

## **Report on the public health / Southern Rhodesia.**

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*COLONY OF SOUTHERN RHODESIA.*

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REPORT

ON

The Public Health

*FOR THE YEAR 1923.*

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Presented to the Legislative Assembly,  
1924.

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Salisbury, Rhodesia:

Printed by the Government Printer.

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## COLONY OF SOUTHERN RHODESIA.

Report on the Public Health for the Year 1923.

Presented to the Legislative Assembly,  
1924.

### PART I.

#### CHAPTER I.—ADMINISTRATION.

The Public Health and Hospitals Department is in the Division and under the control of the Minister holding the portfolio of Colonial Secretary.

*Staff.*—The head office staff consists of the Medical Director, Dr. A. M. Fleming, C.M.G., M.B., C.M., F.R.C.S., Edin., D.P.H., Camb., who is the permanent head, assisted by the Assistant Medical Director, Dr. W. M. Eaton, M.B., C.M., D.P.H., who is stationed at Bulawayo.

Chief Clerk.—B. F. Wright.

Clerks.—C. S. Honey, J. Lacey, Miss M. Irvine, Miss N. Noble, Miss W. Lee and Miss H. Quinn.

#### *Public Health Laboratory.*

Bacteriologist.—L. J. J. Orpen, M.A., M.B., Bac.Surg., D.P.H., Oxford.

Laboratory Assistant.—Miss E. M. Truter.

Junior Laboratory Assistant.—W. L. Titman.

#### *District Medical Officers.*

Senior Government Medical Officers.—

Gatooma.—A. J. MacKenzie, M.B., Bac.Surg., Edin.

Gwelo.—F. P. Maitland, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glasg.

Salisbury.—F. H. Ellis, M.C., M.R.C.S., Eng., L.R.C.P., Lond.

Bulawayo.—A. W. Forrester, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glasg., D.P.H., R.C.P.S., Ire.

Umtali.—O. E. Jackson, M.B., Bac.Surg., Ire., M.D., Q.U., Belfast.

Government Medical Officers.—

Melsetter.—W. G. Rose, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glasg.

Mazoe.—D. J. O'Keeffe, M.D., Bac.Surg., Ire.

Inyati.—Major J. E. Martin, M.B., C.M., Edin., L.R.C.S., L.R.C.P., Edin., L.F.P.S., Glasg.

Sinoia.—W. M. Hewetson, M.B., Bac.Surg., Edin., D.P.H.

Assistant Government Medical Officers.—

Plumtree.—S. R. Haworth, M.D., Bac.Surg., Ire.

Ndanga.—T. J. Williams, M.R.C.S., Eng., L.R.C.P., Lond.

Selukwe.—T. Donaldson, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glasg.

Arcturus.—C. J. Lyons, L.L.M., K.Q.C.P., Ire., L.R.C.S., F.R.C.S., R.C.S., Ire.

Rusape.—V. C. W. Vickers, M.R.C.S., Eng., L.R.C.P., Lond.

Filabusi.—P. Wallice, M.R.C.S., Eng., L.R.C.P., Lond.

Bindura.—E. P. Carmody, M.R.C.S., Eng., L.R.C.P., Lond.

Fort Victoria.—P. H. Henson, M.B., B.Surg., Lond.

Shamva.—G. Barratt, M.R.C.S., Eng., L.R.C.P., Lond., M.B., Bac.Surg., Lond.

Gwanda.—M. H. K. Kane, M.B., Bac.Surg., Lond.

Enkeldoorn.—H. C. Titterton, M.R.C.S., Eng., L.A.H., Dublin.

Marandellas.—T. D. McLaren, M.B., Bac.Surg., Edin.

Relieving Government Medical Officer.—

Salisbury.—H. J. Plowright, M.R.C.S., Eng., L.R.C.P., Lond.

Aided Government Medical Officer.—

Que Que.—J. Davey, M.R.C.S., Eng., L.R.C.P., Lond.

Inspectors of Compounds.—H. C. Thwaites, E. L. King-Hall and A. G. Yardley.

#### *Hospitals and Asylums.*

Secretaries and Dispensers.—S. B. Gray, T. A. Miles, F. G. Dixon, W. Procter, A. H. Brunell-Stevens and Mrs. A. M. Groves.

Nursing Staff.—

Senior Matron.—Miss L. A. Adlam.

Matrons.—Miss A. Newcombe, R.R.C., Miss B. Smith, Miss L. A. Hunt, Miss F. Stockdale, Miss J. H. Daly (Asst.), Miss G. Walker (Acting), Miss G. Fuller (Acting).

In addition there are:—

Nurse matrons ... ..	7
Qualified nurses ... ..	36
Probationers ... ..	23
District nurses ... ..	1

Assistant Superintendent, Ingutsheni Mental Hospital.—J. McLean.

Assistant Superintendent, Morgenster Leper Settlement.—A. C. Jackson.

Supplementary Auxiliary Staffs.—

Part time hospital secretaries ... ..	6
Part time secretaries to hospital advisory committees ... ..	2
Hospital orderlies ... ..	2
Needle women ... ..	2
Male attendants, Mental Hospital ... ..	7
Female attendant, Mental Hospital ... ..	1
Total European staff ... ..	140

The miscellaneous coloured and native staffs attached to the various institutions are as follows:—Indian cooks, 4; Indian laundrymen, 4; ward maids, 3; and natives, 165.

Total coloured staff ... ..	179
Total staff ... ..	319

During the year vacation leave of absence was granted to four medical officers, one lady clerk, one compound inspector and one laboratory assistant.



Dr. H. K. Smyth, Senior Government Medical Officer, Umtali, was granted leave pending retirement on pension.

Dr. O. E. Jackson, Government Medical Officer, Shamva, was transferred to Umtali, on promotion to the rank of Senior Government Medical Officer.

Colonel C. M. Goodbody, C.I.E., D.S.O., Assistant Government Medical Officer, Marandellas, was granted leave pending resignation.

Two new medical officers were appointed during the year.

District medical officers, in addition to their Government duties, are allowed private practice within their districts.

There are now fifty-eight medical practitioners registered and practising their profession in the Colony, the distribution being as follows:—In Salisbury 12, Bulawayo 14, Gwelo 2, Shabani 2, Gatooma 2, Umtali 2, Mount Selinda 2, Shamva 2, and one each at the following places:—Lonely, Bindura, Selukwe, Que Que, Sinoia, Plumtree, Penhalonga, Fort Victoria, Wankie, Inyati, Mashaba, Marandellas, Umvuma, Mazoe, Melssetter, Rusape, Ndanga, Enterprise, Gwanda and Enkeldoorn.

The compound inspection staff consists of three inspectors, whose duties embrace the control of the health and sanitary conditions under which natives are employed on mines, railways and other works within their respective circuits.

Seventy applications for appointments to the Southern Rhodesia nursing service were received from qualified nurses; eight were engaged, of whom two received their training at the Salisbury Hospital; both daughters of settlers in Rhodesia and born in the Colony.

Nine nurses resigned during the year; six in order to be married, two on account of ill-health, and one in order to take up a more remunerative appointment.

Seventy-seven applications were received for appointments as probationers; six were engaged, of whom five were residents of the Colony.

Five probationers left during the year on expiration of their probationership; all of these successfully passed the Cape Colonial Council's examination for trained nurses, one first and one second place in this examination being obtained.

With the exception of Bulawayo and Rusape, all general hospitals are wholly maintained and administered by the Government.

In the case of Bulawayo and Rusape, these are Memorial Hospitals, partly erected and maintained by public subscription, with the assistance of substantial grants-in-aid from the Government.

General hospitals are established at Salisbury, Bulawayo, Umtali, Gwelo, Gatooma, Fort Victoria, Gwanda, Sinoia, Shamva, Rusape, Enkeldoorn and Belingwe, each with its own medical, nursing and auxiliary staff, and with separate accommodation for European and native patients.

There is a mental hospital for Europeans and natives at Ingutsheni on the outskirts of Bulawayo; and a settlement for native lepers at Morgenster, some twenty miles from Fort Victoria.

*Financial.*—The following figures show the expenditure under the Public Health and Hospital Votes, under the respective headings, for the year 1923, each compared with 1922:—

	1923. £	1922. £
Public Health (Expenditure).		
Staff, salaries ... ..	26,059	26,184
Travelling expenses, Medical Director and staff, Government Medical Officers, Bacteriologist, Compound Inspectors and rail and port charges ... ..	3,694	3,832
Treatment, maintenance and transport of luna- tics, lepers and sick paupers, repression of infectious and contagious diseases, upkeep of lazarettos, purchase of vaccine lymph and quinine ... ..	7,241	8,843
Public Health Laboratory and Other Charges.		
Expenditure ... ..	329	395
Administration of Foods and Drugs Ordinance	256	261
	<u>£37,579</u>	<u>£39,515</u>

	1923. £	1922. £
Public Health (Revenue).		
Bacteriological fees ... ..	199	259
Sales of quinine ... ..	2,219	1,303
	<u>£2,418</u>	<u>£1,562</u>

	1923. £	1922. £
Hospitals, Native Dispensaries and Asylums (Expenditure).		
Salaries ... ..	16,350	15,835
Travelling expenses on appointment, duty or leave, rail and port charges ... ..	855	1,308
Provisions and medical comforts ... ..	6,302	5,510
Fuel, light and water ... ..	2,856	2,694
Furniture, equipment, repairs and clothing ...	3,704	3,797
Drugs, disinfectants and surgical appliances ...	3,683	3,715
Laundry ... ..	1,040	605
Sanitary fees ... ..	482	348
Produce, etc. ... ..	8,101	9,207
Miscellaneous ... ..	514	554
Grants-in-aid to hostels, hospitals and district nursing ... ..	5,636	5,845
	<u>£49,523</u>	<u>£49,418</u>

	1923. £	1922. £
Hospitals, Native Dispensaries and Asylums (Revenue).		
Fees collected from paying patients ... ..	15,055	13,812

The gross expenditure on Government hospitals, including Ingutsheni Mental Hospital, in 1923 amounted to £43,229, as compared with £42,878 in 1922, showing an increase of £351 on the previous year.

The revenue collected amounted to £15,055, as compared with £13,812 collected in 1922, showing an increase of £1,243.

The gross earnings from paying patients amounted to £16,603, as against £15,883 for the previous year, showing an increase of £719. In



addition to the earnings from paying patients, the loss of revenue represented by the treatment of paupers, police, gaol officials and others who were entitled to free medical attendance in Government hospitals, and for the cost of whom no inter-departmental charges are made, amounted to £8,521, and if Ingutsheni Mental Hospital is included, this figure is increased to £16,905, as compared with £16,141 for the previous year.

Complete statistics regarding the number of beds, daily average of patients treated, the revenue and expenditure, the average cost per patient per diem, the number of free patients, the number of units treated, the cost to hospital votes of treatment and maintenance, worked out on gross expenditure basis, and the loss of revenue represented thereby at the various institutions, will be found in tables in the Appendix.

## CHAPTER II.—WORK OF THE DEPARTMENT.

(1) *Public Health Laboratory*.—(a) Routine.—The Pasteur Institute for the preparation of anti-rabic virus and the treatment of patients suffering from hydrophobia has been kept going, though no patients from this Colony have undergone treatment since 1913. Four patients, however, all from Northern Rhodesia, were treated.

A new method for the preparation and distribution of virus has now been adopted which allows of its being sent out for the treatment of patients at a distance. Though there have been no cases of rabies in the Colony now for ten years, the continuation of this branch of the laboratory is an insurance for the country, and falls within the general routine of the work, and so far the small additional expenditure involved is more than met by recoveries to revenue for treatment given and sales of virus.

There has been a marked increase in the routine work of the laboratory, and it has been found necessary to appoint a junior laboratory assistant, who is engaged in the capacity of an apprentice.

(b) Research.—Dr. J. G. Thomson, of the London Tropical School of Medicine, returned early in the year to continue his researches into the cause of blackwater fever, and a report of the results he had attained to date was published and presented to the Legislative Assembly in October last.

Further research was continued into the relations between Malta fever and contagious abortion in cattle, and the agglutination methods of diagnosis.

The gross earnings of the Public Health Laboratory amounted to £726 15s. 3d., as compared with £807 15s. 6d. in 1922.

(2) *Mines and Works*.—(a) Inspections.—The compound inspection staff formerly consisted of seven officials, but has now been reduced to three, their headquarters being at Salisbury, Bulawayo and Gwelo respectively.

The areas covered embrace the mines in the following districts:—

Salisbury Circuit.—Salisbury, Shamva, Darwin, Makaha, Lomagundi, Umtali, Penhalonga, Gatooma and Hartley.

Bulawayo Circuit.—Bulawayo, Gwanda, Shabani, Wankie and Filabusi.

Gwelo Circuit.—Gwelo, Que Que, Selukwe, Fort Victoria, Mashaba and Umvuma.



Compound inspectors, in addition to their duties under the health and sanitation regulations framed under the Mines and Minerals Ordinance, have certain duties assigned to them under the Native Labour Regulations, and assist in the collection of hut tax from alien labour employed on mines, and recently the inspection of railway compounds has been added. They are constantly employed touring their districts, and render monthly reports to the head office.

The mileage travelled to visit the various mines in their circuits is only given approximately, as these distances vary as new mines open up and others cease work; the estimated total mileage in the various circuits being as follows:—Salisbury circuit, 2,325 miles; Bulawayo circuit, 1,850 miles; and Gwelo circuit, 1,410 miles.

The number of properties visited each month and mileage travelled are as follows:—

Total No. of mines visited.	Average No. of mines visited monthly.	Average monthly mileage by car.	Average monthly mileage by rail.
929	77	1,920	395

The reports of the compound inspectors indicate that the conditions under which natives labour on mines continue satisfactory. Generally speaking, there has been little difficulty in getting mine owners to carry out the regulations. The complaints reported, mostly referring to the non-payment of native wages and prosecutions which it was found necessary to take, for the greater part came under this head, as will be seen from the following:—

Prosecutions.	Number.	No. of cases in which convictions obtained.	Acquittals.	Settled out of Court or after warning.	Awaiting judgment.
Prosecutions under Mines and Works Regulations ...	3	2	1	...	...
Prosecutions under Native Labour Regulations ...	3	3	...	...	...
Complaints for non-payment of wages ...	29	3	...	23	3

Difficulty continues to be encountered at certain seasons of the year in giving effect to the diet regulations, especially in regard to the supply of fresh vegetables, monkey nuts and beans. The position in regard to the former has been eased somewhat where vegetables are unprocurable or difficult to obtain by permitting citrus fruits being rationed in place, and wherever procurable the mines have readily complied with this requirement, and a not inconsiderable market has thus been found for this commodity in the various districts. Certain mines, however, complained of the lack of attention paid by suppliers in the larger centres to the packing and despatch of consignments, which frequently resulted in the fruit arriving at the mine in an unusable condition. This is a matter for regret, as in certain instances it has





The following table shows the number of cases of sickness, number of deaths, death rate per cent., sickness incidence per thousand per annum, and death rate per thousand per annum, amongst natives employed on mines in Southern Rhodesia for the year 1923:—

Number employed, 37,482.

Name of disease.	Total sick.	Total deaths.	Case mortality per centum.	Sickness incidence rate per mille per annum employed.	Death rate per mille per annum employed.
Malaria ... ..	5,070	36	.71	135.26	.96
Scurvy ... ..	89	7	7.87	2.37	.19
Syphilis ... ..	222	6	2.65	5.92	.16
Pneumonia ... ..	1,450	224	15.45	38.69	5.98
Phthisis ... ..	86	35	40.70	2.29	.93
Other Diseases of the Chest	2,422	20	.83	64.62	.53
Dysentery ... ..	165	7	4.24	4.40	.19
Diarrhoea ... ..	235	2	.85	6.27	.05
Other Intestinal Diseases ...	536	23	4.29	14.30	.62
Heart Disease ... ..	51	17	33.33	1.36	.45
Debility ... ..	254	5	1.97	6.78	.13
Influenza ... ..	1,341	29	2.16	35.77	.77
Other Diseases, ... ..	3,768	93	2.47	100.53	2.48
Minor Ailments ... ..	7,511	...	...	200.37	...
Accidents ... ..	217	105	48.39	5.79	2.80
Totals. ... ..	23,417	609	2.60	624.75	16.25

The following table gives the mortality and causes of death amongst the various groups of natives employed on mines during 1923:—



# SOUTHERN RHODESIA.

## MORTALITY ON MINES.

*Annual Territorial Summary showing Mortality amongst Natives for year ended 31st December, 1923.*

Territorial classification.		D E A T H S.														Death rate per mille per annum.						
Territories.	Average employed.	Malaria.	Scurvy.	Syphilis.	Pneumonia.	Phthisis.	Other diseases of the chest.	Dysentery.	Diarrhoea.	Other intestinal diseases.	Heart disease.	Debility.	Influenza.	Other diseases.	Accidents.	Totals.	Disease.		Accident.		All causes.	
																	1923.	1922.	1923.	1922.	1923.	1922.
Southern Rhodesia	...	6	1	3	40	4	3	1	1	3	2	1	6	15	28	114	7.97	8.68	2.60	1.39	10.56	10.08
Portuguese East Africa	...	4	...	...	12	8	3	3	...	2	4	2	1	12	13	64	12.36	18.07	3.15	2.58	15.51	20.65
Northern Rhodesia	...	9	2	2	63	7	4	1	1	6	4	1	16	31	21	168	15.90	18.63	2.27	2.06	18.17	20.69
Nyasaland	...	17	4	1	108	14	10	2	...	11	7	1	6	34	40	255	16.20	26.32	3.01	3.13	19.21	29.45
Other sources	...	...	...	...	1	2	...	...	...	1	...	...	...	1	3	8	10.08	12.92	6.05	3.69	16.13	16.61
Totals	...	36	7	6	224	35	20	7	2	23	17	5	29	93	105	609	13.29	18.77	2.77	2.37	16.05	21.14

NOTE.—The figure 37,936 is the average of the actual number of natives employed on the last day of the month, and not the daily average.

*Comparative Statement of Mortality amongst Natives Employed on  
Mines in Southern Rhodesia, January to December, 1923.*

Month.	Average No. of natives employed.	No. of deaths from disease.	Death rate per 1,000 per ensem from disease.	No. of deaths from accident.	Death rate per 1,000 per ensem from accident.	Total No. of deaths.	Death rate per 1,000 per ensem from all causes.
January ...	34,526	38	1.10	4	.12	42	1.22
February ...	35,308	37	1.05	5	.14	42	1.19
March ...	34,373	42	1.22	11	.32	53	1.54
April ...	34,509	32	.93	9	.26	41	1.19
May ...	34,848	32	.92	12	.34	44	1.26
June ...	35,365	34	.96	7	.20	41	1.16
July ...	36,616	36	.98	14	.38	50	1.37
August ...	38,040	33	.87	16	.42	49	1.29
September...	38,774	53	1.37	3	.08	56	1.44
October ...	38,188	73	1.91	8	.21	81	2.12
November ...	37,352	60	1.61	10	.27	70	1.87
December ...	36,885	34	.92	6	.16	40	1.08

**Totals and Averages.**

Year.			Per annum.		Per annum.		Per annum.
1923 ...	37,482	504	13.44	105	2.80	609	16.25
1922 ...	35,718	681	19.07	86	2.40	767	21.47
1921 ...	37,605	689	18.30	94	2.50	783	20.82
1920 ...	37,669	599	15.90	75	1.99	674	17.90
1919 ...	30,296	507	16.73	90	2.97	597	19.71
1918 ...	32,766	3,629	110.76	88	2.69	3,717	113.44
1917 ...	38,861	700	18.01	149	3.83	849	21.85
1916 ...	40,420	911	22.48	172	4.24	1,083	26.73
1915 ...	37,928	832	21.94	159	4.19	991	26.13
1914 ...	36,100	897	24.85	135	3.74	1,032	28.59
1913 ...	33,543	783	23.49	158	4.71	946	28.20
1912 ...	34,494	1,073	31.11	163	4.73	1,236	35.83
1911 ...	37,909	1,085	28.62	164	4.33	1,249	32.95
1910 ...	37,826	1,682	44.74	182	4.81	1,864	49.28



The total number of natives employed was 37,482 in 1923, as compared with 35,718 in 1922, an increase of 1,764.

