. In fact the treatment was so popular that the unit was asked many times to carry its operations to other native areas.

The treatment was organised in the following manner. The population was asked to gather at a convenient centre and all were given a cercarial antigen skin test. Those found positive were given treatment straight away, three slow intravenous injections of sodium antimony tartarate given during one day. After the last injection the people returned home. The total dose of SAT was one grain per 20 lbs. of body weight estimated on a rough appraisal. The dose of SAT is designed to achieve a "public health" cure, that is at least to destroy the female worms and cause egg production to cease. Groups of cases were carefully controlled, for example, of 223 African children shown to be passing eggs of *S. haematobium* in the urine and treated by the method described, all but six were proved on many examinations up to four months after treatment to be no longer passing eggs. A cure rate of this order in a mass treatment campaign is very satisfactory. A number of medical practitioners have been employing the "fast treatment" method using either one grain per 12 lbs. of body weight doses divided over two days or the "public health" cure dose described. On the whole reports have been satisfactory, though five deaths of Africans have been reported following one grain per 12 lbs. of body weight. Unfortunately, no statistical comparison is possible with the mortality rate experienced in series of cases treated with the orthodox antimonial treatment. Lack of symptomatic warning of danger from antimony poisoning and lack of evidence of toxic action of the drug at *post-mortem* examination is, of course, a feature of the use of the salts of antimony parenterally.

Work on the cercarial antigen has been continued and there are considerable indications that this skin test using a cercarial antigen is a reliable method of diagnosis in mass campaigns. It seems to be satisfactory in that no negative reactors have been shown to be passing eggs in the dejecta. The reverse is, of course, not so and in many positive reactors, egg evidence of the disease is not forthcoming despite many examinations.

The Bilharzia Research Laboratory has issued over 250,000 doses of antigen to medical practitioners during the year and the reports do not all confirm the satisfactory experience in Africans. This is probably due to one or other of a variety of factors which can be summarised as follows:—

- (a) European skins, especially in female patients, tend to develop an erythema which obscures the weal. This causes some negative reactors to be classed as positive.
- (b) The use of the antigen in individual patients in a doctor's room may make the reading of the test at 10 to 15 minutes difficult. A busy practitioner may not observe the time of reading of the test scrupulously and it is well known that a positive test may be invisible at 8 minutes but may reach its maximum and have disappeared at 25 to 30 minutes.
- (c) Scrupulous intradermal technique must be observed and unless a true weal is produced it is better to repeat the injection at another site at once.

The evidence of the extent of bilharzia infection of both types in all races in Southern Rhodesia has been amply confirmed not only by the investigations of the Bilharzia Research Unit but the Public Health Laboratory reports show the widespread nature of the disease.

Plans being prepared for the development of water conservation and irrigation greatly increase the potentialities for the spread of these diseases and it is imperative that all plans made should provide for elementary snail prevention and control and the enforcement of the elementary requirements of sanitation. On at least one major irrigation scheme started before the late war, snails are rife and many of the farmers and their labourers have contracted the disease.

Steps have now been taken to deal with this problem locally and to instruct the farmers in methods designed to keep their water furrows free from the snail vectors.

(4) *Smallpox* :

The number of cases of smallpox recorded has shown an increase, though the general position can be considered satisfactory in that, despite the frequent introduction of incubating cases of the disease from neighbouring territories, no local epidemic of more than three secondary cases each occurred. These remarks do not, however, apply to an outbreak of variola minor which was allowed to smoulder in the sparsely populated Wankie District and caused a total of 148 cases. It is unfortunate that the use of the term "kaffir pox" in the diagnosis of the first cases resulted in no precautions being taken and no vaccinations were done. In this way cases in other districts in the neighbourhood were permitted to occur but were prevented from establishing local epidemics through vigorous action in mass vaccination and cordoning of the cases and their immediate contacts.

In 1946, 347,570 vaccinations were performed.

(5) *Plague* :

No cases of plague were reported and there was no evidence that the disease had occurred in the rodent population.

The nearest focus of selvatic plague is at Maun in Bechuanaland, where a small number of human cases have been reported in the recent past.

(6) *Human Trypanosomiasis* :

The number of cases reported—13, with 5 deaths—is the highest number since the year 1912 when the disease was first recognised in Southern Rhodesia.

All the cases came from the Zambesi Valley area east and west of the junction between the Zambesi and Luangwa Rivers and on both banks of the Zambesi. Three cases had their homes in Northern Rhodesia, five in Portuguese East Africa and the remaining five were Southern Rhodesian natives whose villages are in the Zambesi Valley in the area between the Chirundu trunk road to the west and the area north of Sipolilo to the east.

It is interesting to note that four out of the five indigenous cases were juveniles who had come into the settled European tsetse fly-free areas with their relatives or to seek work on their own account. As far as can be ascertained these juveniles showed the clinical signs of trypanosomiasis soon after their arrival in fly-free areas.

This is very different from the history given by a number of the adult cases which occurred in natives from the neighbouring territories. These natives entered the country through Sipolilo and then dispersed to work on farms and mines far removed from tsetse fly and the possibility of infection with trypanosomiasis. The onset of symptoms and signs of the infection were often delayed for many months after the patients had last been exposed to the bites of tsetse. Of eight cases in which it has been possible to check their movements, five had been working and living on farms and mines for seven to twelve months and three others for nineteen, twenty and twenty-eight months respectively. Yet when the disease had become clinically manifest the general deterioration and cerebral symptoms and in the fatal cases, death, was speedy.

Despite the finding of cases outside the tsetse fly areas of the Colony, no reports are received of abnormal mortality among the inhabitants who live in the tsetse fly areas which would be expected if the disease was widespread.

Shortage of medical staff has so far prevented a thorough survey of the native population living in the affected area.

(7) *Leprosy* :

The details of cases treated at the three leper hospitals of the Colony is to be found in Appendix A.

As a result of allegations made concerning the administration and supervision of the Ngomahuru Hospital and the resignation of the Medical Superintendent, a Commission of Enquiry was appointed by the Governor with Dr. A. J. Orenstein, C.B., C.M.G., C.B.E., Chief Medical Officer of the Rand Mines Group, as Chairman. The report was made public in May and steps have been taken to implement as many as possible of the recommendations,

though difficulty has been experienced in the construction of the buildings required. The disposal of the patients at Mtemwa Leper Settlement where the water supply is no longer adequate is also a matter of some anxiety. It has been possible this year to station a Medical Officer at this Settlement. He also acts as Medical Officer for the Mtoko District.

(8) *Poliomyelitis* :

A great increase in the number of cases of acute anterior poliomyelitis and polio-encephalitis was reported which is in conformity with the general trend of this group of diseases in Southern Africa.

Epidemiologically the disease remains a puzzle and it was rarely possible to relate cases one to the other by any route of infection. Few cases were reported in the towns though a number did occur in the more closely settled areas around. The cases did, however, occur in groups in the same district, that is, that cases might be reported on farms 20 to 30 miles apart but no common factor could be discovered. Cases of pyrexia, coryza and malaise were sometimes reported in conjunction with acute cases of the infection and in two instances "missed" cases with minimal residual paralyses were found to have preceded the acute case.

The general picture of the condition seems to point to the existence of the virus widespread in the population, causing pyrexia, malaise and coryza in a relatively large number of persons, but the disease proceeding to the paralytic stage only in a few instances.

It would appear, therefore, that one of the reasons for the enigmatic spread of this disease is that the fully developed paralytic case is an example of a disease with a particular complication, the incidence of the latter being only a very small percentage of the total number affected by the virus without paralysis.

(9) *Tuberculosis* :

The position in respect of this disease becomes more and more serious and has now become a major problem. Cases of the disease in females and bone tuberculosis in children are now seen with increasing frequency. The disease usually runs a rapid course to a fatal issue, but there is no doubt that with large quantities of organisms being discharged in the sputum when the patient lives in his ill-ventilated home or working place, infections must be a common occurrence. This danger includes the grave risks of familial infections.

It would seem that in the present stage of the reaction between the African and his tuberculosis, what is required is not sanatorium accommodation for prolonged convalescence but acute isolation hospitals for the segregation of the infected and a contact finding and observation service. It might then be possible to start treating cases at the very earliest stage when good nutrition and nursing might tip the balance in the patient's favour.

From the cases which have been notified the case mortality rate of nearly 25 per cent. resulted. The case mortality rate is only 9 per cent. in European cases.

### CHAPTER III.—CURATIVE SERVICES.

(1) *European Hospitals* :

The number of hospitals in operation remains fourteen and it was not found possible to staff a new cottage hospital which was built at Marandellas some time ago. The War Emergency Hospital has continued to cater for the European cases of tuberculosis and it has been impossible to take steps to develop Diggelfold into a sanatorium. Polish refugees have remained in occupation during the year. An Isolation Hospital built at Gwelo some time ago could not be staffed and the building has been loaned temporarily as a school hostel.

The European hospital admissions, the rate per 1,000 of the population and the average number of days spent in hospital by each patient are as follows:—

	1946	1941	1936
European General Hospital admissions	12,236	11,391	7,788
Admission rate per 1,000	146	164	140
Average days in hospital	11.11	11.65	9.90

The admissions include patients in hospital on January 1. It will be noted that pressure on the available beds, especially in the larger hospitals, has

reduced the admission rate and also to some degree the time spent by the patient in hospital.

One private maternity home closed down early in 1946 and this has caused a reduction in the total maternity beds to 118. On 1946 figures, this meant that there were 16 patients for each bed as compared with nearly 20 patients per bed in the General Hospitals. The statistics of European maternity cases appear in Appendix J. European Hospital statistics will be found in Appendices D, E, F, G and H.

(2) *District Nursing Service:*

There was a reduction of one in the number of District Nurses and the stations staffed were Shamva, Salisbury South, Chipinga, Melsetter, Gutu, Cashel and Marandellas. Four of the nurses are on the permanent staff, the remainder being wives of persons stationed in centres remote from hospitals, who are willing to undertake these duties.

The volume of the work done in 1946 is as follows:—

Number of homes visited .....	654
Number of home visits paid .....	4,330
Visits by patients to the nurse .....	1,129
Midwifery cases .....	28
Ante-natal care .....	105

(3) *Mental Diseases:*

The steady increase in the number of patients at the Ingutsheni Mental Hospital continues and there were 78 more patients on the registers at the end of 1946, the total being 720.

During the year 219 patients were discharged, 108 European patients of whom 95 had recovered, and 111 natives, all of whom had recovered.

Forty voluntary patients were admitted during 1946, of whom ten still remained in hospital at the end of the year.

Probation was granted in 117 cases, of whom 30 had since been discharged and 18 returned for further care.

Occupational therapy for both sexes is now well organised and is of the greatest value. Difficulty in obtaining materials, especially for soft toys and fancy work, has been a handicap in the female section.

Early in the year an assistant medical superintendent was appointed and additions to the male and female mental nursing staff has resulted in a great improvement in nursing conditions.

A considerable building programme is now under way and the male native Hospital should be ready for occupation in a few months.

Farming operations were carried on with great success and most of the produce has gone to the patients. Over 9,000 gallons of milk, 3,000 lbs. of butter and 84,000 lbs. of vegetables were produced as well as quantities of lucerne for stock feed and beans and mealies for native rations. A profit of £842 resulted from farming operations.

Two additional forms of treatment were instituted during the year, insulin therapy, which has had a limited success on account of the chronic nature of the diseases, and the operation of pre-frontal leucotomy, 20 having been performed by two Bulawayo surgeons with gratifying results. The cases were selected from those presenting behaviour problems and when all other forms of treatment had proved of no avail.

The nursing difficulties in the native Female Ward have been greatly reduced by the new operative treatment.

The statistical details of the work done at the Mental Disorders Hospital and at the Ingutsheni Hospital appear in the appendices devoted to Hospital Statistics.

(4) *Native Hospitals:*

The position regarding these institutions generally remains as it was, unsatisfactory. Overcrowding is the rule and as will be obvious from the tables the number of equipped beds bears no relation to the number of patients that have to be crowded in on mattresses on the floor or in extra beds on verandahs. In some hospitals it has been necessary to resort to tentage for patients. The accommodation for the native staff is also overcrowded in almost every instance and this has sometimes rendered difficult the employment of enough staff for the increased flow of patients.

In the present critical building position there seems little hope of alleviating matters in the immediate future. Building is, however, taking place on the hospital sites at Bulawayo and Salisbury. Priority has had to be given to domestic accommodation for native medical orderlies, especially those in training.

The hospital provision for the minority communities, the Asiatic and Coloured groups, remains somewhat unsatisfactory, but steps are being taken to improve matters.

Statistics relating to Native Hospitals will be found in Appendices D, E, F, G and H.

(5) *Native Clinics:*

This side of medical aid for Africans continues to prosper and is an accepted institution in native life. Many applications for new clinics are made but it has only been possible to meet the more outstanding claims. The provision of new clinics is now limited by a number of factors operating together. Many Government Medical Officers are already doing as much as they can in the way of clinic supervision. This is not merely a matter of medical care but involves staff supervision, rationing, discipline, minor repairs to buildings and a host of other time-consuming items. In some areas where there is a large population to be served, road communications are poor and often impossible in the wet season and clinics which cannot be supervised by a medical practitioner at regular and frequent intervals are better not built. Consideration is now being given to the possibility of arranging an aircraft service to emergency landing strips adjacent to more remote clinics. By this means of transport many hours of valuable time spent negotiating difficult roads will be eliminated. One native clinic in the Sebungwe Native District is now being serviced by air from Gatooma, and it is hoped to extend this work to other clinics in Sebungwe, especially on the Zambesi River. In April of this year the clinic construction unit built up by this Department since 1936 was taken over by the Department of Native Engineering. The inevitable minor dislocations brought about by any change of responsibility have been greatly aggravated by the universal shortage of building materials and the expansion of clinic services has been much hampered thereby. Finally many of the original clinics were of temporary construction—"pole and dagga" and are now in a serious state of disrepair. Hence a large proportion of the available building potential must be devoted to rebuilding and enlarging the clinics which have already proved their popularity and worth.

The following figures for 1936, 1941 and 1946 will serve to indicate how this work has increased in the past ten years:—

	1946	1941	1936
Number of Clinics — —	73	53	21
Inpatients treated — —	71,620	45,948	11,744
Outpatients treated — —	245,138	109,148	22,704

Details of the work done in 1946 appear at Appendix B. From the tables it will be seen that the average population of Government clinics on any day was 4,644 and that the number of in-patient units was equivalent to a stay in a government clinic for one day for each of the African inhabitants of Southern Rhodesia.

(6) *Missions:*

The Medical Missions continued to play an important part in the provision of medical care for Africans.

The Government gives financial assistance in respect of doctors and nurses employed, repays a proportion of the drug expenditure and provides free of charge drugs used in the treatment of schistosomiasis and venereal disease.

New financial provisions have now been approved and it is hoped that missions will be encouraged to improve and expand their valuable contributions to native medical care side by side with Government clinics.

A number of Government Medical Officers assist in the medical supervision of mission clinics and in addition other medical practitioners are employed at missions. Many mission clinics are little more than out-patient dispensaries but it is estimated that there is a total of 587 beds available for Africans in these clinics.



A summary of the work done by missions in 1946 compared with the figures for five and ten years ago are as follows:—

	1946	1941	1936
Number of Aided Missions — — — —	37	30	26
Total admissions — — — — — — — —	29,657	12,475	8,838
Outpatients treated — — — — — — — —	166,399	63,486	43,600
Number of equipped beds — — — — — —	587	no information available	

Details of the work done in 1946 appears at Appendix I.

(7) *Native Labour on Mines:*

Inspections of mine compounds by Health Inspectors continued throughout the year and in many cases some improvement, especially of the sanitary conditions of mine compounds has been achieved. Owing to the shortage of building material, however, it has not been possible to proceed with the replacement of the mud and thatch huts by more permanent types of structure. A further difficulty is that it is not equitable to insist on permanent buildings on mines which are still under development and whose length of life has not been ascertained. It is, therefore, quite impossible to enforce the legal standards on all mines where exist all possible variations of development from some of the well-established base mineral mines where mine compounds are well built, water-borne sanitation is installed, full hospital and medical facilities of the highest order exist, to at the other end of the scale, a small-worker starting operations 90 miles from his supply centre, living himself in a grass shelter with his few native employees around, with no proper water supply other than what is brought up the shaft and absolutely no sanitary provision.

