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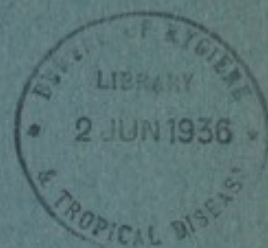
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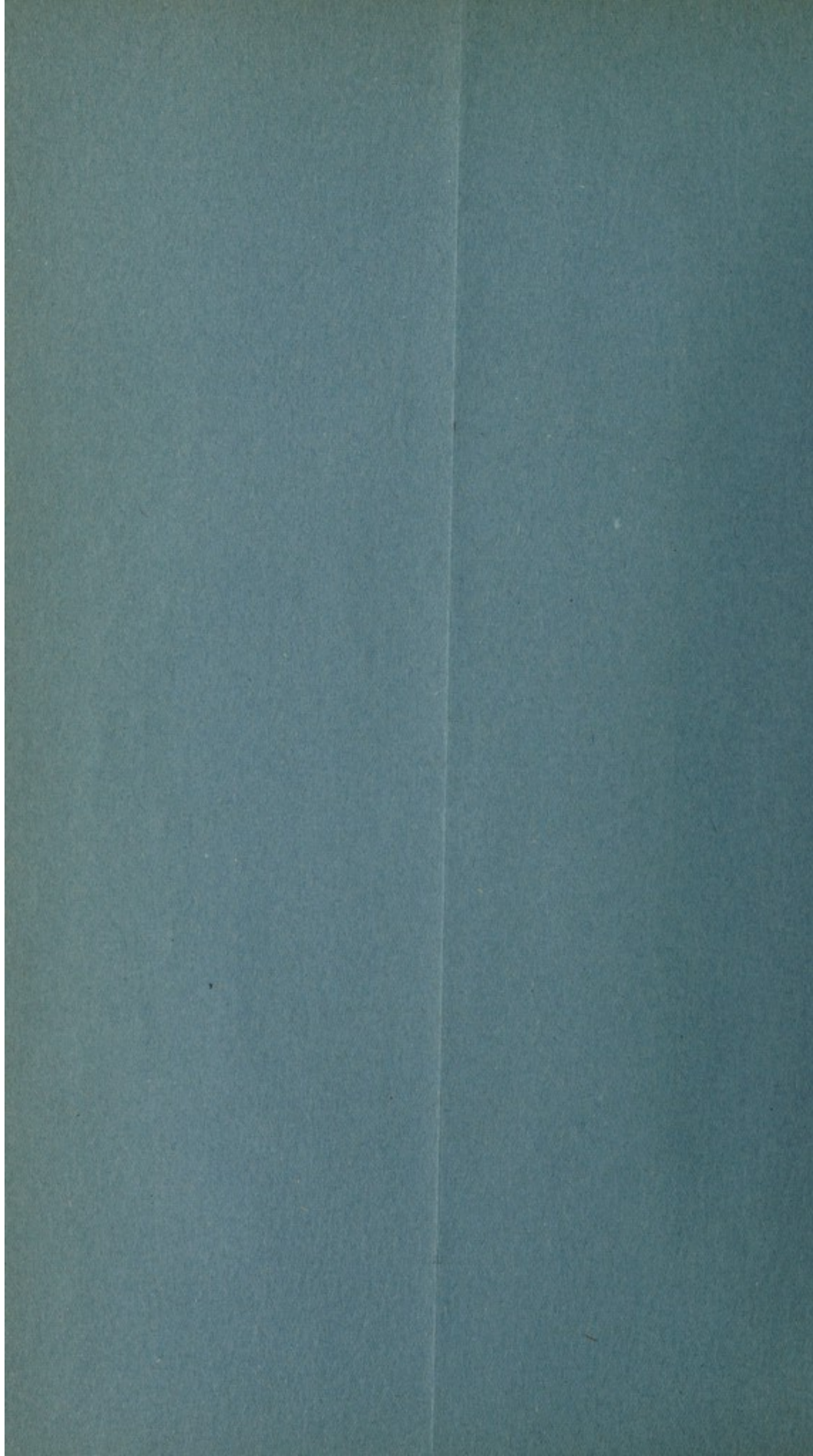
SOUTHERN RHODESIA.