They were distributed as follows:—

	1922.	1923.
Mashonaland ... ..	14,877	15,493
Matabeleland ... ..	20,841	21,989
Salisbury ... ..	6,793	7,115
Hartley ... ..	6,527	6,792
Gwelo ... ..	7,367	8,530
Bulawayo ... ..	11,026	10,928
Victoria ... ..	2,448	2,531
Umtali ... ..	1,557	1,586
Totals ... ..	35,718	37,482

The tribal classification being—

Southern Rhodesia ... ..	9,329	10,792
Northern Rhodesia ... ..	8,748	9,247
Portuguese East Africa ...	4,261	4,126
Nyasaland ... ..	13,409	13,275
Other sources ... ..	542	496
Totals ... ..	36,289	37,936

The district figures represent the daily average, while the territorial figures represent the average of the actual number on the mines on the last day of the month.

The death rate per mille per annum employed during each quarter was:—

	1922.		1923.	
	Disease.	All causes.	Disease.	All causes.
First quarter ... ..	1.10	1.25	1.04	1.23
Second quarter ... ..	1.07	1.28	.88	1.12
Third quarter ... ..	1.96	2.16	1.03	1.32
Fourth quarter ... ..	2.09	2.33	1.46	1.66

The health of European miners does not call for comment; it is included in the general returns. There were 1,531 Europeans employed on mines and eight deaths (six from sickness and two from accidents) in 1923, as compared with 1,322 employed and seven deaths (six from sickness and one from accident) in 1922.

Amongst native mine employees it is pleasing to report that the death rate per thousand from disease was 13.44, and from all causes 16.25—this constituting the lowest death rate on record. The general death rate has been reduced from 60.85 per thousand in 1907 to 16.25 in 1923, which speaks well for the present system of compound inspection.

Of the 609 deaths which occurred amongst native mine employees, 224 were due to pneumonia and 105 to accident, as compared with 311 and 86 respectively during 1922.

The pneumonia sickness incidence is still high, but more favourable than in the previous year, being 38.69 per thousand per annum employed, as compared with 42.07 in 1922.

The pneumonia death rate per thousand per annum employed, as compared with the general death rate, was:—

	1922.	1923.
Pneumonia ... ..	8.71	5.98
All causes ... ..	21.47	16.25

On a few mines natives are systematically inoculated with Lister's 8-strain anti-pneumococcal vaccine before being allowed to commence work, but in spite of this deaths have occurred, and in certain instances it has been found on investigation that a large proportion of the deaths occurred among recent arrivals. This may indicate that a fault lies in the direction of employing natives physically unfit for mining work, and on some mines it is now a definite rule that all natives employed by the mine or by a contractor must be medically examined and passed as fit by the mine medical officer before engagement. This cannot but be a step in the right direction, and will in all probability lead to a further improvement in the sickness and mortality rates among this class of worker.

Statistics regarding the health and mortality of natives employed in railway compounds are not available, but in this regard no facts have been brought to my notice which would show the position to be anything but favourable.

(3) *Propaganda and Educational*.—The following pamphlets were issued by the Department during the year and widely distributed:—

"Quinine Prophylaxis in Malaria."

By A. M. Fleming, C.M.G., M.B., C.M., F.R.C.S.E., D.P.H.,  
Medical Director.

"The Life Cycle of the Malarial Parasite in Man and in the Mosquito, with some Observations on Malaria in Southern Rhodesia."

By Dr. J. G. Thomson, M.B., Ch.B., Lecturer on Protozoology  
at the London School of Tropical Medicine.

In addition, the following scientific papers on matters of interest were published by members of the staff:—

"Preliminary Report on the Result of Investigations into the Causation of Blackwater Fever in Southern Rhodesia."

By Dr. J. G. Thomson, M.B., Ch.B., Lecturer on Protozoology  
at the London School of Tropical Medicine.

"A Method of Blood Cultures in Undulant (Malta) Fever and Other Diseases."

By Dr. L. J. J. Orpen.

Published in the *South African Medical Record* (July, 1923).

"The Connection between Undulant (Malta) Fever and Contagious Abortion."

By Dr. L. J. J. Orpen.

Being published in England in Proceedings of the Royal Society of Tropical Medicine and Hygiene.

"A Note on the Connection between Contagious Abortion and Undulant (Malta) Fever in Rhodesia."

By Dr. L. J. J. Orpen.

Published in the *South African Medical Record* (Feb., 1924).

"Blondes in Rhodesia."

By Dr. W. M. Hewetson.

Published in the *Rhodesia Independent* (Aug., 1923).

Dr. G. Barratt, one of the relieving Government medical officers, was despatched on an educative tour of the more malarial parts of the country during the fever season, and an abridged copy of his report is attached for general information. This was in the nature of an experimental tour, and the value of these tours, both to the settler concerned and to the Government from information so obtained, is so



evident that it is hoped that it will be found possible both to continue and extend them in the future.

In addition to the above, the usual routine inspections of district hospitals and other institutions, including Police camps, gaols, etc., have been carried out by the Medical Director and staff during the year.

(4) *Legislation bearing on matters concerning Public Health.*—

(a) Public Health Act.—A draft of a new Public Health Act was prepared for presentation to the last session of the Legislative Council, but it was decided to postpone it in view of the approaching change of Government; it has now been revised, and will be presented to the first session of the Legislative Assembly of the new Government.

The new Act, *inter alia*, specifies the duties of local authorities as regards the health of the areas under their control, and defines the relative liabilities of the State and local authorities as regards the provision of hospitals for infectious diseases, the control of hospitalisation of venereal cases, and the responsibility for the care and maintenance of cases of infectious diseases coming within the area of a local authority from other districts, these being subjects of considerable controversy in the past.

Extended powers are provided for the control of venereal diseases, for the framing of regulations dealing with the control of malaria in urban and rural areas, and for the prevention and suppression of epidemics, no authority being at present in existence to allow of these important measures being enforced by law.

(b) Southern Rhodesia Opium and Habit Forming Drugs Regulation Proclamation.—The High Commissioner's Proclamation No. 42 of 1923 was published in the *Government Gazette* on the 21st September, 1923. In this Proclamation provision is embodied to restrict and regulate the import into Southern Rhodesia and the production and use therein of opium and other habit forming drugs, and the export of such drugs from the Colony.

The administration and control of the Habit Forming Drugs Regulations and the issuing of import and export certificates are vested in the Medical Director of the Colony. No difficulties have arisen in the carrying out of the "import certificate" system, and permits were granted during the year to import the following habit forming drugs:—

Morphine sulphate ... ..	grains	462
Heroin hydrochloride ... ..	"	1,243
Morphine ... ..	"	41,400
Cocaine hydrochloride ... ..	"	10,681
Morphine hydrochloride ... ..	"	3,944
Cocaine ... ..	"	200

The import certificates granted were in all but one instance issued to chemists in business—the exception being a medical missionary in charge of a large mission hospital.

Only one export certificate was granted during the year.

Some difficulty has been experienced in the purchase of opium and other habit forming drugs by farmers and stock owners for the treatment of their stock, and amendments in this direction are at present under consideration.

(c) Sale of Foods and Drugs Amendment Ordinance.—This amending Ordinance provides for the fixing of standards for milk, butter,



cheese and other derivatives of milk, and rectifies certain omissions in the parent Act which were revealed by recent judicial decisions.

During the discussion which took place at the fourth session of the Legislative Council, held in May, 1923, regarding the fixing of the standard of milk, an undertaking was given that the standard would only be fixed after carrying out a series of tests and after consultation with dairymen and others concerned. These tests were still being carried out, and were uncompleted at the end of the year.

During the year the following analyses were undertaken on behalf of the Government by the part-time analysts at Salisbury and Bulawayo respectively :—

Analyses under Foods and Drugs Ordinance.		Medico-legal analyses.	
Salisbury.—Water analyses ... ..	2	Stomach analyses ...	3
Salisbury.—Milk analysis ... ..	1	Arsenic tests ...	17
Salisbury.—Blood examination ...	1	Strychnine tests ...	3
Bulawayo.—Various ... ..	30	Various ... ..	6

No samples of drugs or foodstuffs were examined, and in the absence of a whole-time Government analytical appointment it is difficult to give the attention it deserves to this side of the administration of the Foods and Drugs Ordinance. It is hoped that a whole-time analytical chemist will shortly be appointed to the staff of this Department, when these matters will be given closer attention.

(d) Native Registration Ordinance, 1901, Amendment Ordinance, 1918.—The regulations under the above Ordinance have now been applicable to the municipal area of Salisbury for about a year and a half, and have been found to work satisfactorily. It has now been decided by the Bulawayo Municipality to apply the terms of these regulations to the area under their control, and it is probable that other municipalities will follow suit in the near future.

### CHAPTER III.—VITAL STATISTICS.

*Population.*—The estimated European population to the middle of 1923 was 36,208.

*Births.*—There were 937 births, 493 males and 444 females, giving a birth rate of 25.88 per thousand, as compared with 26.09 per thousand in 1922.

There were 15 cases of plural births registered, all twins. These were all Europeans.

In addition to the above, 109 coloured births were registered, classified as follows :—

Indian ... ..	61
Coloured ... ..	48

There were also 29 still births and 36 illegitimate births registered, the illegitimate births being classified as follows :—

European ... ..	14
Indian ... ..	5
Coloured ... ..	17

The illegitimate birth rate was 1.49 per cent.

*Deaths.*—Three hundred and sixty-three deaths were registered, as compared with 313 in 1923, giving a crude death rate of 10.02 per



thousand; and if this is corrected to the age and sex distribution of the population of England and Wales, a corrected death rate is given of 11.21 per thousand.

In Table 16 in the Appendix will be found a return of the causes of death, a study of which shows that the increase in the death rate in 1923 over 1922 can be ascribed to the increased number of deaths last year from malaria and blackwater fever, 85 deaths from these two causes being recorded, as against 36 in 1922. Further reference to this seasonal variation in climatic diseases will be made in a subsequent chapter.

Year.	No. of deaths under one year of age.	Number of births.	Infantile death rate per 1,000 births.
1923	70	937	74.71
1922	54	909	59.41
1921	57	913	62.43
1920	57	815	69.94
1919	63	756	83.33
1918	75	789	95.06
1917	48	855	56.14
1916	51	815	62.58
1915	60	784	76.53
1914	56	753	74.37

The above table shows the mortality rates under one year of age amongst every 1,000 infants born for the last ten years.

The following table shows the causes of infantile mortality in the last three years:—

*Causes of Death in Children under One Year of Age.*

Diseases.	1921.	1922.	1923.
Malaria ... ..	5	...	11
Blackwater ... ..	...	1	1
Whooping cough ... ..	...	1	1
Diphtheria and croup ... ..	1	...	...
Influenza ... ..	3	1	6
Dysentery ... ..	...	1	2
Erysipelas ... ..	1	...	...
Other general disease ... ..	...	1	...
Simple meningitis ... ..	3	2	...
Epilepsy ... ..	1	...	...
Convulsions of infants ... ..	3	5	6
Diseases of the larynx ... ..	2	...	1
Acute bronchitis ... ..	2	1	3
Broncho-pneumonia ... ..	4	3	...
Pneumonia ... ..	3	5	6
Diarrhoea and enteritis ... ..	4	4	7
Other accidents of labour ... ..	1	...	...
Hernia, intestinal obstruction ... ..	...	1	1
Acute abscess ... ..	...	1	...
Congenital malformations ... ..	1	1	2
Other diseases of the skin and annexa ... ..	...	...	1
Congenital debility, icterus and sclerema ... ..	16	20	20
Other causes peculiar to early infancy ... ..	1	3	1
Cause of death not specified or ill-defined ... ..	6	3	2
Totals ... ..	57	54	70

From the above table it will be seen that the increased number of deaths in infants under one year of age during 1923 was due chiefly to malaria and influenza. There were eleven deaths from malaria, as compared with none in 1922. Whilst other countries are showing a slow but steady reduction in the mortality rates at this period of life, the figures in Southern Rhodesia show an extraordinary fluctuation which approximates to the variations in the malarial incidence. Young children are the most easily protected section of the community from this disease, and it is surely deplorable that this wastage of child life from so preventable a cause should still continue.

#### CHAPTER IV.—PUBLIC HEALTH.

##### (a) *Infectious, Communicable and Preventable Diseases.*

*Notifications.*—The following table gives a summary of the notifications of infectious and communicable diseases as issued in the departmental weekly bulletin.

*Table showing Infectious Diseases Reported to the Public Health Department during the Year 1923.*

Diseases.	District.	Number of cases.		Number of deaths	
		European.	Native.	Euro-pean.	Native.
Small-pox ...	Chibi ...	...	15	...	2
	Plumtree district	...	1	...	...
	Fort Victoria ...	...	Unknown	...	...
Influenza ...	Bindura ...	6	Numerous	...	...
	Melsetter ...	Numerous	"	...	...
	Mrewa ...	2	...	...	...
	Shamva ...	Several	Numerous	...	...
	Sinoia ...	3	60	...	...
	Umvuma ...	...	12	...	...
Influenzal pneumonia	Mashaba (King's Mine)	...	227	...	5
	Shabani ...	2	160	...	8
Enteric ...	Blinkwater	1	...	...	...
	Gatooma ...	4	...	...	...
	Gwelo ...	...	2	...	...
	Filabusi ...	1	...	...	...
	Macheke ...	1	...	...	...
	Marandellas ...	1	...	...	...
	Melsetter ...	1	...	...	...
	Mtoko ...	1	...	...	...
	Salisbury ...	1	...	...	...
	Shamva ...	1	...	...	...
	Umtali... ..	1	...	...	...
	Umvuma ...	2	...	...	...
Scarlet fever ...	Umvuma ...	2	...	...	...
Measles ...	Gatooma ...	9	...	...	...
	Salisbury ...	1	...	...	...
	Sinoia ...	2	...	...	...
German measles	Gatooma ...	1	...	...	...
Scarlatina ..	Salisbury ...	1	...	...	...
	Sinoia ...	1	...	...	...
Chicken-pox ...	Belingwe ...	2	...	...	...
	Bindura ...	1	1	...	...
	Bulawayo ...	26	...	...	...
	Gatooma ...	5	18	...	...
	Gwelo ...	...	3	...	...



Diseases.	District.	Number of cases.		Number of deaths	
		European.	Native.	European.	Native.
Whooping cough	Macheke ...	1	...	...	...
	Nyson School ...	1	...	...	...
	Salisbury ...	4	2	...	...
	Shamva ...	1	1	...	...
	Umtali ...	5	...	...	...
	Umvuma ...	4	9	...	...
	Que Que ...	...	Several	...	...
	Gwelo ...	Numerous cases reported, actual number unknown.	...	...	...
	Salisbury ...	There are a number of cases amongst children, actual number unknown.	1	...	...
	Selukwe ...	2	4	...	...
Diphtheria ... Mumps ...	Umtali ...	39	...	...	...
	Old Umtali ...	2	...	...	...
	Salisbury ...	3	...	...	...
	Bulawayo ...	56	...	...	...
	Gatooma ...	1	...	...	...
	Gwelo ...	30	...	...	...
	Marandellas ...	1	...	...	...
	Plumtree ...	4	...	...	...
	Somabula ...	6	...	...	...
	Umvuma ...	Several	...	...	...
Ringworm ...	Salisbury (Avondale) ...	1	...	...	...
Puerperal septicæmia	Que Que ...	1	...	1	...
Cerebro-spinal meningitis	Salisbury ...	...	2	...	1
	Shabani Mine ...	...	1	...	...
	Sinoia ...	...	1	...	...
Erysipelas ...	Umvuma ...	...	2	...	...
	Mazoe ...	1	...	...	...

*Malaria.*—There was a marked increase in the incidence of malaria in 1923. The character of the wet season, with late rains extending well into April and May, was followed by an increase in the mosquito population, and as this was followed by an exceptionally mild winter, they were not killed out, and in consequence cases of malaria and black-water continued to occur right through the year.

Malaria is not a notifiable disease; in fact, it would be quite impossible to establish any machinery which would allow of this and be of any practical value, and the only means we have at our disposal, apart from the register of deaths, for following anything like accurately the rise and fall is the annual admissions to hospitals on this account.

The following table shows the admissions to all hospitals on account of malaria for the last three years, and the incidence rate per thousand compared with the estimated population:—

Year.	No. of European admissions to hospital on account of malaria.	Incidence rate per 1,000 per annum of the estimated European population.
1921 ... ..	821	24.12
1922 ... ..	500	14.35
1923 ... ..	953	26.32

Malaria continues to seriously handicap the farmer and settler in many parts of the Colony, and there is no lack of suggestions for combating this annual outbreak of sickness and consequent economic loss to the community. Unfortunately, it is difficult amongst them to find any that are capable of practical application. Legal enactments enforcing mosquito control, and the segregation of the population from mosquitoes, could only be applied with any hope of success to villages, mining camps and other places where persons are living in community, and it is in some ways an unfortunate fact that malaria is essentially a disease of rural districts, and it would be difficult, if not impossible, to enforce any regulations on the scattered individuals and families in the more sparsely populated parts of the country. There is need of further legal powers, however, to insist that employers of labour, whatever their occupation or trade, shall properly safeguard their employees, and nowhere is this more exemplified than amongst the farming community, where farm assistants and pupils are frequently housed under conditions which cannot but expose them to infection. Provision to meet this position has been included in the Public Health Bill which will be submitted to the next Legislative Assembly.

The distribution of malaria was general throughout the country, gaining intensity in the northern and more humid areas, but confined almost entirely to rural areas.

Dr. Barratt, one of the Government relieving health officers, was sent on an extended medical inspection and educational tour of some of the more malarious districts, with instructions to visit individual farmers and settlers, to advise them as to the causes of malaria and how to avoid it, to meet village management boards and farmers' associations, and generally to report upon the conditions existing. He furnished a useful and illuminating report of the result of his tour, a *resumé* of which is attached. He reports that generally the farmer is alive to the dangers of malaria to himself and his family, and understands its cause, and is intelligently adopting precautions for its prevention, but that this does not always apply where his employees are concerned; and the latter, on their part, have not the money, nor frequently the intelligence, adequately to protect themselves.

The chief sufferer in rural areas is undoubtedly the small farmer or squatter, frequently of the "poor white" class, who are woefully ignorant of all matters pertaining to malaria and its cause, and are quite content to live in wattle and daub houses, the nearer to a stream or furrow the better; it is almost impossible to induce them to adopt any measures which imply any expense or trouble to themselves.