The comparative statement of mortality on mines, 1942-1946, each year ending 30th November, is as follows:—

	1942	1943	1944	1945	1946
Average number employed at end of month — — — —	82,130	78,729	75,515	71,829	70,545
<i>Diseases—</i>					
Number of deaths — — — —	568	574	551	564	522
Death rate per mille — — — —	6.92	7.29	7.30	7.85	7.40
<i>Accidents—</i>					
Number of deaths — — — —	129	102	90	77	78
Death rate per mille — — — —	1.57	1.30	1.19	1.07	1.11
<i>All Causes—</i>					
Number of deaths — — — —	697	676	641	641	600
Death rate per mille — — — —	8.49	8.59	8.49	8.92	8.51
<i>DEATHS FROM DISEASE—</i>					
Death rate per 1,000 employed — — — —	1942	1943	1944	1945	1946
Pneumonia — — — — — — — —	2.00	1.87	1.85	2.20	1.81
Other Diseases — — — — — — — —	4.92	5.42	5.45	5.65	5.59
Total disease death rate — — — —	6.92	7.29	7.30	7.85	7.40

The following table gives the details of sickness and mortality for the 12 months ended November, 1946:—

Disease	Number of Cases	Number of Deaths	Death rate per mille per annum
Malaria — — — — — — — — — —	4,657	32	0.45
Scurvy — — — — — — — — — —	79	1	0.01
Syphilis — — — — — — — — — —	2,404	44	0.62
Pneumonia — — — — — — — — — —	1,415	128	1.81
Phthisis — — — — — — — — — —	83	56	0.79
Other diseases of Chest — — — —	1,226	18	0.26
Dysentery and Diarrhoea — — — —	1,032	13	0.18
Other Intestinal Diseases — — — —	248	28	0.40
Heart — — — — — — — — — —	77	59	0.84
Debility — — — — — — — — — —	273	9	0.13
Influenza — — — — — — — — — —	4,670	18	0.26
Other Diseases — — — — — — — —	2,347	116	1.65
Minor Ailments — — — — — — — —	19,033	—	—
<b>Total — — — — — — — — — —</b>	<b>37,544</b>	<b>522</b>	<b>7.40</b>
<i>Accidents and Injuries—</i>			
Major — — — — — — — — — —	398	78	1.11
Minor — — — — — — — — — —	15,862	—	—
<b>Total all cases — — — — — — — —</b>	<b>53,804</b>	<b>600</b>	<b>8.51</b>

(8) *Native Medical Services Generally:*

Attention was drawn in the report for 1945 to the embarrassing popularity of European medicine amongst Africans and reports from local health authorities published during 1946 stress the great increase in the use of the facilities provided. This has had a serious effect in that the training of native staff to man the institutions has lagged behind the demand. It is still difficult to get enough reliable Africans with a Standard VI education to enter into the three-year course for native male orderlies. It is becoming increasingly common to have orderlies who have married wives who have been trained as female orderlies at Missions, and in such cases both husband and wife are employed on nursing duties to the great advantage of all concerned.

The ultimate limiting factor now and probably for some years to come will be the shortage of building material for clinic and hospital construction.

The uphill battle of securing the confidence of the African people in European medicine now seems to be virtually won and it is all the more urgent, with the present pressure on accommodation, to see in what ways the prevention of disease can be encouraged.

The task of health education has hitherto not been seriously faced and it will be difficult to do so until a primary education is given to all. Propaganda by means of the dialect news-sheets is done but this reaches only a small proportion of the population and mainly the urban one at that.

One disturbing feature is the steady rise in venereal disease, both gonorrhoea and syphilis being common in the towns and in the mining areas and syphilis more widespread and now to be seen in the most remote areas of the Colony. Despite a tremendous amount of treatment that has been given to these diseases it cannot be said that any marked improvement has resulted. Penicillin in oil promises to be a good answer, clinically and administratively, to the problem of gonorrhoea, but the outlook in the treatment of syphilis is more obscure. The use of penicillin in syphilis seems to be most efficacious in the early stages of the disease, but frequently in Africans they do not present themselves for treatment until late secondary rashes appear.

An avenue of preventing these diseases which must be followed eventually is the tracing and compulsory treatment of native prostitutes who, undoubtedly, provide the main reservoir of infection. Pass laws and registration certificates do not apply to the female sex and it is extremely difficult to trace contacts.

It is not possible to obtain a complete picture of African sickness in Southern Rhodesia and in the following figures a good volume of work done by the Municipalities, especially infectious and venereal disease cases, and by the larger mines who have their own hospital facilities, has not been included. It is hoped to rectify this lack in future years.

Type of Institution	Number of Admissions	Daily Average Population	Average stay in Days	Admission Rate per 1,000	Out-patients Attended
Native Hospitals (13) .. ..	32,737	1,436.22	16.01	19.40	235,004
V.D. Sections Native Hospitals (11)	3,574	338.99	34.62	2.11	3,485
Government Native Clinics (73) ..	71,620	4,644.67	23.67	42.45	245,138
Mission Clinics (37) .. ..	29,657	1,084.38	13.34	17.58	166,399
<b>TOTAL</b> .. .. .	<b>137,588</b>	<b>7,504.26</b>	<b>19.90</b>	<b>81.55</b>	<b>650,026</b>

One in every 225 of the native population is receiving medical in-patient care on any one day.

## CHAPTER IV.—PREVENTIVE HEALTH SERVICES.

(1) *Laboratories:*

The reports of the three routine laboratories, the Public Health Laboratories at Salisbury and Bulawayo and the Government Analyst's Laboratory, Salisbury, appear in full as Appendices N, O and P, to this Report. The work of the Bilharzia Research Laboratory is discussed in Chapter II (3).

The total number of specimens examined at the routine laboratories are enumerated below and the corresponding data of five and ten years ago tabled for comparison:—

	1946	1941	1936
Public Health Laboratory, Salisbury ...	75,544	42,105	31,557
Hospital Laboratory, Umtali ...	10,258	—	—
Public Health Laboratory, Bulawayo	50,678	18,649	3,605
Hospital Laboratory, Gwelo ...	11,096	—	—
Government Analyst's Laboratory ...	2,158	1,522	844
<b>Total</b> ...	<b>149,734</b>	<b>62,276</b>	<b>36,006</b>

The branch laboratory reports are incorporated in the Salisbury and Bulawayo Laboratory Reports. These laboratories have amply justified themselves and have saved much time and transport of specimens. Each branch laboratory is staffed by a female technician assisted by native microscopists.

Staff movements in the Laboratories have been frequent and have interfered considerably with the work. Many investigations are now free to the public; free ante-natal laboratory investigations being added to the list during 1946; and the staff has done well to carry through as well as has been done. It is hoped during the coming year to appoint male technicians to make for stability in staff. This move is also made necessary by the proposal to have available two mobile laboratories for use in field investigations and in the diagnosis of formidable epidemics.

Mr. A. W. Faer, F.R.I.C., Government Analyst since the inception of the post in May, 1927, retired during the year and received many tokens of the respect in which he is held throughout the Public Service.

From small beginnings he built up his Laboratory to supply a first rate service in both the medico-legal and public health spheres, as well as in many special investigations undertaken both for the Government and for the Royal Air Force. He has been succeeded by Mr. W. H. Kitto, M.Sc.

#### (2) *Schools Medical Service:*

The medical inspector staff is now three, including two lady medical officers. A fourth inspector has been authorised, but so far no suitable candidate is available for appointment.

The details of findings at School Medical Inspections will be found in Appendices K, L and M of the Report.

The following is a summary of the work done by the medical inspectors:—

	1946	1941	1936
European children examined ...	6,724	4,536	752
Asiatic and Coloured children examined ...	1,323	452	72
African children examined ...	660	—	—
European entrants unvaccinated ...	150	442	146
Asiatic and Coloured entrants unvaccinated	72	68	—
Unsatisfactory Nutritional Standard, European children % ...	9.3	10.8	—
Asiatic and Coloured children % ...	21.0	32.6	—
African children % ...	38.6	—	—
Intelligence Testing, European children ...	737	307	5
Percentage below I.Q. 80 ...	16.5	37.1	—

It is estimated that there were 14,142 European school children in State and State-aided schools and the proportion medically examined is much greater than has been possible during the war years and a good deal of the leeway has been made up. A start has been made with African schools, but only two have so far been examined. There are said to be 162 African schools with a population of 125,000 and the task of a Schools Medical Inspection on European lines will be a formidable undertaking. There has been a slight improvement in European nutrition and quite a marked improvement in Asiatic and Coloured scholars. The latter group all receive a mid-morning supplementary meal but it is too early to say how effective this measure has been in raising the standard of nutrition.

Supplementary school meals are supplied in certain European schools and also to individual mal-nourished children in other schools.

It is estimated that there are now 684 European school children with an I.Q. of 80 or less; that is nearly 5% of the total scholars. It is difficult

to arrange special schools for this number where the children are distributed in many schools in many centres. The Schools Medical Inspectors were able to visit 66 of the 79 European schools and all but one of the 15 Asiatic and Coloured schools. Apart from the examinations these visits are useful from the point of view of medical supervision of school environment including school hostel accommodation and feeding.

(3) *Government Dental Service.*

An increase of the dental staff to four dentists was made possible towards the end of the year. When relief duties for vacation leave have been arranged it will be possible to organise a third dental centre at Gwe'lo. It will be noted that the work done by the existing staff appears to be at saturation point when compared with the work performed in past years.

SCHOOLS.

	Salisbury Division	Bulawayo Division
Number of children examined	5,523	6,964
Number of children treated	867	595
Number of fillings—		
Temporary teeth	198	280
Permanent teeth	949	291
Number of extractions—		
Temporary teeth	892	659
Permanent teeth	216	68
Number of other operations	—	—
Number of sealings	10	—

INDIGENT EUROPEANS AND NATIVES.

	Salisbury Division	Bulawayo Division
Number of extractions	2,470	1,290
Number of fillings	40	22
Number of sealings	—	2
Number of other operations	6	4
Number of dentures supplied	63	30
Number of dentures repaired	3	9

(4) *Health of the B.S.A. Police :*

During the year considerable recruitment to this Force took place and large numbers of ex-Service men of a fine physical standard were recruited from overseas.

Little change occurred in the incidence of disease as compared with former years, the European members maintaining their unblemished record of no cases of venereal disease reported for five years. The following is a summary of the health statistics for 1946 :—

	European	Native
Number sick	664	1,971
Days lost	6,772	15,285
Average days lost per case	10.19	7.7½
Cases of venereal disease	—	113
Number discharged medically		
unfit	3	6
Deaths	—	4

Note.—Light duty is counted as half a day's duty lost. All native deaths were due to violence, one being killed in a criminal assault.

(5) *Health Inspectorate :*

An increase of staff to sixteen was permitted, but it was not possible to recruit the full complement of health inspectors during the year. It was, however, possible to establish three new centres for health inspectors—Sinoia, Gatooma and Gwanda.

Inspections of butcheries and slaughter-poles have continued and despite the shortage of building materials great improvements even in African-owned butcheries have been possible during the year. The licensing authorities assist by referring applications for inspection of premises and impose conditions on licencees necessary to secure improvement.

The survey of native inns and eating-houses has been completed and this revealed a truly deplorable state of sanitation and food catering. It

has been suggested that a "Trust Houses" scheme be put into effect and eating-houses leased to approved keepers so that the meals supplied will have to conform to good nutritional standards.

To assist in the drive to improve the standard of accommodation, water supplies and catering of hotels, 87 inspections of these premises were made.

Now that war surplus stocks of portable water sterilising plants are becoming available, the standard of water supplies in out-stations will be improved. Difficulties have been experienced in the assessment of water analyses by chemical and bacteriological methods. There seems little doubt that any long delay between sampling and culture even when samples are transported by ideal means invalidates many of the results. One hundred and eighty-three samples and water surveys were performed.

An urgent need is a legal standard for native housing throughout the country. With existing regulations housing on mines and in urban areas is under control, but elsewhere housing is often really deplorable. Steps under the aegis of Central African Council are now being taken to this end.

Health surveys of townships amounted to four, and this laborious but important preliminary work in health planning is now virtually complete.

Control of a large outbreak of diphtheria in a native area was achieved by the mass prophylactic inoculation of the immediate village contacts and susceptibles for a wide area around.

The majority of vaccinations performed during the year were done by the health inspectors and their native lay vaccinators. A check resurvey of the vaccinated is now done to test the efficiency of each campaign. In the past six years a number equivalent to the population in 1946 has been vaccinated.

The following is a summary of the work done by the Health Inspectors:—

	1946	1941
Vaccinations .....	347,570	72,601
Diphtheria prophylaxis .....	44,230	—
Mosquito collections .....	23,000	—
Routine inspections of premises .....	7,093	166
Number of inspectors employed .....	12	1

There were no health inspectors in Government service in 1936.

#### (6) *Nutrition Services:*

Dr. E. Baker Jones, one of the Health Officers, has spent one year in Great Britain studying human nutrition with the Human Nutrition Unit of the Medical Research Council. He has submitted a scheme for the development of an improved standard of human nutrition which is now under consideration.

It is clear that a great deal has to be learnt about the nutritional needs of the population, particularly the Africans, and that any improvements which can be made must result from a close integration of food production, especially in native areas, with orderly marketing and distribution and the education of the people in proper methods of storage, cooking and preparing of their meals.

A minimum ration scale for native labour employed on mines is prescribed by the Mining Regulations, but it has been difficult to enforce this because of shortages, local or national, of certain more important items of the ration. For example, ground nuts and beans have been in short supply and in the latter part of the year a general cut in meat supplies, including native rations, had to be enforced.

Dehydrated food products produced in local factories have been in more general use during the year. Various types of soupmix have been popular and do provide a cheap, hot meal for the native labourer at the beginning of a day's work.

Supplementary school meals have been provided for all Coloured and Indian school children and children at certain of the European schools. The meal consists of one-third pint of milk (or cheese where milk is unobtainable) with a bun, or bread and butter or jam. It is too early to detect any significant improvement in school children's nutrition.

#### (7) *Aviation Health:*

The 1944 Amending Convention on the sanitary control of Aerial Navigation was given effect in this Colony by regulation and as a result of the new provisions amended administrative regulations were also published.

Two sanitary aerodromes have been declared—Belvedere Airport, Salisbury, and Kumalo Airport, Bulawayo—and provision for staff and services to administer the regulations has been made.

Southern Rhodesia is so situated that most of the air traffic up and down Africa passes over or lands in the Colony and distances are such that many of the larger planes make their first landing south of the endemic yellow fever area here. Anxiety has been caused by the proposal to ferry Barotse labour to the Victoria Falls area, thus bringing this endemic focus of yellow fever within a few hours of this territory.

Sera for mouse protection tests have been collected from some areas of the Colony so far with negative results, but plans are being made to carry out a more comprehensive survey of the country with the aid of the Yellow Fever Laboratory at Entebbe.

## CHAPTER V.—ADMINISTRATION AND MISCELLANEOUS.

### (1) STAFF (ESTABLISHMENT).

#### 1. Medical Officers—

<i>At Headquarters</i> (Medical Director 1, Health Officers 2, Field Officer 1, Schools Medical Officers 4) — — —	8
<i>In Districts</i> (Senior Government Medical Officers 2, Medical Officers 42, Aided Government Medical Officers 4) —	48
<i>Specialists</i> (Directors of Laboratories 2, Pathologist 1, Superintendents Mental and Leprosy Institutions 4, Radiologists 3, Ophthalmologist 1) — — — — —	11
<i>Hospital Resident Medical Officers</i> — — — — —	10

Total — — — — — 77

2. Dental Surgeons (including Senior Government Dental Surgeon)	4
3. Analytical Chemists (including Government Analyst) — — —	5
4. Pharmaceutical Chemists—	

<i>At Headquarters</i> (Supervisor of Hospitals 1, Senior Technical Assistant 1) — — — — —	2
<i>Medical Stores</i> — — — — —	2
<i>At Hospitals</i> (Hospital Secretaries 7, Hospital Dispensers 3)	10

Total — — — — — 14

5. Health Inspectors — — — — —	16
6. Laboratory Technical Assistants — — — — —	17
7. Medical Entomologist — — — — —	1
8. Anti-malaria Officer, Victoria Falls — — — — —	1
9. Nurses (Staff Matron 1, Qualified General Nurses 245, Student Nurses 167, Mental Nurses 44) — — — — —	457
10. Orthopaedic Technician — — — — —	1
11. Radiographers (including learners 8) — — — — —	17
12. Masseuses — — — — —	7
13. Dietitians — — — — —	4
14. Other European Staff — — — — —	193
15. Asiatic and African Staff — — — — —	1,300

Total — — — — — 2,105

The list includes many posts on the establishment which are temporarily vacant, but does not include various part-time workers such as consulting staff of hospitals and relieving staff.