Report
OF THE
The Public Health
For the Year 1935

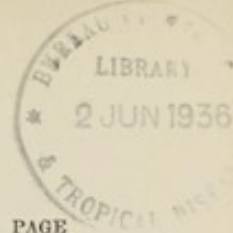
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1936.

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1936



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Report on the Public Health for the Year 1935.

INTRODUCTION.

The report on the Public Health for the year 1935 opens upon a note of sadness and regret—sadness, in that our first duty is to record the untimely death of Dr. Askins, for four years Medical Director of this country; regret, that his passing should have been shrouded in circumstances of such mysterious tragedy that to our sense of sorrow is added the deeper feeling of unavailing regret. To his wife and family has already gone out the heartfelt sympathy of all classes of the people of Southern Rhodesia.

But if in sadness we begin our report, there is matter for consolation in the record of the year that has passed, which shows that Dr. Askins' work in Southern Rhodesia has already been fruitful of many benefits to the people of the country. A high birth rate, a low death rate, a low infant mortality rate, increasing facilities for the accommodation and treatment of the sick, higher standards in the maintenance of the public health, all bespeak the general improvement in the living conditions of the people and all indicate the high aims and ideals which the Public Health Department has set itself to achieve.

In 1935 much progress has been made in the building of the new Bulawayo Memorial Hospital, in the designs of which have been incorporated all the most modern features of hospital administration and architecture. During this year the Secretary's house has been erected and is now occupied; the Nurses' Home has been begun, and the Native Staff quarters completed. Drains, roads, and sewerage are all under construction, and before many months are over will all be nearing completion.

In Salisbury the new Administrative block, with its operating theatres, Radiological department, massage and outpatients' department, is almost complete and with the opening of this unit a new era in the provision of medical facilities will have been begun. For the first time, through the installation of most modern equipment, we shall be able to offer to the public every facility for superficial and deep X-ray therapy. In addition, through the generosity of the Sweepstake Trustees there will no longer be need for those desiring Radium treatment to leave the country and seek assistance elsewhere. In Salisbury and in Bulawayo Radium units each costing £2,000 and comprising 184 milligrams of the Radium element are now available free of charge for the use of the people of Southern Rhodesia.

At Gwelo the new Nurses' Home is almost ready for occupation and the foundations of the new European Hospital are well advanced. Plans have been completed for the erection of European and Native Hospitals at Que Que and Bindura, and it is hoped that within the next few months the building of both these hospital units will be well under way. At Shamva a new Native Hospital has been built to meet the increasing needs of the native people in that area. At Enkeldoorn a new Native Hospital of 25 beds has just been completed and is now occupied. At Gwanda, also, a Native Hospital of 24 beds was completed during the course of the year and is now in use.

Other parts of the country have not been forgotten and in practically all areas some form or other of re-organisation of medical services has already taken place or is projected for the near future to ensure for all a participation in the wider schemes of the Department. Though undoubtedly much remains to be done—and in all progressive countries much must always remain to be done—yet it can be truly said that a wide and careful stocktaking shows that much has already been attempted and that still more is within easy reach of accomplishment in the near future.

CHAPTER I.—VITAL STATISTICS.

(1) POPULATION.

The estimated European population for 1935 was 54,000; Coloured, 2,610; Asiatics, 2,050; whilst the Native population, in regard to which we have not accurate figures, is considered to be in the neighbourhood of 1,200,200. The total estimated population is therefore 1,258,860. The European rate of annual increase per thousand population (excess of births over deaths) is satisfactorily

high, being 11.88 as compared with the much lower figure of 2 for England and Wales. The gross number of immigrants was 2,216 and the estimated net immigration 739.

(2) BIRTHS.

In 1935 there were 1,205 European births, as compared with 1,206 in the previous year; this corresponds to an annual birth rate of 22.31 per thousand of the European population. Of these total births, 27 were illegitimate—a very low proportion indeed. This year's annual birth rate of 22.31, whilst slightly lower than that of last year, which was 22.8, is still satisfactorily high and whilst, no doubt, it is in some part due to the fact that the Colony contains a larger proportion of persons of child-bearing age than older countries, yet from the point of view of the State it furnishes re-assuring evidence that the benefits of returning prosperity are being manifested in the lives of the people of the country. The birth rates of recent years are given below and compared with those of the Union of South Africa and England and Wales.