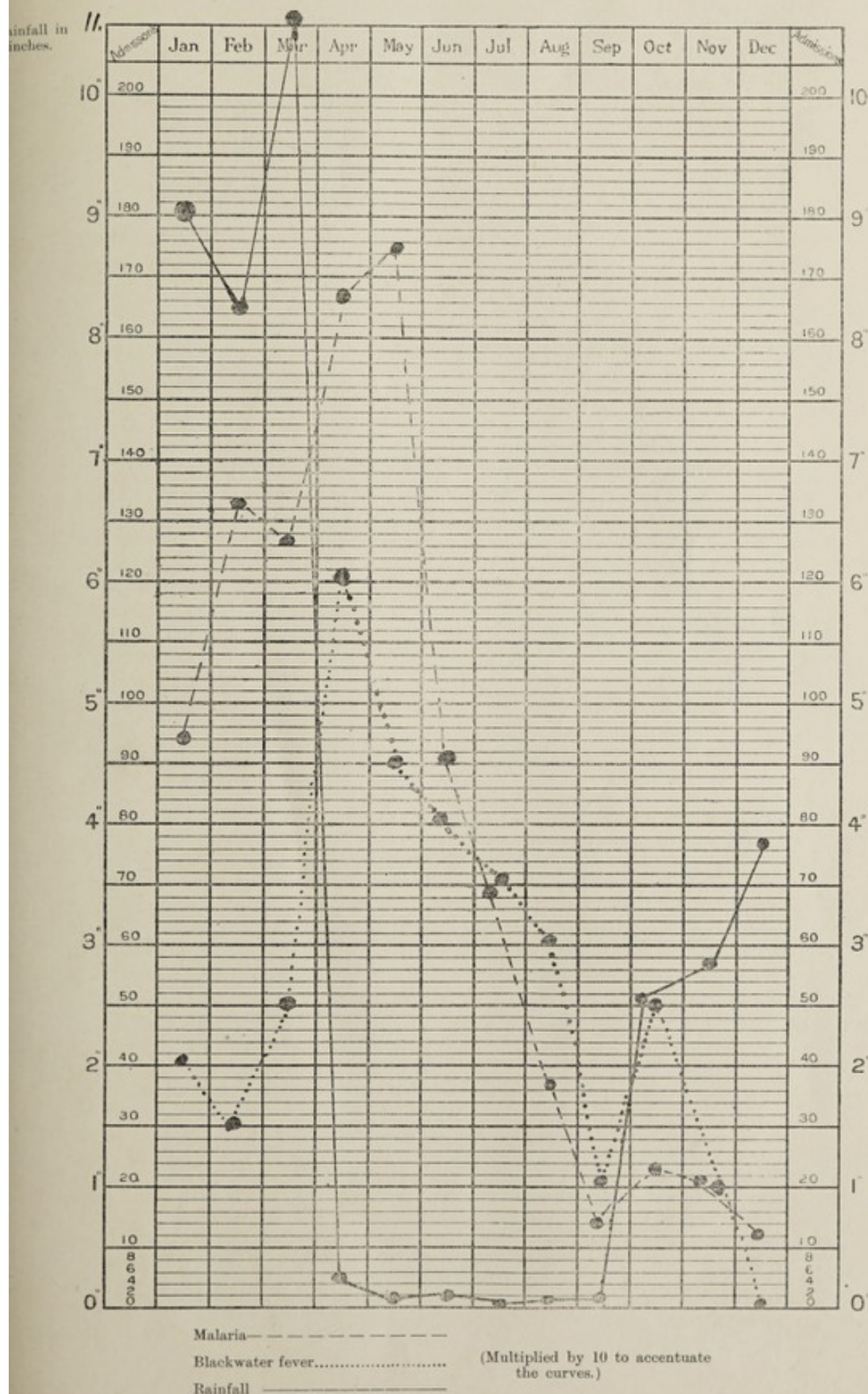
Propaganda work in the nature of lectures at selected centres, the education of school children and the wide distribution of pamphlets and circulars is being vigorously continued, and as far as the better educated section of the community is concerned, is arousing interest and attaining beneficial results.

*Blackwater Fever.*—Concurrently with the rise in malaria there was a marked increase in the number of cases of blackwater fever reported. This increase was not altogether due to the seasonal rise, but also to the greater interest evinced in this disease through the publicity given to it by Dr. J. G. Thomson's investigations in this country, and the more efficient system of notification which has recently been introduced.

The following table gives the admissions to general hospitals and the mortality rates for the last ten years:—



Chart showing Number of Cases of Malaria and Blackwater Fever, with Rainfall, in Rhodesia during year ended 31st December, 1923.







Year.	No. of cases of blackwater admitted to hospitals.	No. of deaths in hospital.	Mortality rate per cent.
1914 ... ..	53	13	24.53
1915 ... ..	62	16	25.81
1916 ... ..	35	6	17.14
1917 ... ..	48	13	27.08
1918 ... ..	36	11	30.56
1919 ... ..	37	7	18.92
1920 ... ..	75	10	13.33
1921 ... ..	53	6	11.32
1922 ... ..	49	14	28.57
1923 ... ..	64	14	21.88
	512	110	

The above table gives admissions to hospitals only. There were, however, 122 cases notified during the year, with 40 deaths, giving a mortality rate of 32.79 per cent.

*Sale of Quinine.*—The importation and distribution of quinine by the Government is being continued, and is now largely taken advantage of. Certain rumours were set afloat that Government quinine was of inferior quality and of no use in malaria, the source of these rumours being found impossible to trace. Needless to say, there was not a vestige of truth in this, the quinine imported being of the highest standard and purity obtainable; these rumours, however, did considerable harm in some districts.

During the year 9,915 bottles of 100 tablets each, representing 991,500 five-grain tablets of quinine, were distributed by this Department, which were sold to the public at 4s. 9d. per 100 tablets; the sales this year are unprecedented, and there is no doubt that the arrangements made by Government in this connection are much appreciated by the public. A further consignment of quinine is on order, and when this has been received it is anticipated the selling price to the public will be lower than it is to-day.

A recommendation was made that the Government should import mosquito netting and mosquito wire gauze in the same way that it imports quinine, and sell to the public at cost, and samples and quotations were obtained from England, with the result that it was found little saving to the public would be effected by such an arrangement. Samples of mosquito netting and quotations were collected in Salisbury, and it is a somewhat illuminating fact that nearly all of the samples submitted were of a larger mesh than 16 holes to the linear inch, which size mesh is universally recognised as being the minimum size to afford protection against the bite of the mosquito. It is quite possible that in some instances the use of nets of this nature, affording little or no protection, may have given cause for those complaints which one sometimes hears, of malaria having been contracted in spite of the precaution taken of always sleeping under a mosquito net.

*Dysentery.*—There was a marked reduction in the cases of dysentery amongst Europeans, there being 27 admissions to general hospitals, as compared with 67 in 1922. The native cases remained about the same, being 44 and 41 respectively. The type of dysentery met with was largely bacillary, and was most prevalent especially amongst natives towards the end of the dry season, when water pools were drying up; and it has been found that the disease tends to increase in numbers and severity in years of drought.



*Tropical Ulcer.*—This disease is still of frequent occurrence, especially amongst natives employed on mines and other works; it is seasonal in occurrence, and tends to become epidemic in form. The mortality rate is practically nil, but convalescence is protracted, and is often followed by permanent disablement on account of resulting deformities. The types met with do not vary materially from the text book descriptions, and laboratory investigations almost always demonstrate the presence of the fusiform bacillus of Vincent and the spirochæte. New methods of treatment are constantly being advocated and tried, but it cannot yet be said that any of them have shown any marked superiority over the others.

*Trypanosomiasis.*—One case of sleeping sickness was reported during the year. This was in a native who was brought to the Labour Bureau depot at Salisbury. He was a native of Nyasaland, but had been resident fourteen months in the Colony. He was admitted to the Salisbury Hospital in an advanced stage of the disease, and was at once treated with "Bayer 205," in accordance with the formula laid down by Professor Kleine. This drug effected no improvement in his condition whatsoever, and he died a few days after admission. Trypanosomes were numerous in the general circulation, and sub-inoculations of guinea pigs and rabbits showed them to be of the *T. Brucei vel Rhodesiense* type. It was subsequently ascertained that this native had been employed in a wood cutting gang on the borders of the Mafungabusi fly belt to the north-west of Gatooma, and that as far as could be traced no other cases had occurred amongst the other natives with whom he worked. The Mafungabusi fly belt has more than once been examined for cases of human trypanosomiasis, so far with negative results. It is a strange fact, and up to now quite unexplainable, that with the exception of this somewhat doubtful case, cases of human trypanosomiasis in this Colony have so far been entirely confined to one isolated fly belt, namely, the Sebungwe.

A further medical survey of the native population of the Mafungabusi area has been arranged for as soon as the season and work will permit.

*Small-pox.*—Three outbreaks of small-pox were dealt with, as compared with twenty in 1922. They were mild in type, and the number of cases totalled sixteen, being the smallest number of cases recorded for many years, and it is hoped that the policy of mass vaccination of the native population in districts wherever small-pox is reported is at last bearing fruit in the reduction of these outbreaks, which have been a source of anxiety and expenditure for many years past.

*Vaccination.*—Only 3,704 vaccinations were carried out last year, as compared with an average of between 60,000 and 70,000 in previous years. The reason for this was the absence of outbreaks. It is intended, however, in future to provide for the systematic vaccination of all unvaccinated natives in native reserves annually.

A return of the unvaccinated European school children attending Government and aided schools has been prepared, which shows that approximately still 15 per cent. of these children are inadequately or not protected at all. Measures are in force to meet this, but it appears to be difficult to induce parents, especially in outlying districts, to realise their responsibilities regarding this.

*Chicken-pox.*—There was no epidemic, most of the cases being sporadic and scattered impartially over the country. Mild outbreaks of chicken-pox occurred in a number of places, the number of cases officially



notified being 84, of which 50 were European and 34 native. The number of outbreaks dealt with was eleven.

The disease was mild in type, and no deaths from this cause were recorded, and its only importance to the community in this Colony is the risk of confusion with outbreaks of modified small-pox.

*Influenza.*—No serious outbreak of influenza was recorded, but quite a number of cases of influenzal pneumonia occurred amongst native mine employees during the latter half of the year, which increased the mortality rates among this class of worker during the third and fourth quarters of the year.

*Enteric Fever.*—There were 61 admissions to Government hospitals during the year, as compared with 46 in 1922, of which 51 were Europeans and 10 natives. The European mortality rate was 13.13 per cent., as compared with 13.86 in the previous year.

The total admissions, European and native, to hospitals in the last four years were as follows:—

Year.	Admissions.	Deaths.
1923 . . . . .	61	11
1922 . . . . .	46	9
1921 . . . . .	53	4
1920 . . . . .	74	14

*Malta Fever.*—There were twelve admissions to hospitals on account of Malta fever, being the same as in 1922, these being all Europeans. It is a matter of considerable interest that up to date no cases of Malta fever in a native have yet been recorded, possibly due to the fact that the indigenous native in this country eschews fresh milk and other dairy produce, the only form in which he uses it being as sour milk.

The relationship between *Micrococcus melitensis* and the *Bacillus abortus* which gives rise to the disease in cattle known as "contagious abortion" has been the subject of further laboratory study, and in view of the fact that the incidence of this disease in Southern Rhodesia can in no way be ascribed to goats, regulations under the Dairy Ordinance dealing with the sale of milk from herds known to be affected with this disease are shortly to be introduced.

*Plague.*—No cases of plague either in human beings or rodents have yet occurred in the Colony, but the prevalence of this disease in certain parts of the Union of South Africa and the wide infection there amongst wild veld rodents are arousing considerable anxiety. The risk of the spread of this disease into this Colony by human agency is remote in face of the precautions adopted both in the Union and at our borders, but the possibility of its extension through the wild rodent is a more serious problem, and cannot be lost sight of. The rodent life in Southern Rhodesia is similar in many respects to that of other parts of South Africa, and it is difficult to see what steps can adequately be taken to check the spread of plague along this particular channel.

*Infectious Diseases of Childhood.*—Cases of scarlet fever, measles, mumps, whooping cough and diphtheria were reported from time to time from various centres, but, with the exception of fairly extensive outbreaks of whooping cough in Gwelo and Salisbury, and mumps in Bulawayo, no epidemics occurred. Seven deaths from whooping cough and three from diphtheria and croup were registered, four of the former being amongst natives.

The following table shows the number of cases of these diseases notified to this Department during the year:—



Mumps .....	98
Measles .....	13
Whooping cough .....	48
Scarlet fever .....	4
Diphtheria .....	3

*Tuberculosis.*—There were 142 cases of tuberculosis admitted to hospitals during the year, of which 32 were Europeans and 110 natives.

The deaths registered were 73, as compared with 87 in 1922 and 106 in 1921. Of these 73 deaths, 18 were Europeans and 55 natives, classified as follows:—

	Europeans.	Natives.	Totals.
Tuberculosis of the lungs ...	17	46	63
Acute miliary tuberculosis ...	...	1	1
Tubercular meningitis ...	1	2	3
Abdominal tuberculosis ...	...	5	5
White swellings ...	...	1	1

The admissions to hospitals cannot of course represent all the cases existing, and can only be a guide as to the general prevalence amongst the European and native section of the community, and as far as Europeans are concerned the majority of the cases represent persons who have come to South Africa for the benefit of their health, of whom quite a proportion are soldiers who contracted infection during the late war.

It will be noted that in Table 20 of the appendix, 70 deaths in natives, due to tuberculosis, are shown as having occurred in hospitals, whereas in Table 16 only 55 deaths among natives from this cause were registered in the whole Colony. Enquiries have elicited the information that this discrepancy is due to the fact that at certain of the district Government hospitals the deaths of natives occurring in the hospital have been registered with the Native Commissioner of the district, and have not been registered in accordance with the provisions of the Births and Deaths Ordinance Regulations of 1902. All hospitals have been instructed that in future all deaths occurring in Government hospitals must be registered with the Deputy Registrar of Births and Deaths in accordance with the requirements of the Births and Deaths Ordinance.

*Helminthic Diseases.*—The following table shows the admissions to hospitals on account of parasitic affections:—

	Europeans.	Natives.	Totals.
Trematode (flukes) ...	1	...	1
Tænia solum ...	4	2	6
Hydatids ...	1	...	1
Ascaris ...	1	...	1
Filiarias ...	1	1	2
Bilharziasis ...	11	...	11

*Venereal Diseases.*—The prevalence of venereal diseases, especially syphilis, amongst natives, both in the reserves and in employment, has been the subject of enquiry during the year, and particular attention was drawn to its spread amongst native mine employees in a debate in the last meeting of the Legislative Council.

At the present time no systematic policy for dealing with these persons has yet been adopted, largely on account of the initial expenditure involved and the lack of adequate legislative measures, and it has now become a matter of extreme importance to the public health of the community. What is primarily required is additional powers for the Government and local authorities to deal with these cases, and this is



being provided for in the new Public Health Bill which is to be placed before the next Legislative Assembly; and funds will have to be found for the establishment of treatment centres in reserves and the provision of special hospital accommodation, either in connection with existing hospitals or elsewhere.

No accurate estimate of the number of cases requiring treatment would be possible without a medical survey of the native population, which would take some time and entail a considerable expenditure. Certain figures are, however, available from the returns supplied from Belingwe native reserve, mine compounds and the Salisbury Municipality, and the following table shows the percentage of adult males infected with syphilis in these three separate and distinct native communities:—

Salisbury Municipality...	No. of natives examined under the Native Regulations, 14,369	Percentage infected with syphilis, 0.59
Mine compounds ...	No. employed, 37,482 ...	Percentage infected with syphilis, 0.59
Belingwe Native Reserve	No. of tax-paying natives, 6,577	Percentage infected with syphilis, 0.42

From the above figures it would appear that about 0.5 per cent. of the young adult male native population is infected with syphilis in an active form; too much reliability cannot, however, be placed on this, as it in no way indicates the general distribution, and it is common knowledge that whilst the disease may be extremely prevalent in some districts and on some mines, it is practically unknown in others.

(b) *Diseases of unknown Origin peculiar to Natives and awaiting further Investigation.*

*Splenic Abscess.*—Abscesses of the liver are not common, but both in Northern Rhodesia and in this Colony attention has been drawn to the frequency of abscesses of the spleen, especially amongst natives who have come from north of the Zambesi. Two of these cases showed evidence of amœbic infection, but it is not contended that this is the primary cause in every case, and further investigation is required.

*Endemic Cirrhosis of the Liver.*—Another disease to which natives are prone is a progressive and invariably fatal cirrhosis of the liver with accompanying anasarca. It is in no way connected with alcoholism, and occurs most frequently in young males of under 20 years of age. It is a disease which also awaits further investigation. Eight deaths from this cause were recorded amongst natives during the year.

*Chronic Lymphangitis.*—Another disease to which natives in employment are singularly prone is chronic lymphangitis of the lower extremities, especially prevalent amongst natives working on mines and other works, but rarely seen amongst farm labourers or domestic servants. It is never fatal, but is of considerable economic importance owing to the protracted nature of the illness, and from the fact that it tends to relapse as soon as the patients return to work, and as a rule they have in the end to be discharged as permanently disabled for work. The most careful laboratory investigations to date have shown no association between this disease and filariasis, but further extended investigation is called for. There were 47 admissions to general hospitals on this account, with no deaths, this in no way reflecting the number of cases occurring, as apart from the swelling of the lower extremities and the lameness, the patient is rarely ill, and the majority are treated in mine hospitals or compounds, and do not always come under medical observation.



Dr. MacKenzie, of Hartley, reports in some cases a spirillum has been found, and that the majority re-act favourably to .6 gr. Novarsenobillon.

#### CHAPTER V.—HOSPITALS AND ASYLUMS.

There were 6,325 admissions to general hospitals in Southern Rhodesia in 1923, as compared with 6,029 in 1922. Of these, 3,310 were Europeans and 3,015 were coloured and natives. European admissions were increased by 434, while native and coloured admissions were decreased by 38.

European admissions reached their highest in May and their lowest in the month of August, being approximately similar to observations made in former years, while native admissions were highest in May and October and lowest in July.

*Bulawayo Hospital.*—This is a memorial hospital, managed by a local hospital board, the Government contributing a grant-in-aid of £4,200 a year, and paying for the maintenance and treatment of police and other Government patients and all native paupers. The total number of white patients admitted to the hospital during the year was 925, as compared with 911 in 1922; and 682 natives, as compared with 717 in 1922. Three hundred and eighty-five European and 102 native operations were performed during the year.

*Salisbury Hospital.*—There were 1,880 cases admitted during the year, of whom 1,072 were Europeans and 808 were natives and coloured, as compared with 982 Europeans and 853 coloured and natives in 1922. Two hundred and thirty-five major and 338 minor operations were performed during the year. The only structural work done during the year was additional accommodation for the native staff. The work at this hospital is increasing, cases for surgical operations being admitted from all parts of the Colony, and further European accommodation is becoming a matter for early consideration.

*Umtali Hospital.*—There were 600 admissions, of whom 463 were Europeans and 137 were natives, as against 331 Europeans and 147 natives for the previous year. Five major and 14 minor operations were performed. Additional accommodation for female patients is required. As a temporary measure it has been arranged to convert the medical officer's house into quarters for the nursing staff, and to utilise the present nurses' home as further ward accommodation; this will necessitate other alterations and reforms which it is proposed to proceed with at the same time.