### (2) NURSING SERVICE.

During 1946 considerable recruitment of nursing staff was possible in Great Britain, but losses for a variety of reasons have continued. It has therefore not been possible to accept the additional nursing commitments entailed in opening hospitals which have already been built but which are still not in use.

To relieve the pressure on nurses, a number of midwives without medical and surgical nursing qualifications are being engaged for employment in the larger maternity homes. This does, however, affect the flexibility of the nursing service.

The staff position at the end of 1946 was as follows:—

	Establishment	Employed
Matrons — — — — —	27	29 (a)
Sister Tutors — — — — —	4	3
Sisters — — — — —	39	18
Qualified Nurses — — — — —	165	135 (b)
District Sisters — — — — —	4	2
District Nurses — — — — —	6	4
Student Nurses — — — — —	167	142
Auxiliary Nurses — — — — —	50	8
	462	341

(a) Includes five due for pension temporarily employed.

(b) Includes six qualified only as midwives.

Of a trained staff establishment of 245, only 126 are on the permanent staff. This is a great improvement on last year's figures when there were only 65 permanent trained staff. There is, however, still a great deal of leeway to be made up. During 1946, 80 nurses joined the permanent staff, 63 recruited in Great Britain and 15 in the Union of South Africa, and only two trained in Southern Rhodesia. The local recruitment has been very disappointing as 20 nurses qualified during 1946. A number have gone elsewhere to seek further training.

In the same period there were 19 resignations from the permanent staff, marriage as always being the principal reason, 10 resigning for this reason, 6 being nurses who had joined the service in 1946, so marriage casualties are not only high but early.

The temporary trained staff have given excellent service, the services of the senior members being particularly valuable at a time when many new entrants not familiar with local nursing problems are being accepted. The temporary trained staff was reduced in number by nineteen during 1946 and further reductions must be expected as no nursing service can function smoothly as long as a large proportion of the staff are tied by other reasons to one particular town or out-station.

### (3) MEDICAL COUNCIL OF SOUTHERN RHODESIA.

The registrations with the Medical Council at the end of 1946 are given as follows:—

	Additions	Deletions	Total at 31.12.46
Medical Practitioners — — — — —	55	9	263
Dental Surgeons — — — — —	4	1	54
Chemists and Druggists — — — — —	12	7	115
Trained Nurses—general — — — — —	58	2	615
Trained Nurses—mental — — — — —	4	—	22
Trained Nurses—sick children's — — — — —	1	—	4
Midwives — — — — —	38	1	329
Masscurs and Masseuses — — — — —	—	—	16
Native Nursing Orderlies — — — — —	1	1	64
Radiographers — — — — —	—	—	2
Health Inspectors — — — — —	4	—	28
Meat and Other Foods Inspectors — — — — —	3	—	24

The number in each category of the Register is not necessarily the number practising in Southern Rhodesia. For example, it is estimated that only 169 medical practitioners are in fact resident in the Colony.

During 1946 restrictions on the registration of incoming doctors and dentists introduced as a war measure were removed.

The practice of alien doctors and dentists within internment and refugee camps is still permitted, though the number of practitioners is now greatly diminished. The need for special legislation in this connection will soon disappear.

### (4) TRAINING.

#### (i) Nursing Training:

This was carried on in Salisbury and Bulawayo Hospitals during the year with the following results:—

	Number of Candidates	Number Passed	Number Failed
Preliminary Examination — — — — —	50	36	14
Final Examination — — — — —	20	20	—

Eleven nurses passed the final examination with honours.

(ii) *Native Male Nursing Orderlies:*

Training is carried out at the Salisbury and Bulawayo Native Hospitals and the results in 1946 were as follows:—

	Number of Candidates	Number Passed	Number Failed
Lower Examination — — — —	31	29	2
Higher Examination — — — —	11	10	1

Successful candidates are admitted to a Register maintained by the Medical Council.

(iii) *Native Female Nursing Orderlies:*

After much difficulty at the outset training of native females is proceeding well at Bulawayo Hospital.

(iv) *Health Inspectors:*

The first class of students were examined at Salisbury in 1946 for the Health Inspector's Certificate of the Royal Sanitary Institute. Five candidates offered, but only two were successful in the examination. Few students have embarked on the second course of instruction, and when they have been examined early in 1948 Health Inspector training in Southern Rhodesia will have to be abandoned but with some regret.

It has been difficult with small classes and few instructors to keep the course going and the lack of local interest in training for a useful career has been disappointing.

(v) *Native Health Demonstrators:*

Arrangements have now been completed to start this type of training at the Government School at Domboshawa. The plan is to give a final year's intensive health instruction to students who have completed two years' post-standard VI training in artisan and farming subjects. They will then be on a par with native medical orderlies in training and salary scales. It is intended to have the training very practical so that the demonstrator will be a "doer" and not merely an inspector or adviser in the image of a European Health Inspector.

The previous artisan and practical training in a rural setting at Domboshawa will, it is hoped, result in a health demonstrator still in close touch with and appreciating the problems of rural existence for Africans.

(5) *ST. JOHN AMBULANCE AND RED CROSS ASSOCIATIONS.*

The conversion of the activities of these bodies to a peace-time basis has proceeded smoothly and the interest and enthusiasm of their members has been sustained.

Both organisations have contributed to the Auxiliary Nursing Service which continues to serve a valuable function in Government Hospitals in the critical shortage of registered nurses. A few members are employed who'e-time in this service, the majority on a part-time basis. An additional service offered by members is attendance at schools when Schools Medical Officers are making their inspections. Their work in this connection has been excellent and has greatly facilitated the speedy examination of the children. The members have gained valuable experience in the observation of children's ailments.

The Blood Transfusion Services at Bulawayo and Salisbury have been organised most efficiently and have continued to meet the increasing demands made upon their donors.

Last year Medical Comforts Depots were established to organise on a loan basis the provision of items of equipment for home nursing such as bed-pans, invalid chairs and bed tables, articles which otherwise would be unobtainable or expensive when suddenly required for an illness at home.

The members of St. John Ambulance Association gained a total of 1,810 certificates and performed over 16,000 hours of hospital duty during 1946.

British Red Cross Society members earned 262 awards and over 30,000 hours of nursing duties served, over 20,000 of which were given by members of African Detachments.

Both organisations are devoting more and more attention to the African members and the response from men and women alike has been very encouraging and the lesson of voluntary service to their fellows one of the most important to be learnt.



## (6) HABIT-FORMING DRUGS.

Import Certificates: 56 permits were issued during 1946.

*Actual Imports.*

Drug	Grammes
Medicinal Opium — — — — —	227
Opium (in tinctures, extracts and other preparations)	3,810
Indian Hemp (in form of galenicals) — — — — —	3,175
Morphine Alkaloid — — — — —	1,050
Diacetyl Morphine (Heroin) Alkaloid — — — — —	460
Cocaine Alkaloid — — — — —	356
Methyl Morphine (Codeine) Alkaloid — — — — —	1,391
Ethyl Morphine (Dionine) Alkaloid — — — — —	6

Export Certificates: 17 permits were issued during 1946.

*Actual Exports.*

Drug	Grammes
Medicinal Opium — — — — —	—
Opium (in tinctures, extracts and other preparations)	172
Indian Hemp (in form of galenicals) — — — — —	—
Morphine Alkaloid — — — — —	2
Diacetyl Morphine (Heroin) Alkaloid — — — — —	18
Cocaine Alkaloid — — — — —	28
Methyl Morphine (Codeine) Alkaloid — — — — —	124
Ethyl Morphine (Dionine) Alkaloid — — — — —	—

*Veterinary Department*: One permit was issued by the Veterinary Department in 1946 for the purchase of 20 ounces of Tincture of Opium.

R. M. MORRIS, M.D., D.P.H.,

*Medical Director and Chief Health Officer.*

## ANNUAL REPORT.—LIST OF TABLES AND APPENDICES.

- A. Leprosy.
- B. Government Native Clinics.
- C. Classification of European Deaths.
- D. Admissions and Deaths, Government Hospitals.
- E. Outpatient Attendances (excluding V.D.), Government Hospitals.
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- I. Medical Missions.
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- K. Schools Medical Service: Inspections, European Schools.
- L. Schools Medical Service: Inspections, Coloured Schools.
- M. Schools Medical Service: Inspections, Other Conditions.
- N. Report of the Public Health Laboratory, Salisbury.
- O. Report of the Public Health Laboratory, Bulawayo.
- P. Report of the Government Analyst, Salisbury.

TABLE A.

## LEPROSY, 1946.

Institution	Race of Patients	Number on Registers 1/1/46	Admissions	Readmitted for Treatment	Readmitted for Economic Reasons	Discharged	Died	Deserted	Number on Registers 31/12/46	Total Treated	Children Born
Ngomahuru .. .. .	European	5	—	—	—	—	—	—	5	5	—
	Coloured	1	—	—	—	—	—	—	1	1	—
	Native	493	158	91	4	62	29	30	625	746	10
Mtemwa .. .. .	Native	489	108	45	—	21	27	18	576	642	18
Mucene .. .. .	Native	16	3	—	—	1	—	3	16	19	—
TOTAL .. .. .		1,004	269	136	4	84	56	51	1,223	1,413	28

TABLE B.

## GOVERNMENT NATIVE CLINICS, 1946.

Clinic	Admissions			Inpatient Units			Deaths			Outpatients			Outpatient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
	Antelope	—	26	26	—	253	253	—	—	—	481	3,992	4,473	1,826	7,141
Arrowan	117	689	806	3,200	13,402	16,602	4	15	19	89	1,006	1,095	356	2,241	2,597
Banlet	345	1,603	1,948	12,662	14,091	27,353	—	39	39	137	2,435	2,435	480	9,276	9,753
Belingwe	450	1,111	1,561	18,900	12,221	31,121	3	33	36	120	635	755	720	3,810	4,530
Birchenough	29	755	784	1,255	8,278	9,533	—	3	3	4	2,796	2,800	120	10,324	10,444
Bulera	60	303	363	2,957	9,547	12,504	2	4	6	184	1,587	1,771	871	7,764	8,635
Chibi	399	1,659	2,058	16,758	42,015	58,773	4	13	17	—	1,032	1,032	—	23,772	23,772
Chiduku	19	249	268	1,579	4,186	5,765	1	4	5	146	702	848	291	10,649	10,940
Chilimanzhi	249	704	953	4,909	14,300	19,209	2	13	15	34	1,522	1,556	367	7,958	8,325
Chinomwe	111	389	500	4,073	7,628	11,701	—	11	11	57	1,380	1,437	342	3,893	4,205
Chipinga	81	1,055	1,136	1,592	16,309	17,901	—	17	17	107	1,693	2,070	689	31,574	32,233
Concession	872	1,085	1,957	30,454	22,722	53,176	8	90	98	605	1,080	1,685	3,630	2,131	5,761
Darwendale	273	557	830	4,850	7,753	12,603	1	16	17	41	1,971	2,012	180	6,842	7,022
Ezeexvale	316	504	820	16,758	13,712	30,470	5	11	16	351	3,183	3,534	4,212	9,550	13,762
Filabusi	245	1,161	1,406	10,275	30,266	40,541	11	59	70	510	1,854	2,364	5,100	5,562	10,662
Fort Usher	716	24	740	30,267	565	30,833	2	—	2	382	3,475	3,857	2,291	4,950	7,241
Gokwo	102	250	352	3,132	8,511	11,643	1	5	6	29	897	926	539	6,519	7,058
Hartley	287	1,270	1,557	10,159	15,072	25,231	2	44	46	146	2,944	3,090	476	8,792	9,268
Highfield	—	537	537	—	4,072	4,072	—	14	14	591	9,054	9,645	4,765	43,642	48,407
Inyanga	86	862	948	1,913	13,226	15,139	—	6	6	426	8,931	9,357	2,135	44,655	46,790
Inyati	354	907	1,261	16,124	19,838	35,962	4	32	36	186	818	1,004	2,050	9,442	11,492
Jena	36	479	515	1,512	7,125	8,637	—	7	7	220	2,817	3,037	2,670	20,740	23,410
Kezi	—	347	347	—	8,300	8,300	—	—	—	76	803	879	138	1,208	1,346
Kutana	110	542	652	1,470	6,349	7,819	—	—	—	148	19,467	19,615	1,480	25,920	27,400
Kwenda	91	352	443	2,713	6,033	8,746	1	2	3	150	3,110	3,260	856	13,432	14,288
Lady Mary Baring	75	166	241	1,285	2,020	3,305	2	3	5	113	642	755	1,052	3,110	4,132
Loreto (a)	76	593	669	820	7,116	7,936	—	8	8	414	8,789	9,203	4,179	15,182	19,361
Lukosi	241	214	455	10,030	9,058	19,088	—	—	—	56	264	320	656	2,540	3,196
Lupani	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Luveve	18	542	560	168	6,349	6,517	—	2	2	104	4,881	4,985	7,280	7,554	14,834
Makumbi	24	1,394	1,418	910	17,079	17,989	—	15	15	31	7,996	8,027	186	31,218	31,404
Marandellas	648	1,687	2,335	24,853	27,841	52,694	2	60	62	27	2,370	2,397	216	11,780	11,996
Mabedzenge	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Maranko	75	451	526	690	3,930	4,620	1	7	8	110	1,472	1,582	590	4,893	5,483
Miami	359	747	1,106	6,616	13,482	20,098	2	12	14	99	1,793	1,892	594	4,961	5,555
Mondoro	253	1,342	1,595	2,634	13,085	15,769	2	2	2	375	4,491	4,866	1,995	14,705	16,700
Matibi	488	782	1,270	12,332	16,150	28,482	3	5	8	157	439	596	5,618	5,166	10,784
Mt. Darwin	207	511	718	3,571	8,357	11,928	3	7	10	158	1,057	1,215	462	6,203	6,665
Mphoengs	83	144	227	1,984	3,970	5,954	—	3	3	263	1,141	1,404	2,103	5,702	7,805
Mrewa	195	1,399	1,594	21,749	29,622	51,371	—	28	28	—	4,276	4,276	—	8,722	8,722
Mtoko	282	3,141	3,423	9,577	38,035	47,612	—	34	34	505	4,729	5,235	1,016	11,214	12,230
Norton	316	705	1,022	6,989	22,170	29,159	2	5	7	588	3,642	4,230	4,670	10,420	15,100
Nyamandhlovu	89	510	599	3,223	9,905	13,129	—	11	11	102	1,619	1,721	237	3,236	3,473

Clinic	Admissions			Inpatient Units			Deaths			Outpatients			Outpatient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
Nyamazuwi	91	809	1,000	2,473	8,721	11,194	2	2	4	23	3,669	3,692	35	5,027	5,052
Nyanyedzi	72	737	809	1,764	8,692	10,456	2	8	10	140	3,214	3,354	1,026	16,090	17,116
Odzi	494	535	1,029	6,327	4,772	11,099	2	3	5	88	1,625	1,713	453	10,754	11,207
Plumtree	301	857	1,158	11,927	30,518	42,445	2	33	35	807	2,315	3,122	11,404	9,260	20,654
Range	234	493	727	10,119	9,074	19,193	1	4	5	61	705	766	416	2,956	3,372
Rosa	71	747	818	1,862	8,954	10,816	3	16	19	331	6,760	7,091	774	15,830	16,904
Selukwe	430	919	1,349	20,865	13,488	34,353	—	32	32	624	4,012	4,636	2,741	15,200	17,214
Shabani	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shangani	316	490	806	19,497	16,398	35,895	2	5	7	252	1,900	2,152	2,014	8,447	11,188
Shiota	352	1,237	1,589	15,761	25,748	41,509	—	4	4	446	4,809	5,255	4,863	7,481	12,314
Sipollo	17	374	391	611	5,372	5,983	1	5	6	—	5,545	5,545	—	28,577	28,577
Sipepa	285	209	494	22,490	6,378	28,868	3	7	10	162	1,647	1,809	1,233	4,337	4,375
Stanley	50	177	227	1,793	4,215	6,008	—	8	8	321	1,458	1,779	1,964	6,004	7,237
Tjolotjo	118	432	550	6,805	11,425	18,230	—	8	8	154	1,686	1,840	864	5,647	5,867
Tsonzo	18	293	311	437	3,142	3,579	—	2	2	486	4,692	5,178	1,729	5,696	7,425
Umvuma	420	1,122	1,542	7,261	15,262	22,523	1	9	10	498	3,909	4,407	1,362	20,855	22,217
Victoria Reserve	—	—	—	—	—	—	—	—	—	1,135	2,689	3,824	1,135	2,894	4,029
Victoria Falls	—	—	—	—	—	—	—	—	—	—	9,862	9,862	—	18,995	18,995
Wedza	164	998	1,162	6,632	19,551	26,183	2	8	10	58	4,562	4,620	456	20,000	20,456
TOTAL (62)	12,210	41,645	53,855	427,741	707,173	1,134,914	87	792	879	13,917	200,975	214,892	99,945	683,762	783,707
Ndanga	2,764	1,685	4,449	68,610	36,628	105,138	35	34	69	—	—	1,194	—	—	—
Dispensary A	456	1,590	2,046	18,074	51,113	69,187	2	26	28	—	—	1,710	—	—	—
Dispensary B	241	762	1,003	8,208	33,759	41,967	4	11	15	—	—	1,283	—	—	—
Dispensary C	197	873	1,070	7,193	29,635	36,828	5	8	13	—	—	1,046	—	—	—
Dispensary G	203	994	1,197	8,233	35,294	43,527	3	5	8	—	—	3,033	—	—	—
Bikita	296	1,447	1,743	7,148	32,100	39,248	5	20	25	—	—	1,730	—	—	—
Chichidza	129	565	694	6,702	28,466	35,168	2	8	10	—	—	2,515	—	—	—
Guta	142	873	1,015	4,994	19,478	24,472	6	16	22	—	—	4,726	—	—	—
Chingombe	533	3,016	3,549	17,893	94,843	112,736	5	24	29	—	—	10,613	—	—	—
Chiduma's	6	355	361	1,091	28,966	30,057	—	1	1	—	—	1,482	—	—	—
Sangwe	25	613	638	1,569	20,493	22,062	—	11	11	—	—	914	—	—	—
TOTAL NDANGA UNIT (11)	4,992	12,773	17,765	149,715	410,675	560,390	67	164	231	—	—	30,246	—	—	—
GRAND TOTAL (73)	17,202	54,418	71,620	577,456	1,117,848	1,695,304	154	956	1,110	13,917	200,975	245,138	99,945	683,762	783,707

(a) Previously a Mission Clinic.

## CLASSIFICATION OF EUROPEAN DEATHS, 1946.

*Deaths Classified According to the International List of Causes of Sickness and Death.*

I. *Infective and Parasitic Diseases.*

International List No.	Cause of Death	Number of Deaths
1	Typhoid fever	4
6	Cerebro-spinal (meningococcal) meningitis	1
10	Diphtheria	4
12	Tetanus	1
13	Tuberculosis of the respiratory system—	
	(a) with mention of occupational disease of lung	2
	(b) without mention of occupational disease of lung	6
14	Tuberculosis of the meninges and central nervous system	2
15	Tuberculosis of the intestines and peritoneum	1
24	Purulent infection and septicaemia	1
27	Dysentery	1
28	Malaria	30
28d	Blackwater fever	4
30	Syphilis—	
	(b) General paralysis of the insane	1
	(c) Aneurysm of the aorta	4
	(d) Other forms of syphilis	1
31	Relapsing fever	1
33	Influenza	8
35	Measles	1
36	Acute poliomyelitis and polioencephalitis	6
41	Hydatid disease	1
42	Other diseases due to helminths	1
44	Other infective or parasitic diseases	1

II. *Cancer and Other Tumours.*

45	Cancer of the buccal cavity and pharynx	5
46	Cancer of the digestive organs and peritoneum	44
47	Cancer of the respiratory system	11
48	Cancer of the uterus	9
50	Cancer of the breast	6
51	Cancer of the male genital organs	5
52	Cancer of the urinary organs	2
55	Cancer of other or unspecified organs	4
56	Non-malignant tumours	2
57	Tumours of undetermined nature	2

III. *Rheumatism, Diseases of Nutrition and of the Endocrine Glands, Other General Diseases and Vitamin Deficiency Diseases.*

58	Rheumatic fever	3
59	Chronic rheumatism and other rheumatic diseases	2
61	Diabetes mellitus	11
64	Diseases of the thymus (including status lymphaticus)	4
66	Other general diseases	2

IV. *Diseases of the Blood and Blood-Forming Organs.*

72	Haemorrhagic conditions	3
73	Anaemias	5
74	Leukaemias and aleukaemias	1
75	Diseases of the spleen	2

V. *Chronic Poisoning and Intoxication.*

77	Alcoholism (Ethylism)	2
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VI. *Diseases of the Nervous System and  
Sense Organs.*

International List No.	Cause of Death	Number of Deaths
80	Encephalitis (non-epidemic) .....	2
81	Meningitis (non-meningococcal) .....	3
82	Diseases of the Medulla and spinal cord .....	4
83	Intra-cranial lesions of vascular origin .....	50
84	Mental disorders and deficiency .....	6
85	Epilepsy .....	1
86	Convulsions in children under 5 years of age .....	1
87	Other diseases of the nervous system .....	7
89	Diseases of the ear and the mastoid antrum .....	1

VII. *Diseases of the Circulatory System.*

92	Chronic affections of the valves and endocardium	13
93	Diseases of the myocardium .....	46
94	Diseases of the coronary arteries, angina pectoris	62
95	Other diseases of the heart .....	6
97	Arteriosclerosis (excluding coronary or renal sclerosis or cerebral haemorrhage) .....	7
98	Gangrene .....	1
102	High blood pressure (idiopathic) .....	9

VIII. *Diseases of the Respiratory System.*

105	Diseases of the larynx .....	1
106	Bronchitis .....	4
107	Broncho-pneumonia .....	8
108	Lobar pneumonia .....	20
109	Pneumonia (unspecified) .....	9
110	Pleurisy .....	2
111	Congestion, oedema, haemorrhagic infarction and thrombosis of the lungs .....	3
112	Asthma .....	6

IX. *Diseases of the Digestive System.*

115	Diseases of the buccal cavity and annexa and of the pharynx and tonsils .....	1
116	Diseases of the oesophagus .....	1
117	Ulcer of the stomach or duodenum .....	5
118	Other diseases of the stomach .....	1
119 & 120	Enteritis and diarrhoea .....	5
121	Appendicitis .....	10
122	Hernia, intestinal obstruction .....	6
123	Other diseases of the intestines .....	2
124	Cirrhosis of the liver .....	10
125	Other diseases of the liver .....	5
126	Biliary calculi .....	1

X. *Diseases of the Urinary and Genital Systems  
(not Venereal or Connected with Pregnancy  
or the Puerperium)*

130	Acute nephritis .....	3
131	Chronic nephritis .....	16
132	Nephritis not stated to be acute or chronic (over 10 years of age) .....	6
133	Other diseases of the kidney and ureters .....	1
137	Diseases of the prostate .....	8
139	Diseases of the female genital organs .....	1

XI. *Diseases of Pregnancy, Childbirth and of  
the Puerperal State.*

146	Haemorrhage of childbirth and the puerperium .....	1
147	Infection during childbirth and the puerperium .....	1
149	Other accidents of childbirth .....	2

International List No.	Cause of Death	Number of Deaths
<i>XII. Diseases of the Skin and Cellular Tissue.</i>		
<i>XIII. Diseases of the Bones and Organs of Movement.</i>		
155	Other diseases of the bones — — — — —	1
<i>XIV. Congenital Malformations.</i>		
157	Congenital malformations — — — — —	12
<i>XV. Diseases peculiar to the First Year of Life.</i>		
159	Premature birth — — — — —	18
160	Injury at birth — — — — —	1
161	Other diseases peculiar to the first year of life — — — — —	7
<i>XVI. Senility, Old Age.</i>		
162	Senility, old age — — — — —	16
<i>XVII. Deaths from Violence.</i>		
163	Suicide by poisoning—	
	(a) Suicide by solid or liquid toxic or corro- sive substance — — — — —	1
	(b) Suicide by poisonous gas — — — — —	2
164	Other forms of suicide—	
	(b) Suicide by drowning — — — — —	1
	(c) Suicide by firearms and explosives — — — — —	8
	(d) Suicide by cutting or piercing instruments — — — — —	1
	(f) Suicide by crushing — — — — —	1
	(g) Suicide by other or unspecified means — — — — —	1
166	Homicide by firearms — — — — —	1
167	Homicide by cutting or piercing instruments — — — — —	1
169	Railway accidents (any cause of death except war) — — — — —	3
170	Motor vehicle accidents (any cause of death except war) — — — — —	5
174	Accidents in mines and quarries (any cause except war) — — — — —	2
176	Accidents caused by machinery (any cause of death) — — — — —	1
181	Accidental burns (conflagration excepted) — — — — —	1
182	Accidental mechanical suffocation — — — — —	1
183	Accidental drowning — — — — —	8
184	Accidental injury by firearms — — — — —	4
186	Accidental injury by fall, crushing, landslide, etc. — — — — —	4
188	Injury by animals — — — — —	1
193	Other accidents due to electric currents — — — — —	1
195	Other accidents — — — — —	5
<i>XVIII. Ill-defined Causes of Death.</i>		
200	Causes of death unstated or ill-defined — — — — —	14
Total deaths — — — — —		687

TABLE D.

## ADMISSIONS TO GOVERNMENT HOSPITALS, 1946.

Hospital	Euro- pean	Native V.D.	Native other than V.D.	Total	Deaths		
					Euro- pean	Native V.D.	Native other than V.D.
Salisbury .. .. .	3,153	—	6,949	10,102	89	—	417
Bulawayo .. .. .	4,233	228	7,820	12,281	133	—	521
Bindura .. .. .	293	13	1,448	1,754	6	—	71
Enkeldoorn .. .. .	159	54	1,326	1,539	3	—	63
Fort Victoria .. .. .	351	307	808	1,466	7	6	50
Gatooma .. .. .	814	761	3,070	4,645	26	4	175
Gwanda .. .. .	101	272	1,364	1,737	3	1	62
Gwelo .. .. .	758	320	2,318	3,396	32	1	127
Que Que .. .. .	260	485	1,386	2,131	8	5	103
Rusapi .. .. .	238	331	1,064	1,633	2	5	42
Selukwe .. .. .	310	—	—	310	6	—	—
Shamva .. .. .	12	560	1,020	1,592	—	7	36
Sinoia .. .. .	301	243	1,459	2,003	4	1	84
Umtali .. .. .	983	—	2,671	3,654	15	—	79
<b>Total .. .. .</b>	<b>11,966</b>	<b>3,574</b>	<b>32,737</b>	<b>48,277</b>	<b>334</b>	<b>30</b>	<b>1,830</b>
Ingutsheni .. .. .	105	—	247	352	7	—	48
Nervous Disorders .. .. .	285	—	—	285	3	—	—
<b>GRAND TOTAL .. .. .</b>	<b>12,356</b>	<b>3,574</b>	<b>32,984</b>	<b>48,914</b>	<b>344</b>	<b>30</b>	<b>1,878</b>

TABLE E.

OUTPATIENT ATTENDANCES (EXCLUDING VENEREAL DISEASE),  
GOVERNMENT HOSPITALS, 1946.

Hospital	European	Coloured and Native	Total
Salisbury .. .. .	21,921	70,296	92,217
Bulawayo .. .. .	11,342	89,780	101,122
Bindura .. .. .	322	3,047	3,369
Enkeldoorn .. .. .	372	1,816	2,188
Fort Victoria .. .. .	1,942	5,900	7,842
Gatooma .. .. .	957	7,702	8,659
Gwanda .. .. .	639	1,069	1,708
Gwelo .. .. .	1,607	28,266	29,873
Que Que .. .. .	190	1,006	1,196
Rusapi .. .. .	208	4,272	4,480
Selukwe .. .. .	32	—	32
Shamva .. .. .	32	—	32
Sinoia .. .. .	139	6,738	6,877
Umtali .. .. .	554	15,112	12,666
<b>TOTAL .. .. .</b>	<b>40,857</b>	<b>235,004</b>	<b>275,861</b>

[ TABLE F.



## FREE PATIENTS MAINTAINED IN GOVERNMENT HOSPITALS, 1946.

Hospital	Number of Patients			Number of In-Patient Units		
	European	Coloured and Native	Total	European	Coloured and Native	Total
Salisbury .. ..	414	6,922	7,336	7,110	76,348	83,458
Bulawayo .. ..	851	7,112	7,963	8,597	100,107	108,704
Bindura .. ..	32	1,427	1,459	163	16,055	16,218
Enkeldoorn .. ..	39	1,403	1,442	373	22,777	23,150
Fort Victoria .. ..	52	810	862	316	10,255	10,571
Gatooma .. ..	127	2,595	2,722	637	41,801	42,438
Gwanda .. ..	8	1,244	1,252	39	27,779	27,818
Gwelo .. ..	82	2,153	2,235	1,585	33,492	35,077
Que Que .. ..	15	1,333	1,348	305	29,729	30,034
Rusapi .. ..	28	1,127	1,155	500	11,781	12,281
Selukwe .. ..	63	—	63	541	—	541
Shamva .. ..	6	1,389	1,395	38	13,110	13,148
Sinoia .. ..	19	1,453	1,472	188	17,947	18,135
Umtali .. ..	131	2,519	2,650	1,132	46,591	47,723
<b>TOTAL .. ..</b>	<b>1,867</b>	<b>48,356</b>	<b>50,223</b>	<b>21,584</b>	<b>447,772</b>	<b>469,356</b>
Ingutsheni .. ..	137	640	777	30,235	153,589	183,824
Mental Disorders ..	50	—	50	1,371	—	1,371
<b>GRAND TOTAL</b>	<b>2,054</b>	<b>48,996</b>	<b>51,050</b>	<b>53,190</b>	<b>601,361</b>	<b>654,551</b>

TABLE G.

## STAFFING, BEDS AND PATIENTS AT GOVERNMENT HOSPITALS (EXCLUDING VENEREAL DISEASE), 1946.

Hospital	Nursing Staff		Number of Beds		Number of Inpatients		(a)	Daily Average of Inpatients			Number of Inpatient Units Maintained			Average Stay in Hospital in Days		
	E.	N.	E.	C. + N.	E.	C. + N.		Total	E.	C. + N.	Total	E.	C. + N.	Total	E.	C. + N.
Salisbury ..	79	26	180	219	3,262	7,197	10,459	124.5	236.4	360.9	45,439	86,318	131,757	13.93	11.99	
Bulawayo ..	110	56	193	330	4,332	8,051	12,383	142.4	309.7	452.1	51,988	113,051	165,039	12.00	14.04	
Bindura ..	4	10	11	25	296	1,476	1,772	5.0	44.8	49.8	1,853	16,356	18,209	6.26	11.08	
Enkeldoorn ..	4	12	13	43	163	1,368	1,531	3.5	61.5	65.0	1,274	22,477	23,751	7.81	16.43	
Fort Victoria ..	5	15	14	36	355	832	1,187	6.1	29.9	35.0	2,315	10,589	20,444	6.52	12.72	
Gatooma ..	6	26	42	140	822	3,179	4,001	15.6	139.4	155.0	5,989	50,878	56,567	6.92	16.09	
Gwanda ..	4	8	13	84	101	1,441	1,542	2.1	39.4	41.5	792	31,447	32,239	7.84	21.82	
Gwelo ..	13	16	56	64	775	2,395	3,170	24.0	96.7	129.7	8,750	35,309	44,059	11.29	14.74	
Que Que ..	6	15	14	26	264	1,357	1,621	6.3	96.6	102.9	2,294	35,286	37,580	8.68	26.00	
Rusapi ..	4	6	13	28	239	1,127	1,366	5.3	69.3	74.6	1,959	25,314	27,273	8.19	22.46	
Selukwe ..	6	—	17	—	316	—	316	7.9	—	7.9	2,897	—	2,897	9.16	—	
Shamva ..	3	7	6	36	12	1,052	1,064	0.25	37.8	38.0	93	13,884	13,977	7.75	13.19	
Sinoia ..	6	13	12	65	305	1,763	2,068	5.8	53.5	59.3	2,097	19,472	21,569	6.87	11.04	
Umtali ..	13	18	38	93	994	2,770	3,764	23.3	174.9	198.2	8,521	63,839	72,360	8.57	23.04	
<b>TOTAL ..</b>	<b>263</b>	<b>228</b>	<b>662</b>	<b>1,189</b>	<b>12,236</b>	<b>34,008</b>	<b>46,224</b>	<b>372.5</b>	<b>1,436.2</b>	<b>1,808.7</b>	<b>135,961</b>	<b>524,220</b>	<b>660,181</b>	<b>11.11</b>	<b>15.41</b>	
Inqutsheni ..	33	67	130	430	273	721	994	107.1	478.3	585.4	49,089	174,567	223,656	179.81	242.11	
Nervous Diseases	6	—	20	—	209	—	299	15.5	—	15.5	5,647	—	5,647	18.88	—	
<b>GRAND TOTAL</b>	<b>302</b>	<b>295</b>	<b>772</b>	<b>1,619</b>	<b>12,803</b>	<b>34,729</b>	<b>47,537</b>	<b>522.4</b>	<b>1,889.8</b>	<b>2,412.2</b>	<b>190,697</b>	<b>689,787</b>	<b>880,484</b>	<b>14.88</b>	<b>19.86</b>	

x 12,1904

(a) Includes patients in hospital on 1st January, 1946.