*Gwelo Hospital.*—Six hundred and eighteen patients were admitted during the year, of whom 218 were Europeans and 400 were natives and coloured, as compared with 572 patients during the previous year. Fourteen major and 40 minor operations were performed.

A ward for chronic sick Europeans has been opened at this hospital during the year, and at present there are seven patients of this class accommodated there, and this number will be added to from other hospitals as occasion may arise. It may ultimately be necessary to establish an infirmary building for the aged and infirm, but at the present time the above ward at Gwelo is sufficient for immediate requirements. An additional nurse has been appointed to the staff there on this account.

The number of native patients applying for admission to this hospital is far in excess of the accommodation provided, and an additional



native ward has been asked for and placed on the schedule of additional public buildings required.

*Fort Victoria Hospital.*—The number of admissions was 208, of whom 98 were Europeans and 110 were natives, as compared with 112 and 116 Europeans and natives respectively in 1922. Six major and 21 minor operations were performed. There is no operating theatre at this hospital, and surgical work is seriously hampered in consequence. There is, however, little to be gained by adding to the present buildings, and what is urgently required is a new European and native hospital and a nurses' home on a more extended site. Plans have been prepared and a site selected, and it is expected that this building will be proceeded with as soon as funds are available.

*Gwanda Hospital.*—The admissions to this hospital numbered 36 whites and 124 natives, as compared with 13 and 122 for the previous year. Fifteen minor operations were performed.

*Enkeldoorn Hospital.*—Thirty-two whites and 24 natives were admitted to this cottage hospital during the year. The medical officer remarks that the hospital has justified its existence, in that a number of cases owe their improvement to the care and nursing received here.

*Gatooma Hospital.*—The European and native hospitals exist as separate buildings, and both institutions have been the subject of much controversy in the past. The European hospital is a rented building, and it is claimed the native hospital should be removed from its present site in the business centre of the town, and that a new hospital for Europeans and natives should be provided. So far as the native hospital is concerned, there is something to be said for the contention put forward, but the urgency of a new European hospital is entirely dependent on whether the trustees of the present building will agree to the extension of this lease or not. As far as the actual requirements of Gatooma and district are concerned, the present buildings adequately provide for all immediate wants.

During the year 262 patients were treated in the European hospital and 414 patients were admitted to the native hospital. There were 14 deaths in the former and 75 in the latter institution. Two major and 10 minor operations were performed on Europeans, and 15 native operations were performed—4 major and 11 minor. Midwifery cases are admitted to this hospital, and there were 14 confinements during the year.

*Shamva Hospital.*—One hundred and twenty-five whites and 202 natives were admitted during the year, as against 148 and 52 respectively for the previous year. Three minor operations were performed. The present hospital building is a wood-and-iron structure. The wards are much too hot, and a suitable and complete new hospital is urgently required. This matter is receiving consideration.

*Sinoia Hospital.*—The above remarks also apply to Sinoia Hospital; the present European hospital has been rendered cooler by fixing in a double roof, but a new and more suitable hospital is urgently required. This matter is receiving consideration. An extra room has been built as accommodation for the second nurse now employed here. During the year 73 white and 82 native patients were treated, as against 72 and 112 respectively in the previous year. Eighteen operations were performed, and there were 6 confinements. The maternity ward attached to this hospital is a boon to residents in this district, and the arrangements in this connection are stated to be much appreciated.



*Belingwe Hospital.*—This is a small cottage hospital under the medical charge of the Government Medical Officer, Filabusi, who visits at regular intervals. Forty-two patients were admitted during the year—6 Europeans and 36 natives, as compared with 9 and 40 for the previous year.

Statistics relating to the principal diseases treated in these institutions during the year will be found in tables in the Appendix.

*Morgenster Leper Settlement.*—The total number of in-patients was 153. Thirty-one new cases were admitted during the year. This leper settlement is under the medical care of the Government Medical Officer, Fort Victoria, who visits at regular intervals. Dr. Henson reports that treatment with the esters of Chaulmoogra oil was tried, but the results to date did not warrant any conclusions. In some instances the wounds dried up, but in no case could a cure be pronounced. The general health of the settlement has been good, and with the abundant rainfall, patients did well and produced the bulk of the grain required for their own use. A small hand-mill for grinding has been provided. At first this was strongly objected to, but the lepers now appreciate its use. The total expenditure during the year amounted to £1,188.

*Ingutsheni Mental Hospital.*—In his report for the year, which will be found printed in Part II. of this report, the Medical Superintendent again draws attention to the arrears of buildings still required, the most urgent of these being the European female hospital, and more accommodation for native females. Dr. Eaton states there is much overcrowding; he also mentions that the water supply is likely to give cause for anxiety if the number of patients is increased.

At the present time the following Rhodesian patients are being maintained in mental hospitals in the Union of South Africa:—13 European females, 6 European males and 2 native females. The maintenance charges for these patients are 6s. per diem for whites and ~~2s. 6d.~~ 2s. 6d. per diem for natives. Approximately £1,500 was paid to the Union Government for these patients in 1923, and owing to the number of patients having increased, the present rate of expenditure approximates £1,800 a year. Three of the above male European patients now in Union mental hospitals are of the recalcitrant class, and their removal to Ingutsheni would be inadvisable, but as the cost to Government of maintenance at Ingutsheni would be much less, the provision of accommodation for European females at Ingutsheni would permit of a number of these patients being removed thither, and a substantial saving in expenditure would be effected. These matters will receive consideration, and it is hoped funds will be available to provide the necessary buildings during next financial year.

*Meteorological.*—Tables 24, 25, 26 and 27 in the Appendix show the meteorological conditions at Salisbury, Bulawayo, Umtali and Melssetter. These returns have been kindly furnished to this Department by the Hydrographic Engineer, and the statistics contained therein may be taken as fairly representing the average climatic conditions so far as temperature, rainfall and winds are concerned throughout the Colony.

A. M. FLEMING,

Medical Director.



## **PART II.**

### **Pasteur Institute and Public Health Laboratory.**

#### ANNUAL REPORT FOR YEAR 1923.

*Staff.*—This consists of the Bacteriologist, senior and junior assistant, and two native laboratory boys. A Research Investigator is coming out yearly. It is hoped that an Analytical Chemist and an Entomologist may be added some day.

#### **Pasteur Institute.**

A fresh lot of rabbits was obtained early in the year, as the old lot was becoming unsatisfactory from in-breeding.

During the year four patients were treated, two Europeans and two natives, all from Northern Rhodesia. They were quite well on discharge.

We have had no patients from Southern Rhodesia since 1913, and none from parts other than Northern Rhodesia since 1919.

Three animals' brains were examined, with negative results.

In the latter part of the year sections of cord in glycerine were sent to Livingstone so that patients could be treated there, thus saving the expense of coming here.

We have now adopted new methods both of preserving and of sending out virus for treatment, these methods being based on those in use at the Pasteur Institute of Columbus in America and the Kasauli Pasteur Institute in India. The virus is now preserved as glycerine emulsion in ampoules in the ice chest, and is stated to preserve its virulence for years. For treatment cases it is sent out by post, ready for use as a saline emulsion in vaccine bottles, so that there is no longer the trouble of grinding up the cord sections, and patients can now be treated at their own home, thus avoiding the inconvenience and expense of a three weeks' stay in Salisbury. Virus as above is being sent regularly to Livingstone at a small charge.

#### **Public Health Laboratory.**

##### I.—ANALYSIS OF WORK DONE.

A. *Research.*—Special work on blackwater fever was carried out by Dr. Thomson, with such assistance as was required of the rest of our staff, and a special report has been made by him.

Some work on blackwater, malaria and Malta fever was done by ourselves, the result of which is given later under those headings.

B. *Routine.*—A marked increase is to be recorded, 1,457 examinations being made, as opposed to 807 in 1922. The increase is partly due to the fact that from April onwards hospital patients were examined free. The question of the doctors' responsibility for collecting fees has just been satisfactorily settled, and this should result in a further increase.

The following table shows the use made of the laboratory by different places :—

	1922.		1923.
Southern Rhodesia—			
Salisbury ... ..	715		1,352
20 other towns ... ..	92	19 towns	99
Northern Rhodesia ... ..	...	3 towns	3
Portuguese East Africa ...	...	2 towns	3

As I remarked last year, the figures for the rest of this Colony are unsatisfactory and a reproach to the doctors concerned, for there is no reason why non-urgent specimens should not be sent. Now that it is known that hospital cases are examined free, I hope that an increase of outside work will result, as this decision was not communicated to outside doctors until recently.

The following table shows the methods employed :—

	1922.	1923.
<i>Bacteriological and Protozoological—</i>		
Microscopical examinations ... ..	337	577
Agglutination tests ... ..	137	147
Preparation of vaccines ... ..	62	67
Decomplementising serum ... ..	24	51
Sigma re-action ... ..	...	52
Cultural examinations ... ..	79	201
Examination of water supplies ... ..	18	9
Antiseptic co-efficients ... ..	...	26
Biologic tests ... ..	...	1
<i>Helminthological (for parasitic worms)—</i>		
Microscopical examinations ... ..	44	76
<i>Entomological—</i>		
Identification of insects ... ..	2	1
<i>Pathological—</i>		
Microscopical examinations ... ..	29	113
Sections of tumours, etc. ... ..	16	25
<i>Chemical—</i>		
Tests ... ..	8	33
Quantitative estimations ... ..	1	47
Biologic tests ... ..	4	...
<i>Medico-Legal—</i>		
Microscopical or chemical tests ... ..	37	28
Biologic tests ... ..	9	2
	807	1,457

## II.—REMARKS ON DISEASES, ETC., DEALT WITH.

A. *Blackwater Fever*.—Dr. Thomson's researches are dealt with by him in a separate report, which confirms the generally accepted view that this disease is due to malaria. We have now to explain what causes the attack of blackwater in a malarial subject, and find out how to avoid or cure it.

The following work on this disease was carried out by ourselves :—

(a) *Blood Groups*.—The human race is divisible into four main groups by the action of the serum of each group on the red cells of the other groups. Europeans (especially English) are chiefly group 4, and next group 2; while Asiatics and Africans are chiefly group 3, and next



group 2. Seventeen cases of blackwater were tested as to their grouping, and 49 per cent. proved to be group 4, and 41 per cent. group 2. Blackwater therefore appears to favour people of European descent, and this is of course borne out by actual statistics.

(b) Causes other than Malaria.—These should always be borne in an open mind, as hæmolysis (such as occurs in blackwater) can be caused by the toxins of various parasites, *e.g.*, *Spirochaetes B. welchii*, *Streptococci*, *M. melitensis*, etc. A few cases were therefore tested for Malta fever, but with negative results.

(c) Hæmolysis.—Destruction of the patient's red corpuscles (hæmolysis) is the essential cause of the symptoms and death of the patient usually, and is still unexplained; so this subject was studied chiefly, with especial reference to "hæmolysins." These are substances usually present in cases of blood destruction, and usually act on a given animal only, *e.g.*, a human hæmolysin will only affect the red cells of man and not those of other animals, such as rabbits.

(1) A human hæmolysin was first prepared by injecting a rabbit for a month with human red cells, and this hæmolysin was then injected into a rabbit for some weeks in the hope of getting a serum which would protect against hæmolysis, but the serum when tested showed no such power. This is explained by the fact that a human hæmolysin is not harmful to a rabbit's red cells, hence the rabbit did not find it necessary to produce an anti-serum to the injections. A previous result (1921) shows, however, that by injecting a rabbit with a *rabbit* hæmolysin, which is harmful to its red cells, an anti-serum could be obtained. Therefore, while it is unlikely that we can obtain an anti-serum which would protect man against hæmolysis (and so against blackwater) by any injections of animals, it is quite possible that by injecting man with human hæmolysin an immunity to hæmolysis could be obtained. Injections of hæmolysin are, however, not without danger, unless the doses be very carefully worked out and graduated. This dosage will next be worked on.

(2) Attempts were also made to demonstrate the presence and nature of any hæmolysins in the blood of blackwater cases, and the following tests were made with blood and malarial cultures kindly given me by Dr. Thomson, 37 cases of blackwater and malaria being examined, with the following results:—

Hæmolysis occurred directly in the drawn blood of all of seven blackwater cases during the attack; in one out of seven recovering or recovered cases; in two out of three cases of malarial jaundice; and did not occur at all in two cases of malaria without jaundice. A hæmolysin of some sort was present in the cases of actual blackwater, and malarial jaundice is rightly called a pre-blackwater stage.

The nature of the hæmolysin was then examined. It was not like that of paroxysmal hæmoglobinuria (a disease practically identical with blackwater), because it acted at blood temperature and not only at low temperatures. It was not like the snake venom type, because it required the presence of serum-complement. It was therefore of the ordinary serum-hæmolysin type probably.

A connection between this hæmolysin and the malarial parasite was then sought for. Results are, so far, too few for one to give an opinion, but there seemed to be more hæmolysis if parasites were present in the blood, especially if they were at the mature stage.



Possibly therefore the hæmolysin is due to the presence of the malarial parasite, either formed by the patient or by the parasite itself.

Not all blackwater bloods hæmolised when the patient was recovering, although a hæmolysin could be demonstrated. Results so far point to this being due to some inhibiting or protecting power of the patient's serum. If this be so, we could explain the attack as being due to the temporary absence of this protecting power, recovery to its return and immunity to its constant presence.

**B. Malaria.**—Three hundred and thirty-seven examinations were made, with 70 positive results. Sixty-seven were the malignant tertian parasite, one benign tertian and malignant tertian combined, one benign tertian and one quartan.

As remarked last year, negative results are only too common even in cases of undoubted malaria. Probably a serum test without any fallacies will be devised soon, but meanwhile we have to examine blood smears. The only alternative is to examine larger quantities of blood than the portion of a drop sent, but this is not easy to obtain.

**C. Undulant (Malta) Fever.**—Seventy-two agglutination tests, with 19 positives, were made, and some blood cultures were made in confirmation of the diagnosis. The disease does not seem to have increased.

The two points requiring investigation mentioned in last year's report were studied, with the following results:—

(a) **Methods of Diagnosis.**—Agglutination tests are still relied on chiefly. A skin test is of equal value and will be tried. Ordinary blood cultures fail only too often, so we evolved a method which gave far better results. We were thus enabled to obtain several strains from cases of the disease which were used, as given in the next paragraph.

(b) **The Connection between Malta Fever and Contagious Abortion.**—As cases of Malta fever have occurred in Rhodesia in people who have never drunk goat's milk (the usual cause in Europe), investigations into a possible connection with contagious abortion of cows were begun. The strains of organisms obtained as above were compared with strains derived from European cases of Malta fever, and from both European and Rhodesian contagious abortion. They were all exactly alike in shape, staining and cultures.

A good number of rabbits were then inoculated for a month, their serum prepared and absorption tests made, with the following results:—

It was found that all these organisms are of the same genus (which is now called *alkaligenes*, *e.g.*, *Melitensis*, *A. abortus*, etc.), but that while European Malta fever is due to *A. melitensis*, the strains from both Rhodesian Malta fever and from contagious abortion were identical, *i.e.*, the cases of Rhodesian Malta fever examined were due to infection with the organism of contagious abortion of cattle. I may say that this has occasionally been the case in other countries.

It now remains (1) to explain how this infection of man has occurred in Rhodesia, and (2) to estimate the danger of drinking the milk of cows suffering from contagious abortion.

(1) In the first place, contagious abortion is very common throughout the world, and yet Malta fever does not usually result in man in such localities. Secondly, *A. abortus* has hitherto been considered practically harmless to man for the above reasons; and in a few cases, where it was allowable to do the experiment, direct inoculation of man has failed. On the other hand, occasional infection of man undoubtedly does occur in Rhodesia and elsewhere. Now it has been found that in monkeys (the animal most nearly



related to man) both *A. melitensis* and *A. abortus* produce identical disease ("Malta fever"), and the only difference is that the infecting dose of *A. abortus* has to be very large in order to produce the disease, compared with the infecting dose of *A. melitensis*.

It is probably the case, therefore, that *A. abortus* is usually not infective to man, but that on occasions it can produce infection. The reason for this occasional infection is yet to be found. Possibly it is a matter of dosage as in monkeys, a sufficiently large dose producing the disease. Possibly (as in small-pox, where passage through the calf causes a weakened virus which can be safely used for vaccination and yet can occasionally cause severe symptoms) the passage of the organism through the cow has weakened its virulence to man, and perhaps passage through a different animal (such as antelope or pigs) then causes it to regain its virulence. Possibly the route of infection is the explanation. For instance, feeding calves with the milk of infected cows usually fails to infect, and yet infection of the genitals is readily obtained; and so, similarly, in man infection by feeding with milk might fail, while inoculation of the blood stream by a biting insect (which has been in contact with infected milk or dung) might succeed.

All these possibilities have now to be explored, and I am glad to say that Mr. Bevan has kindly offered to perform a series of inoculation experiments with the above organisms, the result of which will be noted and followed up.

(2) The danger of drinking the milk of infected cows is difficult to answer. Not all infected cows have infected milk, though this usually occurs sooner or later. Again, all over the world people are drinking infected milk, though they probably boil it as a rule, and yet very few cases of Malta fever occur. Also, in Rhodesia, the cases that have occurred have not suggested milk infection, *e.g.*, instead of getting groups of cases with a common milk supply, we get isolated cases with the rest of the family unaffected.

Possibly large doses of the organism, *e.g.*, heavily infected milk, are necessary, but the explanation is still obscure. Provisional advice has to be given, however, and it seems wisest to state the exact position, *i.e.*, that *A. abortus* does affect man sometimes, and it does occur in infected cows' milk, and that it is therefore safer not to use or supply such infected milk, or butter made from it.

*D. Enteric and Similar Fevers.*—Sixty-seven agglutination tests were made, with 16 positives, all typhoid. There were no cases of paratyphoid. Other organisms causing similar disease are kept in stock to be tested against when required. Cultures from blood and stools were made in a few instances, but not so frequently as is to be desired, for blood cultures will usually give a positive result in the first week, when the agglutination test is still negative, *i.e.*, at the very time when diagnosis is of most importance.

It is to be noted that experiments showed a close relationship between typhoid and Malta fever.

*E. Dysentery* (bacillary and protozoal).—Twenty-six examinations for amœbic dysentery were negative, but there were two cases of hepatic abscess, which is usually due to amœbæ. Two cases gave positive agglutination tests for bacillary dysentery, and most of our cases seem to be of this type. It may be mentioned that other organisms can cause dysenteric symptoms.

*F. Pneumonia.*—No outbreak has called for investigation. The pneumococcus is frequently found in other lung conditions, and is consequently included in most vaccines for chest complaints.



G. *Influenza*.—No epidemic occurred for investigation. In other countries the importance of the filtrable virus is still being worked on.

H. *Tuberculosis*.—Seventy-four examinations, with 16 positives, as opposed to 59 examinations and 7 positives in 1922. The disease has not so far been common, but with the arrival of new settlers we must expect a gradual increase of imported cases.

I. *Leprosy*.—Eight examinations of skin and nasal swabs gave three positives.

J. *Diphtheria*.—Fifty-six examinations gave 18 positives, as compared with three positives in 1922, but in several cases the bacilli were too scanty to be the cause of the sore throat, though recorded as positive.