TABLE H.

ADMISSIONS TO GOVERNMENT HOSPITALS, 1946, OF CASES OF MALARIA, BLACKWATER FEVER, DYSENTERY, PNEUMONIA,  
TYPHOID FEVER AND SCURVY.

Hospital	Malaria				Blackwater Fever				Dysentery				Pneumonia				Typhoid Fever				Scurvy				
	European		Col. + Native		European		Col. + Native		European		Col. + Native		European		Col. + Native		European		Col. + Native		European		Col. + Native		
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	
Salisbury ..	131	2	111	4	1	—	—	26	—	42	2	69	7	682	98	4	1	7	1	—	—	—	—	8	—
Bulawayo ..	229	3	353	—	1	1	—	74	1	99	3	137	11	586	76	9	1	36	4	1	—	—	13	—	
Bindura ..	156	1	205	11	1	—	—	11	—	27	—	11	1	86	12	—	—	—	—	—	—	—	—	—	—
Enkeldoorn ..	53	—	103	2	—	—	—	1	—	—	—	2	—	34	15	1	—	3	—	1	—	—	3	—	—
Fort Victoria ..	75	—	78	—	—	—	—	7	—	21	9	13	—	56	3	—	—	2	1	—	—	—	—	—	—
Gatoorna ..	94	2	245	19	1	1	—	5	1	10	4	12	1	93	50	—	—	1	—	—	—	—	—	—	—
Gwanda ..	5	—	38	—	—	—	—	2	—	12	1	—	—	57	4	—	—	—	—	—	—	—	—	2	—
Gwelo ..	47	—	306	13	—	—	—	12	—	34	2	18	2	116	17	—	—	—	—	—	—	—	—	2	—
Que Que ..	10	1	19	1	—	—	—	4	—	2	1	8	1	49	27	1	—	—	—	—	—	—	—	—	—
Rusopi ..	55	—	78	3	1	—	—	3	—	9	—	10	—	124	14	—	—	4	1	—	—	—	—	—	—
Selukwe ..	49	—	—	—	—	—	—	6	—	—	—	31	—	—	—	—	—	—	—	—	—	—	—	—	—
Shamva ..	9	—	265	3	1	—	—	—	—	4	4	—	—	40	5	—	—	—	—	—	—	—	—	—	—
Sinoia ..	93	1	84	1	—	—	—	3	—	2	—	13	—	145	15	2	—	7	1	—	—	—	—	22	—
Umfali ..	140	2	300	5	3	—	2	5	—	9	1	37	—	151	18	5	1	23	4	—	—	—	—	—	—
<b>TOTAL</b> ..	<b>1,116</b>	<b>12</b>	<b>2,186</b>	<b>62</b>	<b>9</b>	<b>2</b>	<b>2</b>	<b>159</b>	<b>2</b>	<b>271</b>	<b>27</b>	<b>361</b>	<b>23</b>	<b>2,219</b>	<b>354</b>	<b>22</b>	<b>3</b>	<b>83</b>	<b>12</b>	<b>2</b>	<b>—</b>	<b>—</b>	<b>50</b>	<b>—</b>	<b>—</b>

C. — Cases. D. — Deaths.

MEDICAL MISSIONS, 1946.

TABLE I.

Mission	Admissions			Inpatient Units			Deaths			Outpatients			Outpatient Treatments		
	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total	V.D.	Other	Total
All Souls', Mrewa	358	5,337	5,695	1,114	9,450	10,564	3	22	25	307	4,552	4,859	3,048	26,185	29,233
American Board ..	71	817	888	1,685	17,547	19,232	—	23	23	295	2,996	3,291	2,685	12,726	15,411
Bonda ..	173	1,113	1,286	4,192	17,002	21,194	2	23	25	512	3,420	3,932	2,901	14,485	17,386
Chikore ..	6	318	324	415	2,585	3,000	1	6	7	10	1,219	1,229	456	4,452	5,908
Chichiwasha ..	—	163	163	—	2,449	2,449	1	1	1	1	600	601	6	7,368	7,374
Dadaya ..	—	74	74	—	725	725	—	—	—	13	245	258	124	5,642	5,766
Driefontein ..	14	386	400	43	3,077	3,120	—	8	8	20	3,552	3,572	100	16,807	16,907
Empandeni ..	8	298	276	81	2,425	2,506	1	2	3	93	14,019	14,112	595	24,809	25,404
Epworth ..	—	—	—	—	—	—	—	—	—	—	537	537	—	2,914	2,914
Gokomere ..	10	80	90	50	960	1,010	2	1	3	890	25,500	26,440	10,680	51,100	61,780
Gutu ..	—	455	455	—	2,824	2,824	—	24	24	123	18,668	18,791	1,139	28,892	30,031
Holy Cross ..	40	260	300	116	9,553	9,669	—	1	1	100	3,010	3,110	450	6,760	7,210
Howard ..	14	727	741	120	4,863	4,983	—	—	—	10	2,431	2,441	60	9,762	9,822
Kwenda ..	—	—	—	—	—	—	—	—	—	—	275	275	—	4,881	4,881
Lower Gwelo ..	—	459	459	—	2,808	2,808	—	9	9	833	2,119	2,952	4,565	6,924	11,489
Manana ..	538	147	685	16,248	4,486	20,734	—	5	5	228	1,57	385	1,997	1,528	3,525
Masase ..	1,739	554	2,293	45,051	13,066	58,117	1	13	14	74	534	608	944	3,864	4,808
Matopo ..	55	124	179	306	868	1,174	—	—	—	120	1,589	1,709	367	8,815	9,182
Mrene ..	1,943	1,594	3,537	54,185	37,332	91,517	6	43	49	171	767	938	1,794	2,862	4,656
Morgenster ..	84	1,543	1,627	3,528	16,524	20,052	—	77	77	1,239	12,912	14,151	7,434	49,208	56,642
Mtshabesi ..	194	553	747	2,639	18,039	20,678	—	10	10	10	2,328	2,338	52	11,281	11,333
Mutambara ..	23	336	359	414	4,007	4,421	2	3	5	104	743	847	670	4,354	5,024
Nvaderi ..	211	1,753	1,964	1,279	13,831	15,110	7	30	37	51	2,957	3,008	667	11,598	12,265
Old Umtali ..	60	929	989	842	11,157	11,999	—	6	6	639	2,771	3,410	4,130	16,433	20,563
Rusitu ..	12	227	239	58	1,528	1,586	—	2	2	80	347	427	320	4,815	5,135
St. Augustine's ..	—	—	—	—	—	—	—	—	—	—	1,820	1,820	—	5,600	5,600
St. Barbara's ..	75	824	899	660	3,023	3,683	4	9	13	242	4,824	5,066	3,820	12,867	16,687
St. Faith's ..	—	25	25	—	175	175	—	—	—	5	3,255	3,260	15	5,973	5,988
St. Joseph's ..	5	61	66	65	561	626	—	—	—	264	12,780	13,044	2,369	20,827	23,136
St. Paul's ..	5	123	128	58	1,037	1,095	1	3	4	128	5,344	5,472	1,536	20,794	22,330
St. Patrick's ..	—	11	11	—	59	59	—	—	—	141	1,028	1,169	914	3,690	4,604
Silveira ..	62	1,824	1,886	1,722	7,283	9,005	1	4	5	278	6,247	6,525	649	18,128	18,777
Sohsi ..	735	580	1,315	20,580	14,624	35,204	6	3	9	694	869	1,563	3,470	1,738	5,208
Triashill ..	227	1,034	1,261	3,155	11,092	14,247	8	20	28	101	8,014	8,115	785	23,545	24,330
Wadhilove ..	—	296	296	—	2,245	2,245	—	2	2	1	4,177	4,178	10	9,907	9,917
In:wenya ..	—	—	—	—	—	—	—	—	—	2	1,300	1,302	2	3,200	3,202
Zambesi ..	—	—	—	—	—	—	—	—	—	—	714	714	—	1,965	1,965
<b>TOTAL (37)</b>	<b>6,662</b>	<b>22,995</b>	<b>29,657</b>	<b>158,596</b>	<b>237,205</b>	<b>395,801</b>	<b>45</b>	<b>350</b>	<b>395</b>	<b>7,779</b>	<b>158,620</b>	<b>166,399</b>	<b>58,693</b>	<b>466,699</b>	<b>525,362</b>

MATERNITY HOMES, 1946.

TABLE J.

Name of Home	Town	Patients re- maining 1/1/46	Admitted	Died	Patients re- maining 31/12/46	Confine- ments	Births		Deaths of Infants	Mis- carriages and Abortions	Operations		Equipped Beds
							Live	Still			Major	Minor	
Lady Chancellor	Salisbury	18	748	1	23	695	688	15	12	—	22	241	26
Lady Radwell	Bulawayo	22	512	—	19	461	453	8	5	3	14	172	25
Birchenough	Gwelo	4	120	—	4	120	119	1	2	—	—	9	9
Umtali	Umtali	5	162	—	7	147	142	5	3	2	—	12	10
Fort Victoria	Fort Victoria	—	36	1	—	27	27	—	1	—	1	7	6
Appelby	Bindura	—	35	—	—	27	27	—	—	1	3	—	3
Que Que	Que Que	—	61	—	2	55	54	1	—	10	2	10	3
Enkeldoorn	Enkeldoorn	—	10	—	—	9	7	1	1	—	—	—	5
Dunaldson	Selukwe	—	50	—	—	41	41	—	—	1	—	—	6
Sinoia	Sinoia	1	39	—	1	37	37	—	—	—	—	2	2
Total Government operated Homes (10)		50	1,773	2	56	1,619	1,595	31	24	17	42	453	95
Monica (a)	Bulawayo	1	—	—	—	—	—	—	—	—	—	—	—
Clarison	Bulawayo	5	137	—	6	137	135	2	1	—	—	—	7
Ardbennie	Salisbury	—	85	—	2	85	84	1	3	—	—	—	8
Queen Mary	Gatooma	—	93	—	6	89	90	—	—	—	—	—	8
Total privately operated Homes (3)		6	315	—	14	311	309	3	4	—	—	—	23
GRAND TOTAL (13)		56	2,088	2	70	1,930	1,904	34	28	17	42	453	118

(a) Closed down on 6th January, 1946.

TABLE K.

## FINDINGS OF MEDICAL INSPECTION, 1946.

Table 1.

	Children Born in					Total	Percent.	Group 6, 7 Re-exam. Specials	Total
	Group 1 Entrants 1939	Group 2, 1937	Group 3, 1935	Group 4, 1932	Group 5, 1930				
<b>EUROPEAN SCHOOLS—1946</b>									
(Combined Summary)									
<i>Number Examined</i> .. .. .	1,427	1,440	1,466	1,177	667	6,177	—	547	6,724
<i>Number Examined for Nutrition:</i>									
A .. .. .	203	315	498	558	386	1,960	—	—	—
B .. .. .	1,007	977	820	573	266	3,643	—	—	—
C .. .. .	206	144	140	42	15	547	—	—	—
D .. .. .	11	4	8	4	—	27	—	—	—
<i>Skin Diseases</i> .. .. .	61	57	43	36	30	227	3.67	—	—
<i>Defective Vision:</i>									
(1) Requiring treatment .. .. .	10	31	38	63	43	185	2.99	—	—
(2) For observation .. .. .	92	126	83	79	40	420	6.79	—	—
(3) Treatment obtained .. .. .	5	21	56	52	49	183	2.96	—	—
<i>Squint</i> .. .. .	7	16	14	8	1	46	.74	—	—
<i>Other Eye Conditions</i> .. .. .	19	13	20	10	7	69	1.16	—	—
<i>Defective Hearing:</i>									
(1) History of Otitis media .. .. .	5	9	9	11	5	39	.63	—	—
(2) Adenoids .. .. .	—	—	—	—	—	—	—	—	—
(3) Other Causes .. .. .	9	3	9	9	5	35	.57	—	—
<i>Active Otitis media</i> .. .. .	5	9	2	3	2	21	.34	—	—
<i>Tonsils and Adenoids:</i>									
(1) Enlarged .. .. .	133	105	84	59	19	400	6.47	—	—
(2) Removal advised .. .. .	15	7	8	8	—	38	.61	—	—
(3) Removed previously .. .. .	405	499	552	457	284	2,197	35.57	—	—
<i>Teeth</i> .. .. .	93	107	148	157	72	577	9.34	—	—
<i>Heart:</i>									
<i>Organic Disease:</i>									
(1) Rheumatic .. .. .	1	2	2	2	4	11	.18	—	—
(2) Other Causes .. .. .	2	7	3	6	3	21	.34	—	—
<i>Functional Disease:</i>									
(1) Murmurs .. .. .	9	6	6	8	4	33	.53	—	—
(2) Other Conditions .. .. .	—	1	2	4	3	10	.16	—	—
<i>Lungs:</i>									
(1) Bronchitis .. .. .	19	14	9	1	2	45	.73	—	—
(2) Asthma .. .. .	8	9	10	1	3	31	.50	—	—
<i>Postural Defects:</i>									
Spinal .. .. .	157	198	203	139	37	734	11.88	—	—
Flat feet, etc. .. .. .	113	159	238	179	54	743	12.02	—	—
<i>Deformities</i> .. .. .	16	13	12	22	17	80	1.29	—	—
<i>Enlarged Spleen</i> .. .. .	17	12	8	12	4	53	.86	—	—
<i>Nervous Disorders</i> .. .. .	27	11	12	3	1	54	.87	—	—
<i> Mentally Retarded</i> .. .. .	—	—	—	—	—	—	—	—	—
<i>Speech</i> .. .. .	7	5	8	5	4	29	.47	—	—
<i>Other Conditions</i> .. .. .	133	109	94	75	44	455	7.36	—	—

TABLE L.

## FINDINGS OF MEDICAL INSPECTION, 1946.

Table 2.