I hope that the Shick test will be given a test in this country, as it gives valuable information as to those that are susceptible to the disease and require appropriate measures, and those who are not susceptible and require none. Those who are susceptible are usually immunised at once by injections, and the protection thus given lasts some years. Epidemics may thus be stamped out or prevented from occurring.

K. *Syphilis*.—Apart from some direct examinations for the organism, serum was decomplexed 50 times and sent off for the Wasserman test. The Sigma re-action has been brought lately to a very satisfactory stage, and, being simpler and more delicate than the Wasserman test, has been adopted by us. Fifty-two Sigma tests were made by us, and the fees earned have already balanced the small cost of the apparatus required. Material for the Luetin test, which is a valuable accessory to the Wasserman and Sigma tests, is being obtained.

L. *Gonorrhœa*.—Fifty-four examinations gave 14 positives. Similar symptoms are often caused by other organisms.

M. *Shistosomiasis (Bilharzia)*.—Sixty-four examinations gave 27 positives, as compared with 29 positives last year, but this year the positives were in several cases from the same patient being re-tested under treatment, so there were really fewer cases. The disease seems well under control among Europeans, though of course the natives are commonly infected. It is probable that after blackwater fever this disease will next receive the attention of a research investigator; for methods may be evolved of snail destruction which, combined with methods against urinating near streams or ponds, might help to free the country of the infection and enable us to bathe safely. There is still no evidence that swimming baths, if protected by previous settling of water and filtration, are of any danger to the public. *S. hæmotobium* (affecting the bladder) is the species usually found in this country, though *S. mansoni* (affecting the rectum) also exists here.

N. *Other Parasitic Worms*.—Hydatid disease; one positive. Filariasis; five negatives. Oxyuris; three positives.

O. *Diabetes*.—In connection with the insulin treatment, several cases had the amount of sugar in their urine estimated at frequent intervals. It is curious to note that practically all the patients were Greeks. The following series of tests, made on one patient, will give an idea of the value of the treatment, the figures given being the amount of sugar in the urine, expressed as parts per thousand:—

- (1) No insulin treatment—April: 83, 62, 42. May: 50, 30, 71. June: 31.
- (2) Regular insulin treatment—August: 55, 46, 5, 5, 17, 4, 5, 6, 3, 4, 4, 3.3, 3, 2.5. September: 1, 0.7, 1.2. October: 1.4.
- (3) Insulin discontinued—November: 3.3.



P. *Other Diseases*.—Cerebro-spinal fever; two negatives. Tick fever; one positive and five negatives. Trypanosomiasis; five negatives.

Q. *Water Supplies*.—A specimen from Domboshawa was examined. The Salisbury supply is examined at regular intervals. The effect of gypsum and alum in the treatment of the local supply was also tested.

R. *Pathology*.—One hundred and thirteen microscopical examinations of deposits, blood, etc., were made for various conditions, and 25 examinations by sections were made. The latter showed three malignant and two non-malignant growths; granulomata due to tubercle (1), syphilis (2), leprosy (1), and mycetoma (1); inflammatory conditions (10), cystic hygroma (1), and goitre (1).

S. *Chemical*.—Thirty-three tests and 47 quantitative estimations were made. These latter were chiefly in connection with diabetic urine.

T. *Medico-Legal*.—Twenty-eight tests for blood stains, etc., and two biologic tests on animals were made. A bottle of fluid and five roots were examined for the presence of poisons.

### III.—STATEMENT OF FEES EARNED.

The fees classed below as "Government" represent gratuitous work done for patients in hospital, police, paupers and natives. "Private" represents actual cash from private patients outside hospital.

The decision to do examinations free for patients in hospital (converting many "private" fees to "Government") took effect from April onwards, but did not result in as much loss of revenue as one would have expected, as it was counterbalanced by an increase in private work done outside hospital.

It has just been decided that the doctors will not be held responsible for laboratory fees if the patients do not pay these fees, and it is worth noting that since the decision was made (January, 1923) a marked increase in "private" work has followed, and I anticipate that this year will show a good increase in actual cash earned, so that both the laboratory and the doctors will gain, financially and otherwise, by this wise step.

	1922.	1923.
Pasteur Institute—		
Private: (1) Treatment of patients	£20 5 0	£24 0 0
(2) Posted treatments ...	...	8 8 0
Government ... ..	...	...
Total ... ..	£20 5 0	£32 8 0
Public Health Laboratory—		
Private ... ..	305 2 6	272 18 9
Government ... ..	129 8 0	421 8 6
Total ... ..	£434 10 6	£694 7 3
Combined Totals—		
Private ... ..	325 7 6	305 6 9
Government ... ..	129 8 0	421 8 6
Total ... ..	£454 15 6	£726 15 3

L. J. J. ORPEN,

Government Bacteriologist.

Salisbury,  
22nd March, 1924.



## Annual Report of the Medical Superintendent, Ingutsbeni Mental Hospital.

I have the honour to submit my report for the year ending 31st December, 1923.

On 1st January there were 172 patients on the register, and on the 31st December there were 174 in residence, *i.e.*, 117 male natives, 26 female natives and 31 Europeans. The daily average number resident was 173, as against 172 the previous year. Fifty-two patients were admitted, *i.e.*, 12 male Europeans, 32 male natives and eight female natives. Twenty-one were discharged and 29 died during the year.

The 52 cases admitted included two re-admissions, both male natives. Among those admitted during the period under review there appeared to be a larger number of feeble-minded and melancholic cases than in previous years, and as these are less hopeful forms of insanity, they appreciably affect the recovery rate, which is much lower than the average during the last quinquennial period.

Of the 21 cases discharged, 16 recovered and five were relieved. The recovery rate, calculated on the number of admissions, excluding transfers, was 30.76, as against 51.91 for the previous year. The death rate, calculated on the total number in residence, was 12.94, as against 15.32 in 1922.

Probation was allowed in one case, and a number were liberated on pass for periods varying from one to seven days prior to discharge.

Seclusion and restraint were used in the case of one female European and two male Europeans for periods ranging from half-an-hour to twelve hours on four occasions. The reasons for restraint were for uncontrollable violence and homicidal inclinations; persistent attacks were made on patients and staff under the influence of hallucinations. Seclusion was used during an attack of hysteria to avoid struggling and risks of injury.

Of the five cases discharged as relieved, four were transferred to hospitals in the Union of South Africa, while one patient was discharged "by escape."

There has been a considerable increase in the number of alien natives admitted during recent years. Representations to the Governments of their respective countries of origin have failed to obtain any assistance towards the maintenance of these patients. There are now in residence 20 alien natives whose identities have been established by the Finger-print Bureau. They are a burden on this country, and I think further representations for maintenance should be made to the Governments concerned.

As is not unusual in any hospital of this kind where overcrowding is a rule, many trifling minor injuries occurred to patients and staff; these are duly recorded in the "Daily Report," but I am glad to state that there was nothing of so serious a nature as to require mention here.

Employment, as is well known, is a valuable aid to treatment, and it has been a rule in this hospital to employ every patient usefully, when physical and mental condition permitted. It was with regret that recreations and amusements have hitherto been limited, owing to curtailed means. Recently, however, a grant of £100 from hospital donation



funds enabled me, to some extent, to supply this long-felt want, as well as adding a few articles of furniture for the comfort of the European patients; these additions are greatly appreciated. The chief object of amusements and recreations in a hospital for the treatment of mental diseases is to relieve the monotony of routine and the every-day sameness of institution life; thus they prove a useful aid to recovery, and I believe that they should have a prominent place in our plan of treatment, and could with advantage be multiplied.

Nothing has yet been done as regards the separation of the coloured and Asiatic males from the native male patients. I submitted a building scheme last year with a view to mitigating this difficulty and to provide more accommodation for female natives. Overcrowding is bad, and I trust that this question will receive serious consideration when estimates for the next year are discussed. A plan to allow of accommodation for European females was sent forward, along with other building requirements, but I am now doubtful of the wisdom of proceeding with that scheme until our water supply is permanently improved, and this, I am afraid, cannot be done except by connecting this hospital with the town supply. Some improvement in the existing water supply was effected by the substitution of a new windmill for the old one, but, although more regular, the quantity is not plentiful.

The farm and garden have been a financial success during the year, and show a credit balance. This has been no doubt due to the excellent and regular rains experienced during the growing season. The dairy is also paying its way, and abundance of milk and butter for the use of the hospital was available. Sufficient mealie meal of our own growing is on hand to last until August, 1924.

Revenue from paying patients and sales of produce and live stock amounted to £1,270 9s. 3d., *i.e.*, maintenance fees £1,103 11s. 9d., sales £166 17s. 6d. Supplies from the farm and garden for the use of the hospital amounted in value to £644 1s. 9d. There were outstanding from maintenance fees £192 0s. 3d. on the 31st December, 1923.

The total expenditure for the year, including produce supplied from farm and garden, was £6,959 19s. 6d. This works out at £40 4s. 7d. per patient per annum.

The cost of maintenance, calculated on the gross expenditure, is 2s. 2d.; and the cost per patient per diem, excluding produce, is 1s. 11 $\frac{3}{4}$ d. The net cost to the Government, after deducting revenue from hospital vote of expenditure, is 1s. 6 $\frac{3}{4}$ d. per caput per diem.

W. M. EATON,  
Medical Superintendent.



### Dr. Barratt's Report on Educational Health Tour (Abridged).

I beg to submit a report upon a tour of the Shamva, Bindura, Mazoe and Sinoia districts undertaken during October, 1923.

At the outset it became apparent that farmers generally are acquainted with the facts relating to malaria as embodied in the various circulars issued by the Medical Director.

It was found that on the whole they are making considerable efforts to protect themselves from mosquitoes by screening their houses and by cutting down vegetation. Of the many screened houses examined, however, it can hardly be said that more than half-a-dozen were completely mosquito proof. In nearly every case some loop-hole for the entry of mosquitoes was left. It was not uncommon to find a well-constructed, well-screened house where every apparent precaution had been taken, and yet where mosquitoes gained entry. The owners of such houses were at a loss to understand why their efforts had failed to keep out mosquitoes, and were naturally inclined to be despondent in consequence. The explanation and the remedy, however, were alike simple.

The chimneys had been overlooked, and mosquitoes were using this port of entry to an otherwise perfectly screened house. This is a fact easily demonstrable in the rainy season.

Another frequent cause of mosquito invasion was failure to block up the spaces left by the corrugations of an iron roof.

With regard to mosquito elimination, it was found that farmers were alive to the necessity of clearing away tins and filling up holes in the ground, but here again they commonly failed in two important particulars. In nearly every instance the overflow pipes of the water tanks were unscreened, and holes in the trunks of indigenous trees were overlooked. Such omissions were quite enough to nullify all other attempts at mosquito control.

Most farmers were wise enough to place their native compounds at a considerable distance from and to leeward of their homesteads. But it is not generally recognised that outhouses situated too close to the dwelling house constitute a serious menace. If mosquitoes are present at all they will be found in greatest numbers in the outhouses. There is no doubt that mosquitoes can drift for considerable distances, but they cannot maintain their presence around a homestead unless there is suitable cover.

Of the farm houses examined, about 30 per cent. were mosquito proof, except for minor deficiencies which could easily be remedied; a further 30 per cent. showed some attempt at protection; while the remainder were unprotected.

It is evident, therefore, that farmers, particularly the more recent arrivals, are taking a keen interest in the malaria problem, and are endeavouring to combat the mosquito to the best of their ability. On the other hand, the position as regards the villages is most unsatisfactory.

The local officials thoroughly realise the position, and are doing their utmost to induce the inhabitants to move in the matter, but so far without much success. The people most concerned appear to be quite apathetic and content to leave things as they are.



It is satisfactory to note that a native location is about to be established near Bindura. At present natives and their families are living in the village, thus constituting a serious menace to the health of the European community.

The general sanitary condition of Sinoia is much better than that of Bindura, but there is room for considerable improvement. The first steps should consist in the removal to a location of all native families and all native males not engaged in domestic service. At present the families of native police and gaol guards are living close to and to windward of the school. This is a danger to school children and others which ought to be removed at once.

The authorities in Sinoia are alive to the importance of sanitation and mosquito control. Provided they are given the necessary legal powers and are sustained by good advice, they will no doubt effect a considerable improvement in the sanitary condition of the village.

With regard to mosquito distribution in the various districts, it was noticeable that anopheles were not breeding in the deep water of spruits and rivers at this time of the year. Their larvæ were found only in shallow ground pools and in the headwaters of spruits where the water was warm. It is probable, therefore, that an attack upon these limited breeding grounds would lead to good results.

Numerous mosquitoes were found in outhouses and in unscreened dwellings. Many of these had probably been hibernating.

In one case it was found that anopheles were drifting 500 yards down wind across ploughed lands, and were accumulating in great numbers in the outhouses around a farm dwelling. The larvæ were confined to the shallow water of a small spruit, and could be dealt with by paraffin.

During September large numbers of mosquitoes—mostly males—appeared almost simultaneously in the various districts. The significance of this phenomenon is not known.

The want is felt in this country of a cheap and efficient larvicide. It is possible that wood tar derived from suction gas plants will be found to meet these requirements.

#### RECOMMENDATIONS.

With regard to the farming community, I do not think that any legislative measures (with one exception) are either practicable or desirable. The farmer as a rule is anxious to take steps to protect himself and his family from malaria. Living as he does far from his neighbours, neglect on his part does not affect the health of the community.

The exception noted above, however, refers to a class which is fairly entitled to protection. It is noticeable that farm assistants as a rule, even on farms where no expense has been spared as regards the homestead, are relegated to poor quarters, often an unscreened grass-roofed hut. These assistants are in the most cases young men from overseas or the Union, inexperienced as regards malaria, and especially liable therefore to infection. They should be provided at least with a mosquito-proof room. A hut can be rendered mosquito-proof at very little cost by means of a calico ceiling and a few strips of gauze.

The importance of conducting a mosquito survey of the country can hardly be exaggerated. Judging from analogy, it will probably be found that malaria is chiefly conveyed by only a few species of



anopheles. A study of the life history of these species will probably reveal a phase when they are most easily attacked.

As regards housing construction in the various districts under review, it is evident that the ideal house for Rhodesian conditions has not yet been designed. Architects and builders appear unable to divorce themselves from the European type of house which is intended to protect its inmates from blizzards and biting east winds.

The problem of designing a mosquito-proof, cool, well-ventilated, well-lighted, convenient and not costly house is not an easy one, but it is of such vital importance to the health and comfort of the community that attention should be concentrated upon it. A practical point of great importance is that the mosquito-proof kitchen should be detached from the rest of the house and connected with it by a cross-ventilated mosquito-proof passage with gauze door at each end. Mosquitoes endeavouring to enter the house by their usual route *via* the kitchen would be trapped in the passage and could be summarily dealt with.

All outside doors should open outwards, thus tending to prevent the entry of mosquitoes when the door is opened. An endeavour should be made, therefore, to evolve a design embodying the above desiderata and applicable to houses of various sizes, and the plans should be available to settlers and others desiring them.

The recommendations I have put forward may be conveniently summarised as follows:—

As regards towns and villages, the existing organisations should be galvanised into activity by legislative measures, and by the appointment of a sanitation officer to control anti-malarial work throughout the country.

As regards the farming community, mosquito gauze and framework should if possible be supplied at cost price, and, when necessary, on terms. Practical advice as to house construction and anti-malarial measures generally should be made freely available.

Farm assistants should be protected by law against unfair treatment in the matter of accommodation.

It will be seen that the above measures involve very little extra expenditure, the chief item of which would be the salary of the sanitation officer.

Since all anti-malarial measures depend upon a proper knowledge of the life history and habits of various anopheline mosquitoes, it is highly desirable that, when the financial condition of the country permits, an entomologist should be appointed for the purpose of carrying out research in this direction.

G. BARRATT,

Relieving Government Medical Officer.

18th November, 1923.



## PART III.

TABLE 1.—EUROPEAN BIRTHS REGISTERED.

	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	
	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Percentage of total births.	Totals Males and females.
Father and mother British	61.54	57.08	57.53	54.63	54.39	58.05	57.20	53.79	504
Father and mother Dutch	20.03	24.56	24.33	25.80	28.77	25.41	24.42	25.61	240
Father and mother Jewish	3.93	3.27	2.40	2.10	2.11	1.42	.55	.53	5
Father and mother Italian	.37	.58	.38	.80	.70	.33	.55	.64	6
Father and mother Greek	.25	.94	.38	.93	.58	.87	.88	1.81	17
Father and mother French	...	...	...	.13	...	...	.11	.11	1
Father and mother Belgian	...	...	...	...	...	.10	...	...	...
Father and mother Swedish	.12	.23	.25	...	...	.22	.11	.11	1
Father and mother Turkish	...	...	...	.13	...	.10	...	...	...
Father and mother Norwegian	...	.12	.12	...	...	.22	.11	...	...
Father and mother American	.37	...	...	...	.12	.22	...	.32	3
Father and mother Portuguese	...	.12	...	...	...	.10	...	...	...
Father and mother Roumanian	.37	.12	...	.26	...	.33	.11	.11	1
Father and mother Swiss	...	...	...	...	.35	...	...	...	...
Father and mother Russian	...	...	...	...	...	.65	.99	.43	4
Father and mother Austrian	.12	.12	...	.26	.12	...	...	...	...
Father and mother German	.12	.23	.38	.13	.23	...	.11	...	...
Father and mother Polish	...	...	...	...	...	.22	.11	.11	1
Father British, mother Dutch	6.63	6.78	6.72	8.33	7.72	6.46	8.47	7.79	73
Father British, mother French	...	...	.12	.26	.23	...	.33	.11	1
Father British, mother Jewish	...	...	...	...	...	.10	.11	.32	3
Father British, mother Norwegian	...	...	...	.26	...	.22	...	...	...
Father British, mother Russian	...	.23	...	.13	...	...	...	...	...
Father British, mother Danish	.12	...	...	...	...	...	.11	.11	1
Father British, mother Swedish	.12	...	...	...	...	...	...	...	...
Father British, mother American	.37	.12	...	...	.12	...	...	.32	3
Father British, mother Italian	...	...	...	...	...	...	...	.11	1
Father British, mother German	.49	.47	.88	.53	...	...	.11	.43	4
Father Polish, mother British	...	...	...	...	...	...	...	.11	1
Father Belgian, mother British	...	...	...	...	...	.10	...	...	...
Father Dutch, mother British	1.23	1.28	2.15	1.85	2.22	2.19	2.31	3.84	36
Father Dutch, mother German	...	...	...	...	...	.10	.11	...	...
Father Jewish, mother British	.25	.23	.12	.13	.12	.43	.22	.11	1
Father Jewish, mother Dutch	.12	...	.12	...	...	...	.11	...	...
Father Italian, mother British	.12	...	...	...	...	...	...	.20	2
Father Italian, mother Dutch	.12	...	...	.13	.12	.33	...	.20	2
Father Italian, mother Egyptian	.12	...	.12	...	...	...	...	...	...
Father Italian, mother Spanish	...	...	...	...	...	...	.11	...	...
Father Italian, mother Russian	...	.12	...	...	...	...	...	...	...
Father Greek, mother British	...	...	...	...	.12	...	...	...	...
Father Greek, mother Dutch	.25	.23	...	.13	.12	...	.11	.11	1
Father Greek, mother Roumanian	...	.12	.12	...	...	...	.11	...	...
Father Greek, mother Egyptian	.12	...	...	.13	...	...	.11	...	...
Father French, mother British	...	...	...	.26	...	...	.11	.11	1
Father Danish, mother British	...	.12	...	.13	.12	...	...	...	...
Father Serbian, mother German	...	...	...	...	...	.10	...	.11	1
Father Swiss, mother German	...	.12	...	...	...	...	...	...	...
Father Russian, mother British	.25	.12	.12	...	...	.10	.33	...	...
Father Russian, mother Dutch	.12	...	...	...	...	...	...	...	...
Father Russian, mother Austrian	...	...	...	.13	...	.10	...	...	...
Father Russian, mother German	.25	.12	...	...	...	...	...	...	...
Father Russian, mother Spanish	...	...	...	.13	...	...	...	...	...
Father Russian, mother Roumanian	...	...	...	...	...	...	.11	.11	1
Father Norwegian, mother British	...	...	.12	...	...	...	...	.11	1
Father Swedish, mother British	.12	...	.12	...	...	...	...	...	...
Father Swedish, mother Dutch	.12	.35	...	...	...	...	...	...	...
Father American, mother British	.49	.23	.12	...	...	...	...	...	...
Father American, mother Dutch	...	.23	...	...	.12	.10	...	...	...
Father American, mother Greek	.12	...	...	...	...	...	...	...	...
Father Austrian, mother British	.12	...	.12	...	...	...	...	...	...
Father Austrian, mother Russian	...	.12	.12	...	...	...	...	...	...
Father German, mother British	.25	.23	.38	.53	.23	...	.11	.43	4
Father German, mother Dutch	.37	.12	.25	.13	.23	.10	.33	.20	2
Father German, mother Jewish	...	.12	...	...	...	...	...	...	...
Father Roumanian, mother Jewish	...	...	...	...	...	.10	.11	.11	1
Father Jewish, mother German	...	...	...	...	...	...	.11	...	...
Father Roumanian, mother Russian	...	...	...	.13	...	.22	...	...	...
Father French, mother Belgian	...	...	...	...	.12	...	...	...	...
Father Portuguese, mother British	...	...	...	...	.12	.10	...	...	...
Illegitimate—mother of European parentage, paternal parentage unknown	.49	1.29	2.15	1.32	.94	1.09	1.10	1.50	14
Total births	815	855	789	756	855	913	909	...	937

TABLE 2.  
EUROPEAN BIRTHS, 1923.

District.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
Salisbury ...	30	29	25	21	25	25	20	26	27	31	23	22	304
Bulawayo ...	28	24	26	24	27	16	25	21	16	18	23	18	266
Umtali ...	12	6	7	5	12	9	5	10	2	4	7	10	89
Gwelo ...	2	4	3	6	4	6	9	4	6	9	2	8	63
Fort Victoria	2	10	1	2	4	5	3	2	1	3	...	1	34
Gatooma ...	3	4	6	1	2	2	3	4	2	5	...	...	32
Gwanda ...	...	...	...	2	...	...	1	...	1	...	1	...	5
Selukwe ...	1	3	1	2	3	3	3	2	5	...	1	1	25
Charter ...	4	2	3	1	1	2	2	3	4	1	1	1	25
Melsetter ...	3	4	3	1	1	4	2	...	2	4	2	2	28
Umvuma ...	2	2	3	3	4	6	...	5	...	3	4	3	35
Hartley ...	1	...	1	1	3	...	...	1	1	...	1	...	9
Que Que ...	2	2	3	2	1	2	2	...	3	4	1	...	22
Totals ...	90	90	82	71	87	80	75	78	70	82	66	66	937

TABLE 3.  
EUROPEAN DEATHS, 1923.

Age periods.	Males.	Females.	Totals.
0—1 ...	39	31	70
1—5 ...	20	11	31
5—15 ...	5	9	14
15—25 ...	19	5	24
25—35 ...	22	13	35
35—45 ...	37	13	50
45—55 ...	39	9	48
55—65 ...	35	10	45
65—75 ...	20	11	31
75—85 and over	6	7	13
Age unknown ..	2	...	2
All ages ...	244	119	363



TABLE 4.

## EUROPEAN BIRTHS AND DEATHS, 1923.

Month.	Births.	Deaths.	Ages of the dying.										
			0-1	1-5	5-15	15-25	25-35	35-45	45-55	55-65	65-75	75-85 and over	Age un- known
January ...	90	24	7	2	2	1	2	2	2	2	2	2	...
February ...	90	33	3	1	...	...	4	7	6	5	4	1	2
March ...	82	25	8	...	2	2	5	2	2	4	...	...	...
April ...	71	52	4	6	...	7	6	5	11	5	4	4	...
May ...	87	39	6	7	2	3	2	5	6	3	4	1	...
June ...	80	41	12	6	1	2	1	8	3	4	4	...	...
July ...	75	19	1	...	1	1	5	4	2	2	3	...	...
August ...	78	26	3	3	2	1	2	4	3	5	1	2	...
September ...	70	21	5	...	2	...	1	2	7	...	3	1	...
October ...	82	28	6	3	...	2	4	3	2	5	3	...	...
November ...	66	34	10	3	2	1	2	6	2	5	2	1	...
December ...	66	21	5	...	...	4	1	2	2	5	1	1	...
Total ...	937*	363	70	31	14	24	35	50	48	45	31	13	2
Per cent. of total ...	...	...	19.28	8.54	3.86	6.61	9.64	13.77	13.22	12.40	8.54	3.58	...

27.82 per cent. of total.

\* Illegitimate births 1.49 per cent. of total births.

TABLE 5.

TABLE SHOWING EUROPEAN ADMISSIONS TO HOSPITALS  
DURING 1923.

Name of hospital.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
Salisbury ...	103	90	92	111	97	99	74	76	77	89	83	81	1,072
Bulawayo ...	81	80	84	87	94	85	68	65	72	77	66	66	925
Umtali ...	50	68	60	62	56	37	32	22	17	25	18	16	463
Gwelo ...	18	27	27	23	26	13	20	13	11	12	14	14	218
Fort Victoria ...	16	9	8	4	9	7	3	4	10	11	8	9	98
Gatooma ...	14	23	31	24	37	18	28	16	24	17	11	19	262
Enkeldoorn ...	3	2	2	6	1	3	4	2	1	3	4	1	32
Gwanda ...	2	6	1	5	4	2	2	2	2	4	...	6	36
Shamva ...	18	13	7	18	18	13	11	2	6	8	8	3	125
Sinoia ...	7	5	7	5	11	9	6	2	4	8	9	...	73
Belingwe ...	1	1	...	...	...	...	...	...	...	2	1	1	6
Totals ...	313	324	319	345	353	286	248	204	224	256	222	216	3,310

TABLE 6.

TABLE SHOWING NATIVE ADMISSIONS TO HOSPITALS  
DURING 1923.

Name of hospital.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Totals
Salisbury ...	65	80	73	67	85	63	57	71	66	68	61	52	808
Bulawayo ...	55	50	61	57	67	46	48	53	52	61	60	72	682
Umtali ...	13	13	16	12	8	9	12	9	13	15	8	9	137
Gwelo ...	39	17	22	31	41	18	28	34	21	46	48	55	400
Fort Victoria	12	13	12	7	10	11	7	8	8	8	9	5	110
Gatooma ...	30	35	32	31	34	40	21	33	44	36	39	39	414
Enkeldoorn...	...	1	2	3	...	3	3	1	4	4	...	3	24
Gwanda ...	10	7	14	9	9	10	8	9	11	18	6	13	124
Shamva ...	16	14	12	14	18	19	16	14	22	19	18	20	202
Sinoia ...	4	10	8	5	14	5	9	5	7	8	3	4	82
Belingwe ...	2	4	1	2	2	3	3	3	1	5	1	5	32
Totals ...	246	244	253	238	288	227	212	240	249	288	253	277	3,015

TABLE 7.

## EUROPEAN DEATHS, 1923.

District.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Totals
Salisbury ...	5	11	10	8	11	11	8	4	6	8	9	6	97
Bulawayo ...	10	12	7	13	12	11	4	14	7	11	17	7	125
Umtali ...	4	3	2	8	7	5	1	4	1	1	...	2	38
Gwelo ...	1	1	...	4	2	4	1	...	1	2	1	2	19
Fort Victoria	2	...	1	1	1	4	1	1	2	1	...	2	16
Gatooma ...	...	3	1	7	3	2	...	1	2	1	2	1	23
Gwanda ...	...	1	...	...	1	...	...	...	...	...	1	1	4
Selukwe ...	...	1	...	1	...	...	1	...	...	2	2	...	7
Charter ...	1	...	...	5	2	2	...	1	1	...	...	...	12
Melsetter ...	...	...	1	3	...	...	1	...	...	1	1	...	7
Umvuma ...	...	1	...	...	...	1	...	1	...	...	1	...	4
Hartley ...	1	...	1	...	...	1	...	...	...	...	...	...	3
Que Que ...	...	...	2	2	...	...	2	...	1	1	...	...	8
Totals ...	24	33	25	52	39	41	19	26	21	28	34	21	363



TABLE 8.

Table showing monthly admissions to hospitals during 1923 from malaria, blackwater fever, dysentery, pneumonia, typhoid fever and scurvy.

## EUROPEANS.

Disease	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Malaria	94	133	127	167	175	91	59	37	14	23	21	12	953
Blackwater fever	4	3	5	12	9	8	7	6	2	5	2	...	63
Dysentery	5	...	3	1	...	3	...	1	4	3	6	3	29
Pneumonia	4	5	2	...	1	11	5	6	4	3	...	2	43
Typhoid	7	11	11	1	6	3	1	...	2	1	3	5	51
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...

## NATIVES.

Malaria	28	51	62	57	62	23	12	7	12	9	12	24	359
Blackwater fever	...	...	...	1	...	...	...	...	...	...	...	...	1
Dysentery	3	3	6	1	3	4	3	2	4	3	7	2	41
Pneumonia	17	14	18	8	13	9	12	24	21	28	21	11	196
Typhoid	3	1	...	1	...	...	1	1	1	...	1	1	10
Scurvy	18	9	5	6	2	4	4	2	3	3	4	3	63

TABLE 9.

Cases, with mortality rate per cent., admitted to hospitals during 1923, as compared with 1922.

Name of hospital		1922			1923.		
		Cases	Deaths	Mortality rate per cent.	Cases	Deaths	Mortality rate per cent.
Salisbury	White	982	39	3.95	1,072	32	2.99
	Native	853	112	13.13	808	70	8.66
Umtali	White	331	10	3.02	463	14	3.02
	Native	147	14	9.52	137	13	9.49
Gwelo	White	183	10	5.46	218	5	2.29
	Native	389	40	10.28	400	41	10.25
Fort Victoria	White	112	7	6.25	98	4	4.08
	Native	116	8	6.90	110	10	9.09
Gwanda	White	13	1	7.69	36	1	2.78
	Native	122	16	13.11	124	9	7.26
Enkeldoorn	White	22	...	...	32	3	9.37
	Native	24	5	20.83	24	1	4.17
Gatooma	White	193	6	3.11	262	14	5.34
	Native	428	73	17.06	414	75	18.12
Bulawayo	White	911	35	3.84	925	36	3.89
	Native	770	97	12.60	682	59	8.65
Shamva	White	148	10	6.76	125	6	4.80
	Native	52	9	17.31	202	26	12.87
Sinoia	White	72	4	5.56	73	2	2.74
	Native	112	9	8.04	82	13	15.85
Belingwe	White	9	...	...	6	...	...
	Native	40	3	7.50	32	2	6.25
Totals	White	2,976	122	4.10	3,310	117	3.53
	Native	3,053	386	12.61	3,015	319	10.58

TABLE 10.

Cases, with mortality rate per cent., of malarial fever admitted to hospitals in 1923, as compared with 1922.

Name of hospital.		1922			1923		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	105	...	...	175	...	...
	Native	71	3	4.23	129	...	...
Umtali	White	134	...	...	292	1	0.34
	Native	6	...	...	27	1	3.70
Gwelo	White	21	...	...	71	2	2.82
	Native	33	...	...	53	5	9.43
Victoria	White	28	...	...	21	...	...
	Native	8	...	...	9	...	...
Gwanda	White	4	...	...	10	...	...
	Native	11	...	...	11	...	...
Enkeldoorn	White	2	...	...	6	1	16.67
	Native	...	...	...	2	...	...
Gatooma	White	33	...	...	106	3	2.83
	Native	9	...	...	30	5	16.67
Bulawayo	White	64	...	...	170	6	3.53
	Native	19	...	...	56	2	3.57
Shamva	White	76	3	3.95	70	...	...
	Native	4	...	...	28	1	3.57
Sinoia	White	29	1	3.45	28	1	3.57
	Native	7	...	...	6	...	...
Belingwe	White	4	...	...	4	...	...
	Native	...	...	...	8	...	...
Totals	White	500	4	0.80	953	14	1.47
	Native	168	3	1.79	359	14	3.90

TABLE 11.

Cases, with mortality rate per cent., of hæmoglobinuric fever (blackwater) admitted to hospitals in 1923, as compared with 1922.

Name of hospital.		1922			1923		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	7	2	28.57	12	5	41.67
	Native	...	...	...	...	...	...
Umtali	White	11	4	36.37	15	5	33.33
	Native	...	...	...	...	...	...
Gwelo	White	...	...	...	1	...	...
	Native	...	...	...	...	...	...
Victoria	White	2	1	50.00	4	...	...
	Native	...	...	...	...	...	...
Gwanda	White	...	...	...	1	...	...
	Native	...	...	...	...	...	...
Enkeldoorn	White	...	...	...	1	1	100.00
	Native	...	...	...	...	...	...
Gatooma	White	3	...	...	10	...	...
	Native	...	...	...	1	...	...
Bulawayo	White	1	1	100.00	6	1	16.67
	Native	...	...	...	...	...	...
Shamva	White	21	5	23.81	12	2	16.67
	Native	...	...	...	...	...	...
Sinoia	White	3	1	33.33	1	...	...
	Native	...	...	...	...	...	...
Belingwe	White	1	...	...	...	...	...
	Native	...	...	...	...	...	...
Totals	White	49	14	28.57	63	14	22.22
	Native	...	...	...	1	...	...



TABLE 12.

Cases, with mortality rate per cent., of pneumonia admitted to hospitals during 1923, as compared with 1922.

Name of hospital.		1922.			1923.		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	23	4	17.30	5	...	...
	Native	153	43	28.10	82	22	26.83
Umtali ...	White	8	...	...	7	...	...
	Native	22	7	31.82	6	...	...
Gwelo ...	White	6	3	50.00	2	...	...
	Native	19	8	42.11	14	8	57.14
Victoria	White	5	3	60.00	2	...	...
	Native	4	2	50.00	8	5	62.50
Gwanda	White	...	...	...	...	...	...
	Native	7	3	42.86	3	2	66.67
Enkeldoorn	White	1	...	...	4	1	25.00
	Native	4	4	100.00	...	...	...
Gatooma	White	11	3	27.27	3	...	...
	Native	63	23	36.51	42	13	30.95
Bulawayo	White	12	5	41.67	17	2	11.76
	Native	46	19	41.30	24	10	41.67
Shamva	White	3	1	33.33	2	1	50.00
	Native	4	3	75.00	9	7	77.78
Sinoia ...	White	3	...	...	1	1	100.00
	Native	10	3	30.00	6	2	33.33
Belingwe	White	...	...	...	...	...	...
	Native	1	...	...	2	...	...
Totals	White	72	19	26.39	43	5	11.63
	Native	333	115	34.53	196	69	35.20

TABLE 13.

Cases, with mortality rate per cent., of dysentery admitted to hospitals during 1923, as compared with 1922.

Name of hospital.		1922.			1923.		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	19	1	5.26	6	...	...
	Native	13	2	15.38	7	3	42.86
Umtali ...	White	10	1	10.00	2	1	50.00
	Native	1	...	...	4	1	25.00
Gwelo ...	White	6	1	16.67	1	...	...
	Native	4	...	...	7	2	28.57
Victoria	White	9	...	...	6	...	...
	Native	5	1	20.00	1	...	...
Gwanda	White	1	1	100.00	...	...	...
	Native	1	...	...	...	...	...
Enkeldoorn	White	...	...	...	...	...	...
	Native	1	...	...	...	...	...
Gatooma	White	2	...	...	2	...	...
	Native	3	1	33.33	4	2	50.00
Bulawayo	White	13	...	...	6	1	16.67
	Native	9	4	44.44	6	1	16.67
Shamva	White	1	...	...	2	...	...
	Native	4	1	25.00	9	1	11.11
Sinoia ...	White	4	...	...	4	...	...
	Native	3	1	33.33	2	1	50.00
Belingwe	White	2	...	...	...	...	...
	Native	...	...	...	1	...	...
Totals	White	67	4	5.97	29	2	6.90
	Native	44	10	22.73	41	11	26.83

TABLE 14.

Cases, with mortality rate per cent., of typhoid fever admitted to hospitals during 1923, as compared with 1922.

Name of hospital.		1922.			1923.		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	9	1	11.11	7	1	14.29
	Native	...	...	...	3	1	33.33
Umtali	White	5	...	...	3	...	...
	Native	...	...	...	...	...	...
Gwelo	White	9	1	11.11	5	...	...
	Native	3	...	...	...	...	...
Victoria	White	1	...	...	1	1	100.00
	Native	...	...	...	...	...	...
Gwanda	White	...	...	...	1	...	...
	Native	...	...	...	...	...	...
Enkeldoorn	White	...	...	...	...	...	...
	Native	...	...	...	7	2	28.57
Gatooma	White	...	...	...	...	...	...
	Native	...	...	...	...	...	...
Bulawayo	White	12	3	25.00	26	3	11.52
	Native	7	4	57.14	7	3	42.86
Shamva	White	...	...	...	1	...	...
	Native	...	...	...	...	...	...
Sinoia	White	...	...	...	...	...	...
	Native	...	...	...	...	...	...
Belingwe	White	...	...	...	...	...	...
	Native	...	...	...	...	...	...
Totals	White	36	5	13.86	51	7	13.73
	Native	10	4	40.00	10	4	40.00

TABLE 15.

Cases, with mortality rate per cent., of scurvy admitted to hospitals during 1923, as compared with 1922.

Name of hospital.		1922.			1923.		
		Cases.	Deaths.	Mortality rate per cent.	Cases.	Deaths.	Mortality rate per cent.
Salisbury	White	...	...	...	...	...	...
	Native	11	...	...	...	...	...
Umtali	White	...	...	...	...	...	...
	Native	2	1	50.00	1	...	...
Gwelo	White	...	...	...	...	...	...
	Native	29	1	3.45	21	1	4.76
Victoria	White	...	...	...	...	...	...
	Native	...	...	...	...	...	...
Gwanda	White	...	...	...	...	...	...
	Native	28	2	7.14	1	...	...
Enkeldoorn	White	1	...	...	...	...	...
	Native	...	...	...	...	...	...
Gatooma	White	...	...	...	...	...	...
	Native	60	8	13.33	28	3	10.71
Bulawayo	White	...	...	...	...	...	...
	Native	94	7	7.45	8	2	25.00
Shamva	White	...	...	...	...	...	...
	Native	...	...	...	...	...	...
Sinoia	White	...	...	...	...	...	...
	Native	1	...	...	3	...	...
Belingwe	White	...	...	...	...	...	...
	Native	7	...	...	1	...	...
Totals	White	1	...	...	63	6	9.52
	Native	232	19	8.19	...	...	...