	Children Born in						Total	Percent.	Group 6, 7 Re-exam. Specials	Total
	Group 1 Entrants 1939	Group 2, 1937	Group 3, 1935	Group 4, 1932	Group 5, 1930	Total				
<b>COLOURED AND INDIAN SCHOOLS—1946</b>										
(Combined Summary)										
<i>Number Examined</i>	334	265	318	205	88	1,210	—	113	1,323	
<i>Number Examined for Nutrition;</i>										
A ..	8	17	65	63	35	188	—	—	—	
B ..	226	183	189	118	50	766	—	—	—	
C ..	83	57	57	21	3	221	—	—	—	
D ..	17	8	7	3	—	35	—	—	—	
<i>Skin Disease</i>	24	26	47	19	2	118	9.75	—	—	
<i>Defective Vision:</i>										
(1) Requiring treatment	2	4	14	5	5	30	2.48	—	—	
(2) For observation	16	22	31	12	6	87	7.19	—	—	
(3) Treatment obtained	—	—	1	4	3	8	.66	—	—	
Squint ..	1	2	3	2	1	9	.74	—	—	
Other Eye Conditions	2	5	4	—	2	13	1.07	—	—	
<i>Defective Hearing:</i>										
(1) History of Otitis media	—	2	—	2	—	4	.33	—	—	
(2) Adenoids ..	—	—	—	—	—	—	—	—	—	
(3) Other Causes	3	5	8	1	2	19	1.57	—	—	
Active Otitis media	1	1	—	—	—	2	.16	—	—	
<i>Tonsils and Adenoids;</i>										
(1) Enlarged ..	29	22	24	13	1	89	7.35	—	—	
(2) Removal advised	—	2	3	1	1	7	.58	—	—	
(3) Removed previously	9	9	16	13	4	51	4.21	—	—	
<i>Teeth</i>	43	15	29	24	9	120	9.91	—	—	
<i>Heart:</i>										
<i>Organic Disease:</i>										
(1) Rheumatic ..	1	—	—	—	1	2	.16	—	—	
(2) Other Causes	2	1	4	1	—	8	.66	—	—	
<i>Functional Disease:</i>										
(1) Murmurs ..	5	4	1	4	2	16	1.32	—	—	
(2) Other Conditions	—	1	—	—	—	1	.08	—	—	
<i>Lungs:</i>										
(1) Bronchitis ..	4	—	2	2	1	9	.74	—	—	
(2) Asthma ..	—	1	—	1	—	2	.16	—	—	
<i>Postural Defects;</i>										
Spinal ..	32	36	47	28	6	149	12.31	—	—	
Flat feet, etc.	12	12	34	22	7	87	7.19	—	—	
<i>Deformities</i>	7	3	3	3	1	17	1.40	—	—	
<i>Enlarged Spleen</i>	7	10	3	8	3	31	2.55	—	—	
<i>Nervous Disorders</i>	1	—	—	—	—	1	.08	—	—	
<i>Speech</i>	—	—	1	—	—	1	.08	—	—	
<i>Other Conditions</i>	22	8	10	6	2	48	3.97	—	—	
Pot belly ..	14	5	2	2	—	23	1.90	—	—	
	36	13	12	8	2	71	5.87	—	—	

Table 3.

TABLE M.

## TABLE OF OTHER CONDITIONS NOT INCLUDED IN PREVIOUS SECTIONS.

	Europeans	Coloured + Indians	Total
<b>1.—Alimentary System;</b>			
<i>Lips; Tongue;</i>	29	7	36
Cysts inside lips .. .. .	1		
Papilloma on tongue .. .. .	1		
Ulcerative stomatitis .. .. .	1		
<i>Abdomen;</i>			
Chronic appendicitis .. .. .	1		
Chronic colitis .. .. .	1		
Old T.B. Peritonitis .. .. .	1		
Worms—thread .. .. .	10		
tape .. .. .	2		
round .. .. .	1		
Hernia—umbilical .. .. .	2	7	
inguinal .. .. .	8		
<b>2.—Genito-Urinary System;</b>	9	1	10
Varicocele .. .. .	1		
Hydrocele .. .. .	1		
Undescended testes .. .. .	4		
Atrophy of testes .. .. .	1		
Cystitis .. .. .	2		
Albuminuria .. .. .		1	
<b>3.—Bones; Joints; Muscles;</b>	24	5	29
Fractures, limbs .. .. .	10		
Sprains .. .. .	7	1	
Congenital dislocation of the hip .. .. .	3		
Loose cartilage—knee .. .. .	1		
Ankylosis elbow—knee .. .. .	1	1	
Vertebral epiphysitis .. .. .	1		
Amputations, toe—fingers .. .. .	1	1	
T.B. knee .. .. .		1	
Dupuytren's contraction .. .. .		1	
<b>4.—Sundry Conditions;</b>	170	17	187
(Metabolic: endocrine: deficiency: infections, etc.)			
Hodgkin's Disease .. .. .	1		
Goitre .. .. .	1	3	
Obesity .. .. .	62	3	
Diabetes .. .. .	3		
Acidosis .. .. .	3		
Debility .. .. .	5		
Anaemia .. .. .	81	2	
T.B. Glands .. .. .	1		
Malaria .. .. .	2		
Bilharzia .. .. .	7	5	
Thrombosis, veins—frontal .. .. .	1		
Rheumatism .. .. .	1	1	
Still's Disease .. .. .	1		
Achondroplasia .. .. .	1		
Chronic swelling of the parotid glands .. .. .		1	
Hookworm .. .. .		1	
Congenital cyst below the chin .. .. .		1	
	232	30	262



## REPORT OF THE PUBLIC HEALTH LABORATORY, SALISBURY.

For the past few years the Salisbury Laboratory has been working to capacity. Any further increase in the volume of medical investigations submitted will necessitate further increase in establishment. As there is a limit imposed by post-war circumstances to indefinite increase, any policy which favours a lightening of the burden on the laboratory must be welcome.

Even at this comparatively early stage, therefore, it is extremely gratifying that one should be able to report on the satisfactory progress of the training of the African in essential microscopy and on the success which has attended the opening of the subsidiary laboratory in Umtali.

The annual returns from the Umtali Laboratory reach their first publication in the Government Public Health Report of this year. The details speak for themselves, and, while not needing any particular appraisal from me, deserve acknowledgment as being of very material help in reducing the volume of routine work in the central laboratory. The training of the African in essential microscopy continues in a like direction to reflect advantage out of all proportion to the time and effort spent in fitting him for his work; indeed in this particular sphere the African is already turning to very good account his native trait of inquisitiveness in anything which appears to him to have novelty. Under proper supervision the patience and the keen vision of the well-nourished healthy African are ideal characteristics for lengthy hours of microscope toil.

From the technical side of the laboratory two unusually interesting findings fall for comment. A primary round-celled sarcoma of the bladder was encountered in the histological section. The specimen was from a native case and is amongst the rarer bladder tumours. A case of Kaposi's multiple haemorrhagic sarcoma was diagnosed for the first time during this year. This is by no means a new disease. It dates back to Kaposi's first full description in 1872. The novelty is in the diagnostic problem which it presents clinically, and in the varying opinions held with regard to its nature. Many believe that it occupies an intermediate place between the inflammations and the tumours proper, and various opinions point alternately in support to its occasional regression like any other regressing sarcoma, as well as to its more genuine capacity of developing true malignant characteristics. Clinically a prodromal stage of cyanosis, oedema and slight inflammation of the skin of the legs, feet, cheeks, etc., gives way to the tumour stage of multiple soft bluish nodules, which progress centrally from the extremities and may give rise to secondaries in the internal organs. In the early tumour stage the differential diagnosis from leprosy, syphilis and mycosis fungoides arises. We do not know the incidence of this interesting condition in the African.

A beginning has been made with the introduction of two important tests on the serological side. A very limited supply of anti-Rh serum has enabled us to carry out Rhesus factor tests in a selected series and when this serum becomes more readily available this is a test which must of necessity be done on a fairly large scale. Ever since the discovery of a human hereditary Rhesus system, endowed with antigenic properties and capable of stimulating dangerous agglutinins, the wisdom of Rhesus grouping has become apparent. The application of the principles of Rhesus incompatibility in explanation of the aetiological riddle of hydrops foetalis and icterus gravis neonatorum and as a life-saving measure in the compatible transfusion of the haemolytic infant further pointed to the necessity for the test. The fact that Rhesus sensitivity may be brought about by multiple transfusion underlines the desirability of sub-grouping any donor panel into Rh-positive and Rh-negative individuals. The passage of time will no doubt demand such a division. The distinction is, interestingly enough, of greater importance to the European in whom a 15 per cent. incidence of Rhesus negativity is found than to the African, since recent reports from the Union of South Africa show that the Bantu race yields only seven Rh-negative individuals in every hundred.

The advent of dicoumarin which acts as an anti-coagulant by lowering the blood prothrombin level has dictated the necessity for the prothrombin time test. The drug is used in many types of clinical thrombosis, but owing to its haemorrhagic action must be controlled by frequent testing of patient's serum. The prothrombin time test has a further useful application as a pre-operative test in cases of jaundice and in the control of vitamin K therapy.

## BACTERIOLOGY.

	Racial Distribution	
	Europeans	Non-Europeans
<b>SPUTA—</b>		
Total examined 1,742	642	1,100
With the following findings—		
<i>M. tuberculosis</i>	195	145
<b>URINES—</b>		
Total Cultures 694	477	217
Positive findings were as follows—		
<i>B. coli</i>	163	31
Staphylococci	50	13
<i>Staph. albus</i>	2	1
Streptococci	—	1
<i>Ps. pyocyaneus</i>	2	—
<i>B. typhosum</i>	2	—
<b>FAECES—</b>		
Total Cultures 324	153	171
Positive findings were as follows—		
<i>B. dysenteriae</i> Flexner	1	—
<i>B. dysenteriae</i> Sonne	2	—
<i>B. typhosum</i>	2	1
<b>BLOOD—</b>		
Total Cultures 148	78	70
Positive findings were as follows—		
<i>B. typhosum</i>	3	2
<i>Staphylococcus albus</i>	9	22
<i>Staphylococcus aureus</i>	—	1
<i>B. faecalis alkaligenes</i>	3	6
<i>B. coli</i>	—	2
Gram positive bacilli	1	2
Yeast cells	1	1
<b>THROAT AND NASAL SWABS—</b>		
Total Cultures 1,248	846	402
Positive findings were as follows:—		
<i>C. diphtheriae</i>	47	44
<i>Staph. albus</i>	21	—
Streptococci	2	1
Haemolytic streptococci	7	—
Meningococci	—	2
<b>MOUTH SWABS—</b>		
Total examined 9	6	3
Positive findings were as follows—		
Vincent's organisms	4	2
<i>Monilia albicans</i>	—	1
<b>SMEARS—</b>		
Total examined 1,130	433	697
(a) Urethral smears totalled 446	254	192
Positive findings being as follows—		
Gonococci	40	48
<i>T. pallida</i>	1	1
<i>Trichomonas vaginalis</i>	—	2
(b) Vaginal smears totalled 386	98	288
Positive findings being as follows—		
Gonococci	5	13
<i>Trichomonas vaginalis</i>	5	2
Anaerobic streptococci	1	—
(c) Cervical smears totalled 281	71	210
Positive findings being as follows—		
Gonococci	5	13
<i>Trichomonas vaginalis</i>	7	14

	Racial Distribution	
	Europeans	Non-Europeans
(d) Conjunctival smears totalled 17	10	7
Positive findings being as follows—		
Gonococci	1	1
Staphylococci	2	—
Gram positive bacilli	—	1
<i>Haemophilus conjunctivitis</i>	—	2
LEPROTIC MATERIAL—		
Total examined 81	1	80
Positive <i>M. leprae</i>	—	20
CEREBRO-SPINAL FLUID—		
Totalled 346	80	266
Positive findings being as follows—		
Pneumococci	—	29
Meningococci	2	15
Staphylococci	—	3
<i>M. tuberculosis</i>	—	1
WATER EXAMINATIONS—		
Totalled 185.		
MILK EXAMINATIONS—		
Totalled 94.		
Methylene Blue Reductase Tests	93	
<i>B. coli</i> Tests	1	
ICE CREAM—		
Total Coliform Tests	18	
VACCINES—		
Total Autogenous Vaccines prepared	69	
PARASITOLOGY.		
BLOOD—		
A total of 3,846 smears were examined	2,087	1,759
The following positives were obtained—		
<i>P. falciparum</i>	278	177
<i>P. vivax</i>	10	1
<i>P. malariae</i>	1	1
Gametocytes	—	1
Trypanosomes	—	15
Spirochaetes of relapsing fever	—	9
Filariae	—	5
URINES—		
Examinations totalled 9,370	4,364	5,006
With the following results—		
<i>S. haematobium</i> 1,144	104	1,040
Occurrence of <i>S. haematobium</i> in general routine microscopic examinations shown under Biochemistry totalled 441	21	420
FAECES—		
A total of 12,588 were examined	5,045	7,543
(a) Protozoa—		
<i>E. histolytica</i>	9	6
<i>Giardia lamblia</i>	30	2
<i>Chilomastix mesnili</i>	2	—
(b) Helminths—		
<i>S. mansoni</i>	72	612
<i>S. haematobium</i>	2	7
Hookworm	55	1,269
<i>Enterobius vermicularis</i>	28	14
<i>Ascaris lumbricoides</i>	24	43
<i>Trichuris trichiura</i>	39	15
<i>Hymenolepis nana</i>	2	21
<i>Strongyloides stercoralis</i>	1	10
<i>Taenia</i> spp.	10	94
<i>T. saginata</i> scolex	5	1

## HAEMATOTOLOGY.

EXAMINATIONS—	Racial Distribution	
	Europeans	Non-Europeans
Totalled 8,962	7,188	1,774
Blood cytology	14	—
Total red cell counts	1,552	429
Total white cell counts	1,897	561
Differential white cell counts	2,878	615
Haemoglobin estimations	495	15
Eosinophile counts	13	—
Retyculoocyte counts	3	—
Platelet counts	19	46
Coagulation time	19	5
Bleeding time	15	5
Blood sedimentation rates	283	86
Sickle cell trait	—	7
Prothrombin time	—	5

## SEROLOGY.

## WASSERMANN EXAMINATIONS—

Totalled 16,516	1,712	14,804
Positive reactions totalled 2,101	115	1,986
Negative reactions totalled 14,415	1,597	12,818

## AGGLUTINATION REACTIONS—

Totalled 2,103	987	1,116
<i>B. Typhosum</i> and <i>B. paratyphosum</i> (Widal reactions) total 811	232	579
<i>Br. abortus</i>	170	70
<i>Br. melitensis</i>	11	1
Weil-Felix	20	12
Blood groupings	224	447
Compatibility tests	328	2
Paul Bunnel tests	2	5

## BIOCHEMISTRY.

## BLOOD—

Total examined 681	377	304
Glucose Tolerance Test	64	2
Blood Sugar	142	44
Blood Urea	117	138
Blood N.P.N.	1	—
Van den Bergh reaction	15	8
Icterus Index	18	10
Serum Calcium	7	5
Serum Phosphorus	—	1
Serum Chloride	1	—
Serum Protein	1	26
Blood Cholesterol	4	—
Erythrocyte Fragility Test	3	—
Spectroscopic examinations	—	3
Blood Uric Acid	4	7
Formol Gel Test	—	60

## STOMACH CONTENT—

Fractional Test Meal Tests totalled 206	199	7
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## FAECES—

Total examined 113.		
Occult Blood	93	19
Gmelin's test for bile	1	—

## URINES—

Total examined 11,749	5,123	6,626
Routine chemical examinations	2,221	3,217
Routine microscopic examinations	2,863	3,397
Diastatic Index	3	2
Spectroscopic examinations	9	1

	Racial Distribution	
	Europeans	Non-Europeans
Urea clearance	1	4
Blood	1	—
Uric Acid crystals	1	—
Bence Jones Proteose	—	1
Sugar identification	1	—
Glucose quantitative estimation	1	—
Biliuria	16	3
Urobilin	5	—
Acetone	1	—
Tanret reaction	—	1
<b>CEREBRO-SPINAL FLUID—</b>		
Examinations totalled 305	116	189

## MISCELLANEOUS.

## BIOLOGICAL TESTS—

Totalled 257	206	51
Biological tests for <i>M. tuberculosis</i>	24	24
Friedmann tests	182	27

## BASAL METABOLIC RATE ESTIMATIONS—

Total number done during the year 54.

## FUNGAL EXAMINATIONS—

Totalled 30	27	3
Positive findings were as follows—		
<i>Microsporon audouini</i>	5	—

## SKIN TESTS—

These totalled 104	101	3
Inhalants	92	3
Ingestants	9	—

## OTHER EXAMINATIONS—

Totalled 382	162	220
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These included—

Abdominal, pleural, seminal and synovial fluids, bone marrow and bone tissue, pus and splenic pulp.

Tinned foods—Milk, fish, etc., for aerobic and anaerobic culture.

Penicillin for potency.

## POST-MORTEM EXAMINATIONS—

Totalled 682.

## HISTOLOGY.

## TISSUES—

Total examined 1,508	577	931
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A list of the more important conditions encountered follows. The frequency with which each condition occurred is denoted by a number which follows the name of the pathological lesion and the letter "E" or "A" following the number indicates racial distribution as being "European" or "Non-European" respectively.

## TUMOURS—

## I. Simple—

Osteoma, 1 E; Chondroma, 1 A; Odontoma, 1 E, 1 A; Lipoma, 1 A; Fibro-myoma, 12 E, 4 A; Fibro-adenoma, 2 E, 1 A; Papilloma, 4 E, 3 A; Condyloma, 1 A; Melanoma, 1 E; Polyp, 5 E; Neuro-fibromatosis, 1 A	26	13
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2. Malignant—		
(a) Primary Sarcoma—		
Round celled, 1 E, 3 A; Spindle celled, 1 E, 3 A; Fibro-, 1 A; Osteo-, 2 A; Lympho-, 1 E; Melanotic, 1 E, 4 A; Kaposis multiple haemorrhagic, 1 A — — — — —	4	14
(b) Primary Carcinoma—		
(i) Squamous, 5 E, 13 A (including Cervix 3 E; Larynx, 1 A; and Oesophagus 1 A).		
(ii) Adeno-, 3 E, 13 A (including stomach 1 A; large intestine, 1 E, 2 A; and rectum, 1 E, 1 A).		
(iii) Mucoid: Caecum, 1 A; rectum, 1 E.		
(iv) Scirrhous: Breast, 4 A.		
(v) Medullary: Breast, 3 E.		
(vi) Spheroidal: Bladder, 1 A.		
(vii) Melanotic, 1 E, 2 A. — — — — —	22	26
3. Miscellaneous—		
Retinoblastoma, 1 A; Malignant papilloma of bladder, 3 E, 2 A; mixed parotid tumour, 1 A; Carcinoma of thyroid, 1 A — — — —	3	5
CYSTS—		
Retention cysts, 2 E, 3 A; Distension cysts (ovarian), 3 A; Parasitic cysts (cysticercosis), 2 A — — — — —	5	5
INFLAMMATIONS—		
1. Acute—		
Abscess, 2 E; Appendicitis, 28 E, 5 A; Mastitis, 1 E; Endometritis, 3 E, 1 A; Salpingitis, 1 E; Pneumonia, 1 E, 10 A; Typhoid ulceration, 2 A; Meningitis, 1 E, 5 A; Endocarditis, 5 A — — — — —	37	28
2. Sub-acute—		
Bacterial endocarditis, 1 A — — — — —	—	1
3. Chronic—		
Abscess (amoebic of liver), 1 A; Appendicitis, 6 E; Mastitis, 13E, 4A; Salpingitis, 2 E, 4 A; Endocarditis, 2 A; Glomerulonephritis, 4A; Cholecystitis, 8 E — — — —	29	15
4. Granulomata—		
Lymphadenoma, 1 A; Leprosy, 1 E, 1 A; Syphilis, 6 A — — — — —	1	8
5. Tuberculosis and Pneumoconiosis—		
Cases submitted in connection with the Miners' Phthisis Scheme totalled 91 — — — — —	6	85
The following findings were recorded—		
Silicosis — — — — —	4	14
Tuberculosis — — — — —	—	12
Silicosis with tuberculosis — — — — —	1	39
Asbestosis with tuberculosis — — — — —	—	1
Bilharzia ova were noted in the lung sections of 7 of the above African cases.		
In addition to the above, tuberculosis lesions were also encountered as follows—		
Pulmonary, miliary 5 A, caseous 3 A; Splenic, miliary 3A, caseous 1 A; Hepatic, miliary 7 A; Lymphatic, caseous 5 A, fibro-caseous 2 A; Pericardial, 5 A; Peritoneal, 1 A; Meningeal, 1 A — — — — —	—	33

Racial Distribution  
Non-  
Europeans Europeans

## SCHISTOSOMIASIS—

Tissue digestions for bilharzia ova totalled 451 ..... 86 365

## Positive findings were as follows—

Appendix .....	6	4
Bladder .....	—	40
Rectum .....	—	27
Lung .....	—	19
Liver .....	—	24
Prostate .....	—	2
Intestine .....	—	6

Histological sections revealed bilharzia ova in the following situations—

Appendix .....	6	4
Bladder .....	—	4
Lung .....	—	8
Liver .....	—	11
Kidney .....	—	1
Fallopian tube .....	—	1
Vulva .....	—	1
Broad ligament .....	—	1
Cervix .....	—	1

## THYROID ENLARGEMENTS—

Diffuse Goitre with involution .....	—	1
Diffuse Goitre with hyperplasia .....	6	3
Nodular Goitre .....	—	1

## MISCELLANEOUS—

Endocrine endometrical changes .....	101	16
Conception products .....	3	—
Endometriosis .....	2	—
Ectopic gestion .....	1	1
Hydronephrosis .....	1	1
Mesenteric thrombosis .....	—	2
Liver of Kwashiorkor .....	—	13
Hepatic cirrhosis .....	—	13
Acute hepatic yellow atrophy .....	—	2
Cerebral malaria .....	—	2

TOTAL European examinations: 31,501.

TOTAL Non-European examinations: 44,043.

GRAND TOTAL of examinations for the year 1946 were 75,544.

## UMTALI LABORATORY.

## BACTERIOLOGY.

Racial Distribution  
Non-  
Europeans Europeans

## SPUTA—

Total examined 162 ..... 41 121

## Positive findings—

<i>M. tuberculosis</i> .....	4	16
------------------------------	---	----

## URINES—

Total cultures 71 ..... 71 —

Positive findings ..... 3 —

## FAECES—

Total cultures 41 ..... 41 —

## BLOOD—

Total cultures 6 ..... 6 —

## THROAT SWABS—

Total cultures 279 ..... 279 —

## Positive findings—

<i>C. diphtheriae</i> .....	40	—
-----------------------------	----	---

	Racial Distribution	
	Europeans	Non-Europeans
<b>SMEARS—</b>		
Total examined 459	45	414
Positive findings—		
Gonococci	4	115
<b>CEREBRO-SPINAL FLUID—</b>		
Total examined 39	33	6
Positive findings—		
Pneumococci	4	—
Meningococci	2	—
<b>LEPROTIC MATERIAL—</b>		
Totalled 2.		

#### PARASITOLOGY.

<b>BLOOD—</b>		
A total of 1,708 smears were examined	608	1,100
The following positives were obtained—		
<i>P. falciparum</i>	125	315
<b>URINES—</b>		
Total microscopic examinations 3,628	629	2,999
Positive findings were—		
<i>S. haematobium</i>	5	564
<b>FAECES—</b>		
Total microscopic examinations 3,225	449	2,776
Positive findings obtained	25	500

#### HAEMATOTOLOGY.

Examinations totalled 408.

Complete blood counts	91	—
Red cell counts	52	—
White cell counts	89	—
Differential white cell counts	173	—
Bleeding time	2	—
Coagulation time	1	—

#### SEROLOGY.

##### AGGLUTINATION REACTIONS—

Totalled 157.

Widal reactions	127	—
Blood groupings and compatibility	30	—

#### BIOCHEMISTRY.

Total biochemical examinations 51.

<b>BLOOD—</b>		
Van den Bergh reactions	4	—
<b>STOMACH CONTENTS—</b>		
Fractional test meals totalled 38	38	—
<b>FAECES—</b>		
Occult blood	9	—

#### MISCELLANEOUS.

Examinations totalled 22 and included examinations of Aspirated fluids, Pus and Skin Scrapings.

TOTAL European examinations: 2,842.

TOTAL Non-European examinations: 7,416.

GRAND TOTAL of examinations for the year 1946 was 10,258.

B. P. BERNEY, M.B., M.R.C.P.I., D.P.H.,

*Acting Director.*



REPORT OF THE PUBLIC HEALTH LABORATORY, BULAWAYO.  
BACTERIOLOGY.

	European	Native
SPUTUM	544	1,294
Positive—		
<i>Myco. tuberculosis</i>	68	233
URINE	1,367	16
Positive—		
<i>Bact. coli</i>	477	10
Streptococci	32	—
<i>Bact. typhosum</i>	6	—
<i>Bact. faecalis alkaligenes</i>	3	—
FAECES	616	53
Positive—		
<i>Bact. typhosum</i>	14	2
<i>Bact. faecalis alkaligenes</i>	6	—
<i>Bact. dysenteriae</i> Flexner	11	1
<i>Bact. dysenteriae</i> Shiga	—	1
BLOOD	112	54
Positive—		
<i>Bact. typhosum</i>	1	1
<i>Bact. faecalis alkaligenes</i>	2	—
<i>B. pyocyaneus</i>	1	1
Haemolytic streptococci	1	—
NOSE AND THROAT SWABS	1,938	234
Positive—		
<i>C. diphtheriae</i>	122	8
Vincent's organisms	10	—
Haemolytic streptococci	13	2
SKIN SNIPS	—	17
Positive—		
<i>Myco. leprae</i>	—	2
URETHRAL SMEARS	340	121
Positive—		
<i>N. gonorrhoeae</i>	44	—
DARK FIELD EXAMINATIONS	7	—
Positive—		
<i>S. pallida</i>	4	—
CONJUNCTIVAL SMEARS	64	27
Positive—		
<i>Staph. aureus</i>	1	—
Koch-Week's infection	1	—
CEREBRO-SPINAL FLUID	43	27
Positive—		
<i>N. Meningitidis</i>	3	1
Pneumococci	1	—

## PARASITOLOGY.

BLOOD	959	230
Positive—		
<i>P. falciparum</i>	85	9
<i>P. vivax</i>	28	—
<i>P. malariae</i>	1	—
URINE	4,526	4,374
Positive—		
<i>S. haematobium</i>	130	576

	European	Native
FAECES	2,337	2,057
Positive—		
<i>S. mansoni</i>	16	44
<i>E. histolytica</i>	20	7
Hookworm	17	131
<i>Taenia</i> spp.	9	8
<i>A. lumbricoides</i>	1	4
<i>T. trichiura</i>	6	—

## HAEMATOLOGY.

Total examinations	2,676	444
Red blood cell counts	1,669	156
White blood cell counts	1,693	303
Differential white cell counts	2,055	280
Haemoglobin estimations	1,623	171
Blood sedimentation rate	158	37
Blood groups	121	27
Clotting time	23	—
Bleeding time	14	—
Reticulocyte count	7	—
Platelet count	4	—

## SEROLOGY.

WASSERMANN REACTION	68	934
Positive reactions	13	374
KAHN REACTION	941	11,908
Doubtful positive	41	855
Positive	124	4,323
AGGLUTINATION REACTIONS	647	283
Positive Widal	96	9
Vi antigen	9	—
Weil-Felix	6	—
<i>B. abortus</i>	1	—
<i>B. melitensis</i>	1	—
Paul Bunnell Test	1	—

## BIOCHEMISTRY.

BLOOD	280	51
For sugar	69	—
Sugar tolerance	34	—
Urea	105	50
N.P.N.	45	—
Calcium	3	—
Cholesterol	9	1
Van den Bergh	10	—
Icterus index	4	—
Chlorides	1	—
URINE—		
Routine examinations	3,817	4,250
FAECES	17	2
Occult Blood	3	—
CEREBRO-SPINAL FLUID	188	124
FRACTIONAL TEST MEALS	79	—

## HISTOLOGY.

Total specimens examined	280	355
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## MISCELLANEOUS.

Sterility and sperm tests	26	—
Pleural fluid, liver abscesses, joint exudates, etc.	54	50
Autogenous vaccines	44	—

	European	Native
Bacteriological examination of water .....	490	
Sterility of dressings .....	54	
Sterility of solutions .....	40	
Methylene Blue Reductase Tests .....	1,035	
Medico-legal tests .....	34	
<b>TOTAL SPECIMENS examined .....</b>	<b>23,795</b>	<b>26,883</b>
<p>A small clinical laboratory at Gwelo Hospital is staffed by a female laboratory technician assisted by native microscopists, and they examined a total of 11,096 specimens. These have not been classed on a racial basis.</p>		
<b>URINE—</b>		
Chemical examination .....	2,362	
Microscopic examination .....	3,990	
Positive—		
<i>S. haematobium</i> .....	611	
<b>FAECES—</b>		
Examinations .....	2,568	
Positive—		
<i>S. mansoni</i> .....	46	
<i>E. histolytica</i> .....	56	
<i>Hymenolepis nana</i> .....	12	
<i>Oxyuris vermicularis</i> .....	56	
<i>Taenia</i> spp. ....	38	
<i>Giardia lamblia</i> .....	3	
Hookworm .....	37	
<i>S. stercoralis</i> .....	33	
Cytological evidence of dysentery .....	218	
<b>BLOOD—</b>		
Cytology .....	371	
Serology .....	1,670	
Parasites .....	327	
<i>P. falciparum</i> .....	18	
<i>P. vivax</i> .....	2	
<b>URETHRAL SMEARS .....</b>		
	78	
Positive—		
<i>N. gonorrhoeae</i> .....	17	
<b>LEPROSY SMEARS .....</b>		
	22	
Positive—		
<i>Myc. leprae</i> .....	8	
<b>FRACTIONAL TEST MEALS .....</b>		
	23	
<b>SPUTA .....</b>		
	1,050	
Positive—		
<i>Myc. tuberculosis</i> .....	160	
<b>THROAT SWABS .....</b>		
	205	
Positive—		
<i>C. diphtheriae</i> .....	27	
<b>CEREBRO-SPINAL FLUID .....</b>		
	30	
Positive—		
<i>N. meningitidis</i> .....	2	
Pneumococci .....	1	

M. H. WEBSTER, M.B., D.P.H.,

*Acting Director.*

## ANNUAL REPORT OF THE GOVERNMENT ANALYST, 1946.

## NUMERICAL SUMMARY AND ANALYSIS OF WORK DONE.

TOTAL NUMBER OF SAMPLES AND EXHIBITS DEALT WITH: 2,158.

They comprised:—

*Exhibits in Connection with Criminal Investigation—*

Exhibits for presence of poisons — — — — —	399
Exhibits for presence of blood stains — — — — —	149
Exhibits for presence of seminal stains — — — — —	64
Miscellaneous forensic exhibits — — — — —	55

667

*Samples of Water—*

General analysis of private well, borehole, mineshaft and spring supplies for hygiene and utility purposes — — — — —	37
General analysis of town supplies — — — — —	28
General analysis of supplies to Government establishments, schools, hospitals, police and farmers	17
General analysis for purification control and treatment of river waters for community supplies	7
Special study of township supply purification and removal of manganese — — — — —	6
Special study of supplies from rivers, mineshafts, wells and waterholes suspected of being injuriously contaminated — — — — —	13
Special study of purity of supplies for industrial use	8
Special study of mineral and hot spring waters —	2
Analysis of pool waters inhibiting breeding of mosquitoes — — — — —	4
Swimming bath water control — — — — —	8

130

*Cows' Milk—*

Official samples for analysis for conformity to standards — — — — —	134
Routine samples taken for control analysis and general information — — — — —	18
Samples for Phosphatase Test for pasteurization control — — — — —	96

248

*Samples of Dairy Produce—*

Cheese, cream and ice cream — — — — —	18
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*Customs Control—*

Excise samples of spirits — — — — —	14
Miscellaneous substances for tariff classification —	8

22

*Skokiaan Samples—*

General native fermented liquors — — — — —	736
Native Distilled Spirits and Illicit Intoxicants — — — — —	44
Kaffir Beer Samples from Location Beer Halls — — — — —	2

*Clinical—*

Human milk specimens — — — — —	10
Various specimens from Public Health Laboratories	104

114

*Drugs Examined for Medical Store — — — — —*

15

*Mealie Meal Samples — — — — —*

36

*Foodstuff Samples—*

Imported tinned foods examined for condition — —	25
Foods, confectionery and fruit cordials examined for conformity to standards for preservatives and adulterants — — — — —	20
Locally produced foodstuffs examined for quality and advice on methods of manufacture — — — —	22

67

<i>Control of Moisture Content of Oxygen Supplies for High Flying</i> .....	12
<i>Miscellaneous Samples</i> .....	47
<b>TOTAL</b> .....	<b>2,158</b>

The total number of samples dealt with—2,158—showed a 10 per cent. increase over the corresponding figure for 1945.

#### CRIMINAL INVESTIGATIONS.

Once again the *Criminal Investigations* represent the major portion of the work performed, and the sample numbers under this heading show a big increase over those for last year. It must be remembered that in addition to the 667 samples listed in this section the *Skokiaan Samples* and *Illicit Liquor* samples are in actual fact also exhibits in connection with criminal proceedings.

There were 399 samples submitted for toxicological examination, in connection with 93 cases.

Once again arsenic, due no doubt to the comparative ease with which it can be procured by natives, takes first place on the list of poisons, and was the substance used by the accused persons in 60 per cent. of the cases which gave positive results. The criminally-minded native does not yet appear to appreciate the fact that arsenic is one of the most stable and easily detected of any of the known poisons.

In other cases cyanide, strychnine, antimony, sulphuric acid, paraffin oil and native plant poisons were found.

The ordinary vegetable marrow was once again shown to be capable of developing within itself, as a result of cross-pollination with a wild species, a deadly poisonous substance which, but for the fortunate fact that it is intensely bitter, would undoubtedly be responsible for not a few fatalities.