TABLE 16.—RETURN OF DEATHS REGISTERED DURING THE YEAR 1923.

Name of disease.	EUROPEANS														NATIVES								Grand totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	0-1		1-5		5-15		15-25		25-35		35-45		45-55		55-65		65-75		75-85		Age unknown			Totals.		Under 5 years		Over 5 years		Totals.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		M	F	M	F	M	F	M	F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Name of disease.	EUROPEANS																NATIVES						Grand totals				
	0-1		1-5		5-15		15-25		25-35		35-45		45-55		55-65		65-75		75-85		Age unknown			Totals.			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		M	F		
Brought forward	18	18	19	9	4	8	14	5	15	12	28	6	28	5	25	6	17	11	3	2	2	...	173	82	19 419 101		
104. Diarrhoea and enteritis (under two years) ...	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2 5		
105. Diarrhoea and enteritis (two years and over) ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4 ...		
108. Appendicitis and typhilitis ...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2 ...		
109. Hernia, intestinal obstruction ...	1	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	8 1		
V. Diseases of the Digestive System.																											
110. Other diseases of the intestines ...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 ...		
113. Cirrhosis of the liver ...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	1	...	...	...	...	...	...	...	...	11 2		
115. Other diseases of the liver ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3 1		
116. Diseases of the spleen ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
117. Simple peritonitis (non-puerperal) ...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...		
VI. Non-Veneral Diseases of the Genito-Urinary System and Anæmia.																											
119. Acute nephritis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7 2		
120. Bright's disease ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1 1		
122. Other diseases of the kidneys and annexa ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
129. Uterine tumour (non-cancerous) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2 ...		
131. Cysts and other tumours of the ovary ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
VII. The Puerperal State.																											
134. Accidents of pregnancy ...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2		
137. Puerperal septicæmia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1		
VIII. Diseases of the Skin and of the Cellular Tissue.																											
142. Gangrene ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
144. Acute abscess ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6 ...		
145. Other diseases of the skin and annexa ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 ...		
IX. Diseases of the Bones and of the Organs of Locomotion.																											
147. Diseases of the joints (tuberculosis and rheumatism excepted) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Carried forward ...	22	23	20	9	4	9	17	5	17	13	32	9	31	7	27	9	17	11	4	4	2	...	193	99	18 6 270 16 288 22 481 121		





TABLE 17.

## CLASSIFICATION OF DEATHS (EUROPEANS), 1923.

Deaths classified according to the international classification of causes of sickness and death.

Classifi- cation No.	Disease.	No. of Deaths, 1923.
1	Typhoid fever	10
3	Relapsing fever	1
4	Malaria	49
4a	Blackwater fever	36
8	Whooping cough	3
9	Diphtheria and croup	2
10	Influenza	11
14	Dysentery	4
20	Purulent infection and septicæmia	1
28	Tuberculosis of the lungs	17
30	Tuberculous meningitis	1
39	Cancer and other malignant tumours of the buccal cavity	2
40	Cancer and other malignant tumours of the stomach, liver	8
41	Cancer and other malignant tumours of the peritoneum, intestines, rectum	3
42	Cancer and other malignant tumours of the female genital organs	3
43	Cancer and other malignant tumours of the breast	1
45	Cancer and other malignant tumours of other organs or of organs not specified	6
47	Acute articular rheumatism	1
48	Chronic rheumatism and gout	1
50	Diabetes	1
53	Leuchæmia	1
54	Anæmia, chlorosis	3
56	Alcoholism (acute or chronic)	7
61	Simple meningitis	1
64	Cerebral hæmorrhage	7
66	Paralysis without specified cause	1
67	General paralysis of the insane	2
69	Epilepsy	2
71	Convulsions of infants	7
74	Other diseases of the nervous system	2
78	Acute endocarditis	1
79	Organic diseases of the heart	12
80	Angina pectoris	1
81	Diseases of the arteries, atheroma, aneurysm, etc.	2
82	Embolism and thrombosis	2
87	Diseases of the larynx	3
89	Acute bronchitis	9
92	Pneumonia	25
93	Pleurisy	1
98	Other diseases of the respiratory system (tuberculosis excepted)	1
102	Ulcer of the stomach	3
103	Other diseases of the stomach	1
104	Diarrhœa and enteritis (under 2 years)	7
105	Diarrhœa and enteritis (2 years and over)	1
108	Appendicitis and typhilitis	2
109	Hernia, intestinal obstruction	5
110	Other diseases of the intestines	1
113	Cirrhosis of the liver	5
115	Other diseases of the liver	1
117	Simple peritonitis (non-puerperal)	1
119	Acute nephritis	5
120	Bright's disease	2
129	Uterine tumour (non-cancerous)	2
134	Accidents of pregnancy	1
137	Puerperal septicæmia	1
142	Gangrene	1
144	Acute abscess	1
145	Other diseases of the skin and annæa	1
150	Congenital malformations (still births not included)	2
151	Congenital debility, icterus and sclerema	20
152	Other causes peculiar to early infancy	1
154	Senility	6
155	Suicide by poison	2
159	Suicide by firearms	5
160	Suicide by cutting or piercing instruments	1
165	Other acute poisonings	1
166	Conflagration	1
167	Burns (conflagration excepted)	1
169	Accidental drowning	5
170	Traumatism by firearms	2
172	Traumatism by fall	3
173	Traumatism in mines and quarries	1
175	Traumatism by other crushing (vehicles, railways, landslides, etc.)	1
180	Lightning	1
181	Electricity (lightning excepted)	1
186	Other external violence	1
188	Sudden death	2
189	Cause of death not specified or ill-defined	14
Total		363

TABLE 18.

# CLASSIFICATION OF DEATHS (NATIVES AND COLOURED), 1923.

Deaths classified according to the international classification of causes  
of sickness and death.

Classifi- cation No.	Disease.	No. of Deaths, 1923.
1	Typhoid fever	4
4	Malaria	12
4a	Blackwater fever	4
8	Whooping cough	1
10	Influenza	10
14	Dysentery	9
20	Purulent infection and septicæmia	1
24	Tetanus	2
26	Pellagra	1
28	Tuberculosis of the lungs	46
29	Acute miliary tuberculosis	1
30	Tuberculous meningitis	2
31	Abdominal tuberculosis	5
33	White swellings	1
37	Syphilis	5
40	Cancer and other malignant tumours of the stomach, liver	1
41	Cancer and other malignant tumours of the peritoneum, intestines, rectum	1
45	Cancer and other malignant tumours of other organs or of organs not specified	5
49	Scurvy	8
53	Leuchæmia	2
55	Other general diseases	1
60	Encephalitis	2
61	Simple meningitis	8
61c	Meningitis, other forms	1
63	Other diseases of the spinal cord	2
64	Cerebral hæmorrhage	3
68	Other forms of mental alienation	22
69	Epilepsy	6
71	Convulsions of infants	3
77	Pericarditis	1
78	Acute endocarditis	2
79	Organic diseases of the heart	4
89	Acute bronchitis	3
90	Chronic bronchitis	2
91	Broncho-pneumonia	8
92	Pneumonia	71
93	Pleurisy	2
98	Other diseases of the respiratory system (tuberculosis excepted)	1
101	Diseases of the œsophagus	1
103	Other diseases of the stomach	2
105	Diarrhœa and enteritis (2 years and over)	3
109	Hernia, intestinal obstruction	4
113	Cirrhosis of the liver	8
115	Other diseases of the liver	3
116	Diseases of the spleen	5
117	Simple peritonitis (non-puerperal)	6
119	Acute nephritis	4
122	Other diseases of the kidneys and annexa	2
131	Cysts and other tumours of the ovary	1
134	Accidents of pregnancy	1
142	Gangrene	5
144	Acute abscess	1
147	Diseases of the joints (tuberculosis and rheumatism excepted)	1
151	Congenital debility, icterus and sclerema	3
152	Other causes peculiar to early infancy	2
154	Senility	4
157	Suicide by hanging or strangulation	1
165	Other acute poisonings	1
166	Conflagration	5
167	Burns (conflagration excepted)	1
171	Traumatism by cutting or piercing instruments	1
175	Traumatism by other crushing (vehicles, railways, landslides, etc.)	2
185	Fractures, cause not specified	9
186	Other external violence	5
186a	Execution	8
187	Ill-defined organic disease	1
189	Cause of death not specified or ill-defined	4
Total		357



Included in the foregoing are the following Chinese, Indian and Coloured deaths, classified as follows :—

Classification No.	Disease.	No. of Deaths, 1923.		
		Chinese.	Indian.	Coloured.
4	Malaria ... ..	—	—	1
4a	Blackwater fever ... ..	—	1	3
14	Dysentery ... ..	—	—	2
20	Purulent infection and septicaemia ... ..	—	—	1
28	Tuberculosis of the lungs ... ..	—	—	6
30	Tuberculous meningitis ... ..	—	—	1
37	Syphilis ... ..	—	—	1
41	Cancer and other malignant tumours of the peritoneum, intestines, rectum ... ..	—	1	—
45	Cancer and other malignant tumours of other organs or of organs not specified ... ..	—	1	—
53	Leuchæmia ... ..	—	—	1
54	Anæmia, chlorosis ... ..	—	—	1
61	Simple meningitis ... ..	—	—	1
69	Epilepsy ... ..	—	1	—
71	Convulsions of infants ... ..	—	1	2
89	Acute bronchitis ... ..	—	—	1
90	Chronic bronchitis ... ..	—	2	—
91	Broncho-pneumonia ... ..	—	2	—
92	Pneumonia ... ..	—	1	3
101	Diseases of the œsophagus ... ..	—	—	1
105	Diarrhœa and enteritis (2 years and over) ... ..	—	—	1
109	Hernia, intestinal obstruction ... ..	—	—	1
142	Gangrene ... ..	—	1	—
151	Congenital debility, icterus and sclerema ... ..	—	2	—
152	Other causes peculiar to early infancy ... ..	—	—	2
157	Suicide by hanging or strangulation ... ..	—	—	1
165	Other acute poisonings ... ..	—	—	1
175	Traumatism by other crushing (vehicles, railways, landslides, etc.) ... ..	—	—	1
185	Fractures, cause not specified ... ..	—	1	1
186	Other external violence ... ..	1	—	—
187	Ill-defined organic diseases ... ..	—	—	1
189	Cause of death not specified or ill-defined ... ..	—	—	1
	Totals ... ..	1	14	35

TABLE 19.

Return of diseases and deaths (in-patients) in all Government hospitals and Memorial Hospital, Bulawayo, for the year 1923.

## EUROPEANS.

Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
INFECTIVE DISEASES.					
Diphtheria	...	2	...	2	...
Dysentery—Amoebic	1	27	2	28	...
Bacillary	...	5	...	5	...
Enteric	6	51	7	57	7
Influenza	4	63	...	67	...
Kala azar	...	1	...	1	...
Malaria—(a) tertian	6	277	2	283	3
(c) æstivo-autumnal	7	648	12	655	1
(d) chronic	...	28	...	28	1
(e) blackwater	...	63	14	63	...
Malta fever	...	12	...	12	3
Pneumonia	...	43	5	43	2
Relapsing fever	...	1	...	1	...
Rheumatic fever	1	21	...	22	1
Septicæmia	...	2	...	2	...
Syphilis—(a) primary	...	2	...	2	...
(c) inherited	...	1	...	1	1
Tetanus	...	1	...	1	...
Tuberculosis	2	32	9	34	5
Whooping cough	...	1	...	1	...
Other infective diseases	...	1	...	1	...
INTOXICATIONS.					
Alcoholism	1	13	2	14	1
GENERAL DISEASES.					
Anæmia	...	20	...	20	...
Diabetes	1	2	...	3	...
Exophthalmic goitre	...	5	...	5	1
Gout	...	2	...	2	1
Leucocythæmia	...	1	...	1	...
Myxœdema	...	1	...	1	...
Other general diseases	3	24	...	27	1
LOCAL DISEASES.					
Diseases of the nervous system—					
Sub-section 1—					
Neuritis	1	31	1	32	4
Meningitis	...	2	1	2	...
Abscess of brain	...	2	...	2	...
Congestion of brain	...	2	...	2	...
Sub-section 2—					
Apoplexy	2	4	4	6	...
Paralysis	4	4	2	8	2
Epilepsy	...	8	1	8	1
Neuralgia	...	11	...	11	...
Hysteria	...	10	...	10	...
Sub-section 3—mental diseases—					
Melancholia	...	2	...	2	...
Dementia	...	6	...	6	1
Delusional insanity	...	1	...	1	...
Other diseases of the nervous system	...	10	...	10	3
Diseases of the eye—					
Conjunctivitis	...	37	...	37	2
Keratitis	...	12	...	12	1
Iritis	...	6	...	6	...
Cataract	1	2	...	3	1
Other eye diseases	1	2	...	3	...
Diseases of the ear—					
Inflammation	...	12	...	12	...
Other diseases	...	9	...	9	...
Diseases of the nose					
	...	2	...	2	...
Carried forward	41	1,525	61	1,566	45



Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
Brought forward	41	1,525	61	1,566	45
Diseases of the circulatory system—					
Pericarditis	...	6	...	6	...
Endocarditis	...	5	1	5	...
Valvular mitral	1	1	...	2	...
Aortic	...	2	1	2	...
Arterial sclerosis	...	2	1	2	...
Other circulatory diseases	1	17	4	18	...
Diseases of the respiratory system—					
Laryngitis	...	7	1	7	...
Bronchitis	1	37	3	38	...
Broncho-pneumonia	...	3	...	3	...
Abscess of lung	...	1	1	1	...
Pleurisy	...	14	...	14	...
Empyema	1	8	...	9	...
Other respiratory diseases	...	23	...	23	...
Diseases of the digestive system—					
Stomatitis	...	4	...	4	...
Caries of teeth	...	15	...	15	...
Sore throat	...	8	1	8	...
Inflammation of tonsils	1	136	...	137	3
Gastritis	...	30	1	30	1
Ulceration of stomach	...	8	2	8	...
Hæmatemesis	...	3	...	3	1
Dilatation of stomach	1	...	...	1	...
Stricture of stomach	...	4	1	4	...
Dyspepsia	...	9	...	9	...
Enteritis	1	14	3	15	...
Appendicitis	13	160	4	173	8
Colitis	...	10	...	10	...
Ulceration of intestines	1	4	1	5	...
Hernia	1	28	...	29	1
Diarrhoea	1	29	...	30	...
Constipation	1	19	...	20	1
Colic	1	14	...	15	...
Hæmorrhoids	1	31	...	32	1
Hepatitis—acute	...	12	...	12	...
Abscess of liver	...	1	1	1	...
Cirrhosis	...	7	2	7	1
Jaundice	...	6	...	6	1
Peritonitis	1	7	3	8	2
Ascites	...	6	...	6	...
Gallstones	4	25	1	29	...
Other diseases of digestive system	1	30	3	31	...
Diseases of the lymphatic system—					
Splenitis	...	3	...	3	...
Inflammation of lymphatic gland	...	5	...	5	...
Other diseases of lymphatic gland	...	1	...	1	...
Diseases of the urinary system—					
Acute nephritis	...	8	1	8	...
Bright's disease	...	9	3	9	...
Pyelitis	...	4	...	4	...
Calculus	1	5	...	6	...
Renal colic	1	5	...	6	1
Cystitis	...	14	...	14	...
Vesical calculus	...	1	...	1	...
Other diseases of urinary system	1	4	...	5	...
Diseases of the generative system—					
Male organs—					
Urethritis	...	6	...	6	...
Stricture	...	12	...	12	...
Condyloma	...	1	...	1	...
Hydrocele	...	2	...	2	...
Orchitis	...	1	...	1	...
Other diseases of male organs	...	4	...	4	...
Female organs—					
Ovaritis	...	4	...	4	...
Ovarian cyst	1	5	...	6	...
Endometritis	...	61	...	61	1
Displacement of uterus	2	49	...	51	2
Vaginitis	...	1	...	1	...
Amenorrhœa	...	3	...	3	...
Menorrhagia	1	2	...	3	...
Leucorrhœa	...	2	...	2	...
Carried forward	80	2,483	100	2,563	67

Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
Brought forward	80	2,483	100	2,563	67
Diseases of the generative system (continued)—					
Female organs (continued)—					
Abortion	1	28	1	29	1
Delayed labour	...	2	...	2	...
Retained placenta	...	10	...	10	...
Premature birth	1	...	...	1	...
Puerperal septicaemia	...	1	...	1	...
Mastitis	...	1	...	1	...
Abscess of breast	...	3	...	3	1
Other diseases of female organs	1	27	1	28	1
Confinements	...	20	...	20	1
Diseases of organs of locomotion—					
Osteitis	2	4	...	6	...
Arthritis	2	6	...	8	...
Spondylitis	...	4	...	4	...
Bursitis	1	...	...	1	...
Other diseases of locomotion	1	6	...	7	1
Diseases of connective tissue—					
Cellulitis	1	24	...	25	2
Abscess	1	44	...	45	1
Diseases of the skin—					
Urticaria	...	1	...	1	...
Eczema	1	6	...	7	...
Boil	1	5	...	6	...
Carbuncle	1	6	...	7	...
Herpes	...	5	...	5	...
Acne	...	5	...	5	...
Ulcers	1	2	...	3	...
Other skin diseases	...	5	...	5	...
Injuries—general	2	67	1	69	5
local	9	366	...	375	12
Surgical operations	...	...	...	(1,013)	...
Tumours	4	33	10	37	12
Malformations	1	2	...	3	...
Poisons	...	5	1	5	...
Snake bite	...	1	...	1	...
Parasites—					
Trematoda (flukes)	...	1	...	1	...
Cestoda—Taenia solium	...	4	...	4	...
Nematoda—Ascaris	...	1	...	1	...
Filariasis	...	1	...	1	...
Insecta—Bilharzia	...	11	...	11	...
Hydatids	1	...	...	1	...
Not otherwise classified	...	93	...	93	...
Gun-shot wounds	2	5	1	7	1
Senility	...	4	...	4	...
Not diagnosed	...	16	...	16	...
Spirilla fever	...	1	1	1	...
Suicide (cut throat)	...	1	1	1	...
Totals	114	3,310	117	3,424	95



TABLE 20.

Return of diseases and deaths (in-patients) in all Government hospitals and Memorial Hospital, Bulawayo, for the year 1923.