The 149 exhibits submitted for analysis for *Bloodstains* were in connection with 34 cases, in 24 of which bloodstains were found. Seventy-one exhibits gave positive reactions for human blood and in three instances where blood grouping of dried stains was requested results of decisive evidential value were obtained. The murder of a European woman and the attempted murder of another constituted two of the 34 cases mentioned above.

Sixty-four exhibits for *Seminal Stains* were submitted in connection with 37 cases, 16 of which positive results were obtained. Two of these were "Black Peril" cases.

The *Miscellaneous Forensic Samples* covered a wide and interesting range. Space permits mention of only a few.

An interesting ballistics study of rifles, bullets and cartridge cases furnished evidence of value in connection with the murder by shooting of a European. Exhibits of hair, skin scrapings, glass, mud, paint and clothing were examined in connection with a "hit and run" motor car accident and our affidavit report was a decisive factor in convicting the accused and securing sentence of a heavy fine and suspension of driving licence. In two other similar cases our results were of great assistance to the Police.

A mass of charred paper which was claimed to be a bundle of burnt banknotes was proved to be nothing of the sort.

Our association with the Police and the Criminal Investigation Department continues to be close and harmonious and we receive from time to time appreciative reports indicating the bearing of our analytical findings on the final disposals of cases.

In all we issued during the year approximately 800 affidavit reports in connection with toxicology, stains work, miscellaneous forensic cases, illicit liquor control and milk control, and these affidavits were presented in evidence to the Lower and Higher Courts throughout the Colony and in Northern Rhodesia.

Not once was any member of the staff called upon to appear to give verbal evidence in support of these findings, an indication of the reliance placed on this written evidence and an acknowledgment of the straightforward manner in which it is presented.

#### WATERS.

*Water Analysis* continues to be a very important feature of the services rendered by this Laboratory. Only 40 per cent. of the waters analysed were

"Government" samples, the rest were submitted by private individuals, industrial concerns, mines, municipalities, etc., etc.

Numbers of householders outside the municipal areas come to us with their problems of water supply and purification, and in connection with the Irrigation Department, to whom persons are referred for advice concerning the lay-out of simple filter and purification systems, we are able to help the majority of them to ensure a water supply as pure and safe as that offered in the larger towns.

Industrialists and Municipalities, who often have special water problems which can only be solved by accurate analysis, are making increased use of our services.

Water supplies in the larger towns of the Colony are in general conscientiously controlled, but unfortunately this is not always the case in the smaller settlements, and members of the public cannot be too careful in the precautions they take. One hotel on one of the main roads of the Colony was found supplying water direct from the river—turbid and grossly polluted—through the taps to the residents. The water was not boiled and received no purification treatment whatsoever.

It would be a step in the right direction if hotels and municipalities were compelled by law to maintain certain purity standards in respect of the water they supply, as they are supposed to do with milk.

#### MILK.

It is to be regretted that there has been a big drop in the numbers of milks analysed as compared with 1945. The actual numbers—248—represent less than half the total received in 1945.

The beneficial effects of Colony-wide sampling and control are shown by the fact that only 2 per cent. of the milks sampled for chemical analysis were found to be watered. Five samples were deficient in fat.

A couple of prosecutions were successful, but there is a disheartening tendency to give the offender a "second chance" or to drop the prosecution on a technicality to safeguard the reputation of the dairy concerned.

In the smaller towns the milks were generally of good quality and the incidence of adulteration was very small. In one township especially some exceptionally rich milk was being supplied.

Eighteen samples of dairy produce (cheese, cream, ice cream) were all found to comply with standards.

#### CUSTOMS WORK.

This included control of spirituous liquors and assistance with correct tariff assessment for a number of imported articles.

#### ILLCIT NATIVE LIQUORS.

There was a very big increase in the number of samples of *Illicit Native Liquors* analysed and over 600 affidavits were furnished in this connection during the year.

Quite apart from Skokiaan, natives were found in possession of "Kachasu," brandy, rectified spirits and methylated spirits.

The Skokiaan menace begins to assume alarming proportions and in spite of the most vigilant Police control the natives continue to brew it in ever-increasing quantities. Four out of every five samples analysed during the year were over strength, and classed as intoxicating liquors—many of them seriously so.

#### CLINICAL WORK.

The *Clinical Work* shows an appreciable increase this year.

We co-operate with the Public Health Laboratories in particular types of diagnostic work and also assist the Medical Stores by occasional check assays on drugs.

Samples from all tenderers for Government Contracts for the supply of *Mealie Meal* were analysed during the year.

It is regrettable that more "check" samples are not taken once the contracts have been allocated, so as to discourage adulteration of meal with offals from other millings.

Sixty-seven samples of *Foodstuffs* (other than those already mentioned) were examined during the year. These included imported tinned foods which appeared "blown" or otherwise suspicious, bread, flour, honey, sweets and fruit

cordials for preservatives and adulterants, and a number of locally prepared or manufactured foodstuffs for comment and advice.

When new food and drugs legislation is introduced it is to be hoped that this aspect of the work of the Laboratory will assume more importance and that samples for control purposes will be taken all over the Colony.

Only twelve samples of *Oxygen* were analysed for moisture content in connection with high-flying for meteorological surveys, etc. This work has fallen off since the war.

#### MISCELLANEOUS.

The *Miscellaneous Samples* are liable to include almost anything and everything. They invariably lend interest to the work and not infrequently our chemical findings are of very great importance to those who seek our help.

This year, to mention a few, we analysed a spray solution used in printing and thought by some to be detrimental to health, a plant root advocated as a food for new-born infants, anthracite coal for Government contract, soil samples for arsenic, a cement used in transformer bushings, iodized salt prepared locally, engine oils thought to be causing corrosion in aircraft, trade waste effluents, anaesthetic chloroform, an unknown powder used in water treatment, maize thought to be contaminated with cattle dip, water samples for lead, and many others too numerous to mention.

#### STAFF AND GENERAL.

Once again the number of samples analysed constitutes a new record, and yet for six months of the year there were only three officers on the staff instead of the normal complement of four, even though no leave was taken. Mr. Rivett left us in May and is now at St. John's College, Cambridge, doing research work.

To fill his place Mr. D. R. Mann, M.Sc., was appointed at the end of July and has proved an invaluable addition to the staff. On 23rd September Mr. A. W. Facer retired from the position of Government Analyst after 20 years of service in which he saw the branch grow, through his own efforts, from its inauguration in 1927 to the secure position which it has made for itself to-day. His name will always be linked with this Laboratory as its founder and guiding spirit through its most difficult years, and the reputation which it enjoys to-day is due in very great measure to his untiring efforts to ensure the utmost accuracy and reliability in all work undertaken.

W. H. KITTO, M.Sc., F.R.I.C.,

*Government Analyst.*

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## CORRIGENDA: 1945 REPORT.

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#### TABLE A of Appendix: Leprosy.

No. on register 31.12.45 at Mnene should read "16" not "17."

#### TABLE B of Appendix: Native Clinics.

In-patient Units, V.D. Other, and Total for Total NDANGA Unit should read:

152,524            340,568    and    493,092

and the grand totals of the same columns:

608,283            938,109    and    1,546,392

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## NATIVE HEALTH AND MORTALITY.

## A.—NATIVES ON MINES : COMPARATIVE STATEMENT OF MORTALITY, 1932-36.

	Twelve months ended November.				
	1932	1933	1934	1935	1936
Average number employed —	35,466	47,080	61,101	75,173	83,417
<i>Disease—</i>					
Number of deaths .....	341	438	573	851	828
Death rate per mille per annum .....	9.61	9.30	9.38	11.32	9.93
<i>Accidents—</i>					
Number of deaths .....	89	103	140	194	180
Death rate per mille per annum .....	2.51	2.19	2.29	2.58	2.16
<i>All Causes—</i>					
Number of deaths .....	430	541	713	1,045	1,008
Death rate per mille per annum .....	12.12	11.49	11.67	13.90	12.09

## B.—NATIVES ON MINES : RATES OF DEATHS FROM DISEASE.

Death rate per 1,000 employed.	Twelve months ended November.				
	1932	1933	1934	1935	1936
Pneumonia .....	4.88	4.16	4.21	5.41	5.05
Other Diseases .....	4.73	5.14	5.17	5.91	4.88
Total Disease Death Rate	9.61	9.30	9.38	11.32	9.93

## C.—NATIVES ON MINES : SICKNESS, DEATHS AND DEATH RATES, 1936.

Disease.	Twelve months ended November.		
	Number of Cases.	Number of Deaths.	Death rate per mille per annum.
Malaria .....	6,686	37	0.44
Scurvy .....	617	10	0.12
Syphilis .....	1,041	26	0.31
Pneumonia .....	1,770	421	5.05
Phthisis (Consumption) .....	51	44	0.53
Other Diseases of Chest .....	1,358	25	0.30
Dysentery and Diarrhoea .....	811	22	0.26
Other Intestinal Diseases .....	214	36	0.43
Heart Disease .....	59	43	0.52
Debility .....	175	13	0.16
Influenza .....	6,268	27	0.32
Other Diseases .....	2,103	124	1.49
Minor Ailments .....	19,933	—	—
	41,086	828	9.93
<i>Accidents and Injuries—</i>			
Major .....	475	180	2.16
Minor .....	10,487	—	—
Total (All Cases) —	52,048	1,008	12.09





## STAFFING, BEDS AND PATIENTS AT GOVERNMENT GENERAL HOSPITALS, 1936.

Name of hospital.	Staff nursing.		No. of beds.		No. of cases treated.			Daily average of patients treated.			No. of units patients maintained.			Average No. of days each patient was in hospital.	
	E.	N.	European.	Coloured and native.	European.	Coloured and native.	Total.	European.	Coloured and native.	Total.	European.	Coloured and native.	Total.	European.	Coloured and native.
Salisbury ...	85	10	120	125	2,962	2,436	5,398	102.20	110.50	212.70	37,294	40,342	77,636	12.60	16.56
Bulawayo ...	79	39	129	153	2,221	3,631	5,852	96.70	194.50	291.20	35,297	71,003	106,300	15.90	19.50
Umtali ...	12	9	39	48	719	902	1,621	19.81	38.65	58.46	7,229	14,106	21,335	10.00	15.60
Gwelo ...	11	10	22	60	437	1,107	1,544	13.83	64.25	78.08	5,048	23,451	28,499	11.55	21.18
Gatooma ...	10	11	29	100	632	1,267	1,899	14.98	91.50	106.48	5,484	33,401	38,885	8.52	26.36
Fort Victoria ...	5	7	24	33	203	503	706	5.75	26.00	31.75	2,100	9,461	11,561	10.30	18.81
Gwanda ...	5	5	9	48	114	969	1,083	2.94	92.67	95.61	1,073	33,827	34,900	9.40	34.90
Enkeldoorn ...	4	9	12	38	194	951	1,145	4.18	36.58	40.76	1,526	13,353	14,879	7.86	14.00
Shamva ...	3	8	13	36	75	478	553	1.41	29.10	30.50	517	10,636	11,153	6.89	22.25
Sinoia ...	4	8	14	30	231	620	851	4.33	33.66	37.99	1,582	12,286	13,868	6.85	19.80
Ingutsheni ...	18	28	116	330	156	454	610	95.00	281.50	376.50	34,620	102,752	137,372	222.00	226.30
Totals	236	144	527	1,001	7,944	13,318	21,275	361.13	998.91	1,360.03	131,770	364,618	496,388	9.90*	20.9*

\* Does not include Ingutsheni Mental Hospital.

## RETURN OF FREE PATIENTS IN HOSPITALS, 1936.

Name of hospital.	Number of free patients maintained.			No. of free patients units.		
	European.	Coloured and native.	Total.	European.	Coloured and native.	Total.
Salisbury ...	764	1,757	2,521	13,396	32,110	45,506
Bulawayo ...	486	3,063	3,549	11,072	58,710	69,782
Umtali ...	117	647	764	1,985	10,239	12,224
Gwelo ...	83	644	727	1,417	14,125	15,542
Gatooma ...	62	585	647	967	19,819	20,786
Fort Victoria ...	83	360	443	650	8,005	8,655
Gwanda ...	10	248	258	168	8,309	8,477
Enkeldoorn ...	67	871	938	1,071	12,778	13,849
Shamva ...	15	438	453	80	6,404	6,484
Sinoia ...	32	312	344	348	6,959	7,307
Ingutsheni ...	65	245	310	24,951	91,449	116,400
Totals	1,784	9,170	10,954	56,105	268,907	325,012

Table showing number of Inpatients and Outpatients treated at Medical Missions, together with number of Units maintained, Deaths and Treatments, both Venereal Diseases and General, during the year 1936.

Mission.	Admissions.				Inpatient Units.				Deaths.				Outpatients.				Treatments.	
	V.D.		Other.		V.D.		Other.		V.D.		Other.		V.D.		Other.		V.D.	Other.
	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.	Total.
Chikore Mission	3	157	160	68	1,307	1,375	6	6	9	1,022	1,031	61	2,400	2,461				
Chimanza Mission	—	1	1	—	5	5	1	1	—	700	700	—	777	777				
Empandeni Mission	—	199	199	—	1,289	1,289	3	3	—	1,320	1,320	—	2,652	2,652				
Epworth Mission	—	—	—	—	—	—	—	—	—	1,036	1,036	—	2,145	2,145				
Fairfield Girls' School	1	234	235	16	981	997	1	1	—	1,380	1,380	—	4,535	4,535				
D.R.C. Mission, Gutu	84	68	152	1,250	1,661	2,911	1	9	10	395	2,020	2,874	3,153	6,027				
Mnene Mission	683	566	1,249	24,994	16,403	41,397	4	24	28	101	389	745	2,922	3,667				
Mt. Selinda Mission	138	720	858	2,525	13,018	15,543	1	17	18	84	1,605	888	4,377	5,265				
D.R.C. Mission, Morgenster	—	430	430	—	5,918	5,918	—	22	22	556	4,176	4,732	No Record	—				
Monte Cassino Mission	1	70	71	14	550	564	6	6	6	460	460	—	1,380	1,380				
Mase Mission	657	250	907	21,564	2,958	24,522	2	15	17	112	310	710	2,657	3,367				
Mtshabezi Mission	99	305	404	1,034	1,942	2,976	1	1	2	289	596	542	8,284	8,826				
Mutambara Mission	—	560	560	—	8,998	8,998	—	19	19	80	80	108	13,331	13,439				
Nyadiri Mission	9	1,721	1,730	90	9,096	9,186	—	20	20	10	5,162	50	18,996	19,046				
Old Umtali Mission	327	672	999	3,270	6,133	9,403	4	6	10	—	3,482	—	15,096	15,096				
St. Patrick's Mission	—	11	11	—	124	124	—	1	1	129	1,136	702	3,846	4,548				
St. Benedict's Mission	—	16	16	—	75	75	—	2	2	—	138	—	1,274	1,274				
Lower Gwelo Mission	—	334	334	—	2,270	2,270	—	8	8	310	4,296	489	4,952	5,441				
Waddilove Mission	—	200	200	—	1,584	1,584	—	7	7	—	1,297	—	5,624	5,624				
Zambesi Industrial Mission	—	—	—	—	—	—	—	—	—	14	1,084	29	1,191	1,220				
Semokwe Mission	—	—	—	—	—	—	—	—	—	—	—	—	4,765	4,765				
Triashill Mission	8	228	236	42	2,731	2,773	—	12	12	—	1,540	—	4,123	4,123				
Driefontein Mission	—	12	12	—	122	122	—	3	3	—	1,728	—	8,122	8,122				
Howard Training Institute	—	69	69	—	1,140	1,140	—	7	7	—	2,879	—	6,197	6,197				
St. Mary's Mission	—	5	5	—	100	100	—	1	1	400	2,500	1,800	2,500	4,300				
Solusi Mission	—	—	—	—	—	—	—	—	—	259	991	1,813	3,252	5,065				
<b>Total</b>	<b>2,010</b>	<b>6,828</b>	<b>8,838</b>	<b>54,867</b>	<b>78,405</b>	<b>133,272</b>	<b>13</b>	<b>191</b>	<b>204</b>	<b>2,748</b>	<b>40,852</b>	<b>10,811</b>	<b>128,551</b>	<b>139,822</b>				

N.B.—Semokwe Mission give treatment only.  
Mutambara Mission do not give No. of Outpatients.