## NATIVES.

Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
INFECTIVE DISEASES.					
Cerebro-spinal fever	...	1	1	1	...
Dysentery—amoebic	3	37	10	40	...
bacillary	...	4	1	4	...
Endocarditis—infected	...	1	...	1	...
Enteric	...	10	4	10	...
Gonorrhoea	...	12	...	12	...
Influenza	4	131	8	135	8
Leprosy—(a) nodular	...	2	...	2	...
(b) anæsthetic	...	1	...	1	...
Malaria—(a) tertian	1	70	6	71	...
(c) æstivo-autumnal	6	280	8	286	6
(d) chronic	...	5	...	5	1
(e) blackwater	...	1	...	1	...
Pneumonia	8	196	69	204	6
Rheumatic fever	1	24	...	25	2
Septicæmia	...	1	1	1	...
Trypanosomiasis (sleeping sickness)	...	1	...	1	1
Syphilis—(a) primary	5	26	...	31	5
(b) secondary	3	62	4	65	5
(c) inherited	...	3	...	3	1
Tetanus	...	1	1	1	...
Tuberculosis	10	110	70	120	16
GENERAL DISEASES.					
Anæmia	4	33	1	37	1
Purpura	...	5	2	5	2
Scurvy	22	63	6	85	7
Other general diseases	3	24	1	27	2
LOCAL DISEASES.					
Diseases of the nervous system—					
Sub-section 1—					
Neuritis	3	33	...	36	5
Meningitis	2	13	10	15	1
Myelitis	...	4	2	4	...
Encephalitis	...	2	1	2	...
Abscess of brain	...	3	2	3	...
Sub-section 2—					
Apoplexy	...	6	5	6	...
Paralysis	2	7	1	9	1
Chorea	1	2	...	3	...
Epilepsy	4	20	1	24	2
Neuralgia	1	6	...	7	...
Hysteria	...	3	...	3	...
Sub-section 3—mental diseases—					
Melancholia	...	1	...	1	...
Dementia	...	2	...	2	...
Delusional insanity	...	2	...	2	...
Other diseases of the nervous system	...	3	...	3	...
Diseases of the eye—					
Conjunctivitis	1	42	...	43	...
Keratitis	...	10	...	10	...
Ulceration of cornea	2	29	...	31	2
Iritis	...	4	...	4	...
Cataract	...	3	...	3	...
Other eye diseases	1	8	...	9	...
Diseases of the ear—					
Inflammation	...	5	...	5	2
Other diseases	1	5	...	6	...
Diseases of the nose					
Pericarditis	...	2	...	2	1
Diseases of the circulatory system—					
Pericarditis	...	3	3	3	...
Endocarditis	...	5	3	5	1
Carried forward	88	1,327	221	1,415	78

Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
Brought forward	88	1,327	221	1,415	78
Diseases of the circulatory system (continued)—					
Valvular mitral	...	10	3	10	...
Aortic	...	1	1	1	...
Arterial sclerosis	...	1	1	1	...
Aneurism	...	1	1	1	...
Other diseases of the circulatory system	1	6	1	7	1
Diseases of the respiratory system—					
Laryngitis	...	7	...	7	...
Bronchitis	...	56	...	56	4
Broncho-pneumonia	...	2	...	2	...
Abscess of lung	...	2	1	2	...
Gangrene of lung	...	1	1	1	...
Pleurisy	...	10	1	10	...
Empyema	...	4	...	4	...
Diseases of the digestive system—					
Stomatitis	...	2	...	2	1
Caries of teeth	1	3	...	4	...
Sore throat	...	9	...	9	1
Inflammation of tonsils	...	29	...	29	1
Gastritis	...	9	...	9	...
Ulceration of stomach	...	1	1	1	...
Dilatation of stomach	...	2	2	2	...
Stricture of stomach	...	1	1	1	...
Dyspepsia	...	3	...	3	...
Enteritis	1	8	3	9	...
Appendicitis	4	7	1	11	1
Colitis	...	5	...	5	1
Ulceration of intestines	...	3	3	3	...
Hernia	1	11	...	12	1
Diarrhoea	...	15	...	15	1
Constipation	...	15	...	15	1
Colic	...	3	...	3	...
Hæmorrhoids	1	1	...	2	...
Hepatitis—acute	...	2	1	2	1
Abscess	...	2	1	2	...
Cirrhosis	...	7	6	7	...
Peritonitis	1	10	7	11	...
Ascites	...	12	5	12	3
Other diseases of digestive system	1	2	1	3	...
Diseases of the lymphatic system—					
Splenitis	...	9	4	9	1
Inflammation of lymphatic gland	...	7	...	7	...
Suppuration of lymphatic gland	...	10	1	10	...
Lymphangitis	...	47	...	47	3
Diseases of the urinary system—					
Acute nephritis	...	5	4	5	...
Bright's disease	...	6	...	6	...
Pyelitis	...	2	1	2	...
Calculus	...	2	...	2	...
Cystitis	2	3	1	5	1
Suppression	...	1	...	1	...
Hæmaturia	...	1	...	1	...
Other diseases of urinary system	...	2	1	2	...
Diseases of the generative system—					
Male organs—					
Urethritis	...	5	...	5	3
Gleet	...	1	...	1	...
Stricture	...	3	...	3	...
Hydrocele	...	4	...	4	...
Orchitis	...	9	...	9	1
Female organs—					
Ovaritis	...	1	...	1	...
Endometritis	1	2	...	3	...
Displacement of uterus	...	2	...	2	...
Vaginitis	...	2	...	2	...
Amenorrhœa	...	1	...	1	...
Menorrhagia	...	1	...	1	...
Leucorrhœa	...	1	...	1	...
Abortion	...	6	...	6	...
Delayed labour	...	3	...	3	...
Retained placenta	...	6	1	6	...
Premature birth	...	3	...	3	...
Mastitis	...	4	...	4	...
Carried forward	102	1,739	276	1,847	104



Diseases.	Remaining in hospital at end of 1922.	Yearly total.		Total cases treated.	Remaining in hospital at end of 1923.
		Admis- sions.	Deaths.		
Brought forward	102	1,739	276	1,841	104
Diseases of the generative system (continued)—					
Female organs (continued)—					
Abscess of breast	...	1	...	1	...
Other diseases of female organs	...	2	1	2	...
Confinements	...	2	...	2	...
Diseases of organs of locomotion—					
Osteitis	2	6	...	8	2
Arthritis	1	14	1	15	1
Spondylitis	...	3	...	3	1
Bursitis	2	4	...	6	...
Other diseases of organs of locomotion	...	4	...	4	...
Diseases of connective tissue—					
Cellulitis	2	65	2	67	2
Abscess	2	70	...	72	5
Diseases of the skin—					
Eczema	1	8	...	9	...
Boil	...	2	...	2	...
Psoriasis	...	1	...	1	...
Oriental sore	3	9	...	12	3
Scabies	...	2	...	2	...
Ulcers	52	141	...	193	40
Other skin diseases	...	1	...	1	1
Injuries—general	30	187	20	217	23
local	50	626	10	676	64
Surgical operations	...	...	...	(215)	...
Tumours	3	33	7	36	1
Malformations	...	1	...	1	...
Poisons	...	6	...	6	1
Snake bite	1	2	...	3	...
Parasites—					
Cestoda— <i>Tenia solium</i>	...	2	...	2	1
Nematoda— <i>Filariasis</i>	...	1	...	1	...
Not otherwise classified	...	61	2	61	...
Gun-shot wounds	1	1	...	2	1
Hydatids	1	2	...	3	...
Bilharzia	...	4	...	4	...
Actinomycosis	...	3	...	3	...
Senility	...	2	...	2	...
Not diagnosed	...	7	...	7	...
Spirilla fever	...	2	...	2	...
Ill-defined	...	1	...	1	...
Totals	253	3,015	319	3,268	250

TABLE 22.

Table giving the number of beds in each Government Hospital and Ingutsheni Mental Hospital, the daily average of patients treated, the revenue and expenditure of each and the approximate charge on public funds for each patient treated in hospital during 1923.

Name of hospital.	No. of beds.		Daily average of patients treated.			No. of nursing staff.	No. of native staff.	Gross expenditure.		Revenue.		Deficit of revenue over expenditure.		Approximate charge on public funds for each patient treated.	
	White.	Coloured and native.	White.	Native.	Total white and native.			£	s. d.	£	s. d.	£	s. d.	£	s. d.
Salisbury	56	100	46.60	54.60	101.20	33	53	17,411	1 2	7,997	17 11	9,413	3 3	4	14 10
Umtali	30	16	12.15	8.30	20.45	5	13	3,819	16 2	1,538	0 4	2,281	15 10	3	14 0
Gwelo ...	30	34	9.10	27.50	36.60	5	16	4,080	9 2	1,183	7 9	2,897	1 5	4	9 5
Fort Victoria	12	12	3.95	10.78	14.73	3	10	1,695	6 10	301	19 6	1,393	7 4	6	6 8
Enkeldoorn	4	4	1.20	1.45	2.65	1	3	614	0 7	42	0 6	572	0 1	9	13 11
Gwanda	8	17	1.20	7.00	8.20	2	5	847	12 2	210	4 8	637	7 6	3	16 4
Gatooma	16	60	7.90	54.30	62.30	5	14	4,313	7 2	1,716	11 1	2,596	16 1	3	10 0
Shamva	16	15	3.51	9.04	12.55	4	12	1,934	19 5	371	19 1	1,563	0 4	4	13 10
Sinoia	10	7	1.67	4.59	6.26	2	6	1,009	16 7	285	9 8	724	6 11	4	7 3
Belingwe	9	15	1.39	4.33	5.72	1	2	451	16 10	137	18 0	313	18 10	7	9 6
Ingutsheni Mental Hospital	36	148	31.86	144.44	176.30	9	17	7,051	6 4	1,270	9 3	5,780	17 1	22	18 8



TABLE B1.  
STATEMENT OF PROGRESS AT GOVERNMENT HOSPITALS FOR THE YEAR 1958

Name of hospital	Total expenditure	NO OF CHED MATRONS					EXPENDITURE															LABORATORY					RESEARCH DEPARTMENT					TOTAL AMOUNT UTILIZATION					Percentage of total expenditure on research	Percentage of total expenditure on laboratory		
		Male		Females		Total	Expenditure on medical research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research	Expenditure on research (including purchase)		Percentage of total expenditure on research										
		White	Black	White	Black	White	White	Black		White	Black		White	Black		White	Black		White	Black		White	Black		White	Black		White	Black		White	Black	White	Black	White	Black			White	Black
		White	Black	White	Black	White	Black	White		Black	White		Black	White		Black	White		Black	White		Black	White		Black	White		Black	White		Black	White	Black	White	Black	White			Black	White
Salaries	1,700	17,000	17,000	17,000	17,000	34,000	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0	17,000	50.0
Food	100	1,000	1,000	1,000	1,000	2,000	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0
Drugs	100	1,000	1,000	1,000	1,000	2,000	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0
Medical	100	1,000	1,000	1,000	1,000	2,000	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0
Research	100	1,000	1,000	1,000	1,000	2,000	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0
Other	100	1,000	1,000	1,000	1,000	2,000	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0	1,000	50.0
Total	1,900	19,000	19,000	19,000	19,000	38,000	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0	19,000	50.0

\* Includes value of supplies from hospital stores and stocks, 1958 to 58.

\* In calculating this figure, the value of the supplies from stores and stocks is deducted from total expenditure.





TABLE 23.

## Return of Government and pauper patients treated in Government hospitals during 1923.

Name of hospital.	Number of free patients.			Total number of units treated.		Cost of maintenance.	Loss of revenue represented, reckoning 5s. a day for whites, and 2s. 6d. a day for natives, plus extras.
	White.	Native.	Totals.	White.	Native and coloured.		
Salisbury	207	396	603	4,363	12,856	£ s. d. 4,233 0 1	£ s. d. 3,018 4 10
Umtali	60	85	145	1,199	2,116	897 16 3	634 8 5
Gwelo ...	73	164	237	1,874	6,174	1,911 8 0	1,270 13 0
Fort Victoria	34	104	138	671	3,722	898 16 8	593 6 8
Enkeldoorn	21	24	45	298	481	* 168 15 8	139 0 0
Gwanda	15	55	70	228	1,314	301 19 6	220 13 6
Gatooma	30	294	324	277	14,954	2,157 14 6	1,976 1 6
Shamva	14	119	133	219	1,894	396 3 9	307 11 2
Sinoia ...	20	39	59	189	952	223 8 11	168 11 11
Belingwe	3	33	36	19	1,490	251 10 2	193 2 1
Totals	477	1,313	1,790	9,337	45,953	11,440 13 6	8,521 13 1

The total value of "extras" issued to free patients amounted to £471 4s. 3d.

TABLE 24.—METEOROLOGICAL RETURN FOR THE YEAR 1923.

Name of station : SALISBURY. Latitude, 17° 48' south. Longitude, 31° 5' east. Approximate altitude, 4,780 feet.  
Time of observation, 9 a.m. S.A. civil time.

	TEMPERATURE.						RAINFALL.		WINDS.	
	Solar maximum, black bulb, ° F.	Minimum on grass, ° F.	Shade maximum, ° F.	Shade minimum, ° F.	Mean daily range, ° F.	Mean temperature, month, ° F.	Amount, Inches.	Degree of humidity, %	General direction.	Average force
January	142.3	...	81.9	59.9	22.0	70.9	5.75	72	N.E.	1.1
February	139.4	...	78.6	59.4	19.2	69.0	11.17	78	N.E.	1.2
March	142.3	...	78.2	58.8	19.4	68.5	11.45	78	N.E.	0.9
April	137.9	...	80.2	53.6	26.6	66.9	1.37	68	S.E.	1.0
May	127.3	...	75.2	46.0	29.2	60.6	0.38	70	S.E.	0.6
June	122.1	...	73.1	41.5	31.6	57.3	Nil	66	S.E.	0.8
July	120.9	...	72.9	39.9	33.0	56.4	Nil	65	N.E.	1.4
August	124.4	...	76.4	43.3	33.1	59.9	0.16	52	N.E.	1.3
September	132.8	...	83.0	49.9	33.1	66.4	Nil	49	N.E.	1.0
October	138.9	...	88.7	53.5	35.2	71.1	0.20	42	N.E.	2.0
November	147.0	...	91.8	58.6	33.2	75.2	0.77	41	N.E.	1.3
December	143.7	...	84.3	55.6	28.7	69.9	7.88	61	N.E.	1.5
	134.9	...	80.4	51.7	28.7	66.0	39.13	62	N.E.	1.2



TABLE 25.—METEOROLOGICAL RETURN FOR THE YEAR 1923.

Name of station : BULAWAYO. Latitude, 20° 9' south. Longitude, 28° 36' east. Approximate altitude, 4,440 feet.  
Time of observation, 8 a.m. S.A. civil time.

	TEMPERATURE.						RAINFALL.		WINDS.	
	Solar maximum, black bulb. ° F.	Minimum on grass. ° F.	Shade maximum. ° F.	Shade minimum. ° F.	Mean daily range. ° F.	Mean temperature, month. ° F.	Amount, Inches.	Degree of humidity. %	General direction.	Average force.
January ... ..	146.1	52.3	78.7	63.1	15.6	70.9	6.74	83	N.E.	1.1
February ... ..	143.2	55.8	76.6	61.7	14.9	69.1	11.65	88	S.E.	1.6
March ... ..	136.8	54.9	74.6	61.1	13.5	67.9	8.24	88	S.E.	1.6
April ... ..	140.0	45.8	75.7	53.3	22.4	64.5	Nil	76	S.E.	1.4
May ... ..	134.3	39.1	74.0	48.2	25.8	61.1	Nil	65	S.E.	1.3
June ... ..	128.7	35.8	72.5	45.3	27.2	58.9	Nil	72	S.E.	1.3
July ... ..	129.8	33.6	72.3	43.5	28.8	57.9	Nil	62	S.E.	1.2
August ... ..	132.2	36.2	75.4	47.4	28.0	61.4	Nil	61	S.E.	1.5
September ... ..	140.7	42.3	82.6	53.7	28.9	68.2	0.01	48	S.E.	1.5
October ... ..	146.1	48.5	88.0	58.6	29.4	73.3	Nil	37	N.E.	1.9
November ... ..	151.2	55.3	88.7	63.0	25.7	75.8	2.98	52	N.E.	1.4
December ... ..	146.1	54.6	83.7	60.8	22.9	72.3	1.49	73	N.E.	1.5
	139.6	46.2	78.6	54.9	23.7	66.8	31.11	67	...	1.4

TABLE 26.—METEOROLOGICAL RETURN FOR THE YEAR 1923.

Name of station : UNTALI. Latitude, 18° 50' south. Longitude, 32° 39' east. Approximate altitude, 3,750 feet.  
Time of observation, 8 a.m. S.A. civil time.

	TEMPERATURE.						RAINFALL.		WINDS.	
	Solar maximum, black bulb, ° F.	Minimum on grass, ° F.	Shade maximum, ° F.	Shade minimum, ° F.	Mean daily range, ° F.	Mean temperature, month, ° F.	Amount, Inches.	Degree of humidity, %	General direction.	Average force.
January ...	155.0	62.5	80.7	64.7	16.0	72.7	14.55	80	S.E.	0.1
February ...	151.3	62.7	77.2	64.2	13.0	70.7	11.92	90	S.E.	0.5
March ...	149.3	61.1	76.4	63.0	13.4	69.7	16.65	88	S.E.	0.3
April ...	145.2	53.2	75.2	58.6	16.6	66.9	0.83	82	S.E.	0.5
May ...	139.0	43.9	71.5	52.9	18.6	62.2	0.30	82	N.E.	0.5
June ...	135.8	42.2	70.4	51.0	19.4	60.7	0.25	81	N.E.	0.4
July ...	135.6	42.4	70.4	50.9	19.5	60.6	0.57	81	N.E.	1.1
August ...	136.7	44.6	72.0	51.9	20.1	61.9	0.28	74	N.E.	0.4
September ...	147.8	50.2	79.5	57.0	22.5	68.3	0.26	68	S.E.	1.0
October ...	146.1	51.5	83.4	59.1	24.3	71.2	0.09	53	S.E.	2.0
November ...	148.5	60.3	87.1	64.5	22.6	75.8	1.95	58	N.E.	1.9
December ...	151.0	60.3	79.6	63.0	16.6	71.3	1.76	75	N.E.	1.6
	145.1	52.9	76.9	58.4	18.5	67.7	49.41	76	...	0.9



TABLE 27.—METEOROLOGICAL RETURN FOR THE YEAR 1923.

Name of station : MELSETTER. Latitude, 19° 47' south. Longitude, 32° 51' east. Approximate altitude, 5,100 feet.  
Time of observation, 9 a.m. S.A. civil time.

	TEMPERATURE.						RAINFALL.		WINDS.	
	Solar maximum, black bulb, ° F.	Minimum on grass, ° F.	Shade maximum, ° F.	Shade minimum, ° F.	Mean daily range, ° F.	Mean temperature, month, ° F.	Amount, Inches.	Degree of humidity, %	General direction.	Average force.
January	149.2	...	78.6	58.6	20.0	68.6	14.74	69	N.E.	2.1
February	145.0	...	73.3	57.3	16.0	65.3	9.29	83	S.E.	2.6
March	145.6	...	74.2	56.7	17.5	65.5	16.06	78	S.E.	1.9
April	138.4	...	72.8	51.9	20.9	62.3	0.94	67	S.E.	1.4
May	133.6	...	70.3	46.3	24.0	58.3	1.10	58	S.E.	2.2
June	130.7	...	69.0	44.9	24.1	56.9	0.34	58	N.E.	1.6
July	133.4	...	70.9	44.5	26.4	57.7	Nil	58	S.E.	1.8
August	137.6	...	76.1	45.2	30.9	60.7	0.32	79	S.E.	2.1
September	140.3	...	78.8	50.1	28.7	64.5	0.19	67	S.E.	2.7
October	144.4	...	84.4	54.8	29.6	69.6	0.19	33	N.E.	3.1
November	147.6	...	86.6	57.5	29.1	72.1	2.47	41	N.E.	2.7
December	144.5	...	81.0	55.6	25.4	68.3	5.15	61	N.E.	2.1
	140.9	...	76.3	51.9	24.4	64.1	50.79	63	...	2.2