European Birth Rates, 1921-1935.

	Southern Rhodesia.	Union of South Africa.	England and Wales.
1921-30 (average) — — —	24.6	26.6	18.3
1930 — — — — —	24.2	26.4	16.3
1931 — — — — —	23.6	25.4	15.8
1932 — — — — —	22.8	24.2	15.3
1933 — — — — —	21.5	23.5	14.4
1934 — — — — —	22.8	23.4	14.8
1935 — — — — —	22.3	Not available	Not available

(3) DEATHS.

(A) *A Number of Deaths.*—In 1935 there were 563 European deaths corresponding to an annual death rate of 10.43. This is a slightly higher death rate than that of 1934, which showed a figure of only 9.6. The increase, however, is spread over almost all forms of serious illness and disease, and whilst there are some causes of death which are regrettable because avoidable, there is no single cause to which the increase can be attributed. The following table gives the death rates of recent years compared with those of the Union of South Africa and of England and Wales, the standardised rates giving the alterations necessary to allow for differences of age and sex distribution in the countries concerned. It will be noted that the rates for Southern Rhodesia compare satisfactorily with those of the Union and also of England and Wales.

European Death Rates, 1921-1935.

	Crude death rate, Southern Rhodesia.	Standardised death rate.		
		Southern Rhodesia.	Union of South Africa.	England and Wales.
1921-30 (average)	9.5	11.2	10.4	10.6
1930	9.2	10.0	10.1	10.8
1931	8.3	8.8	9.6	10.2
1932	9.5	11.3	10.0	9.7
1933	8.5	9.2	9.3	9.8
1934	9.6	10.9	Not available	Not available
1935	10.4	12.6	" "	" "

(B) *Causes of European Deaths.*—The following table shows the causes of European deaths in the last five years. Further details are given in Table (1) at the end of this report:—

Causes of European Deaths, 1931-1935.

Name of disease.	1935.	1934.	1933.	1932.	1931.	Totals.	Percentage of total deaths.
1. Cancer	46	41	37	49	23	196	8.12
2. Violence (all forms)	55	46	38	43	53	235	9.73
3. Heart diseases	69	63	36	43	49	260	10.77
4. Pneumonia and bronchitis	41	36	31	42	42	192	7.95
5. Malaria and blackwater fever	56	52	47	37	36	228	9.44
6. Nervous diseases	21	33	29	37	27	147	6.09
7. Premature birth and diseases of early infancy	29	25	31	24	24	133	5.51
8. Tuberculosis (all forms)... ..	17	11	14	17	15	74	3.07
9. Influenza	30	20	8	17	10	85	3.52
10. Diarrhoea and enteritis	13	9	11	14	14	61	2.53
11. Old age	9	4	11	10	5	39	1.62
12. Enteric fever	5	10	4	6	2	27	1.12
13. Diphtheria	5	5	8	6	2	26	1.08
14. Dysentery	7	14	13	4	6	44	1.82
15. Whooping cough	6	1	6	4	1	18	0.75
16. Measles	1	...	...	...	...	...	0.04
17. Scarlet fever	3	...	...	...	...	...	0.12
18. Other causes	150	138	117	132	108	645	26.72
Totals	563	508	441	485	417	2,414	100.00

1. *Heart Disease*.—Heart disease again heads the list with a figure of 10.77, which marks a slight increase over the figure for the previous year. In this connection it should be remembered that there are more old people in the Colony as the years go by and therefore the proportion of deaths from this cause will gradually increase and eventually approximate to that of older countries.

2. *Malaria and Blackwater Fever*.—Again climatic conditions favoured the growth of Anopheline mosquitoes in 1935 and thus resulted in a slight increase in the number of deaths. Further, it should be noted in this connection that the rapid expansion of the small workers' mining industry of the country exposes greater numbers of people to the risks of malarial infection. The disease is further discussed under the section dealing with malaria in Chapter II.

3. *Violence*.—Nine deaths from motor accidents, though not a high proportion compared with other and older countries, must be regretted as an avoidable cause of death.

4. *Cancer*.—Cancer this year occupies the fourth place amongst diseases resulting in death, and whilst showing a slight increase in the actual number of cases reported, the percentage of total deaths caused by this disease is somewhat lower. The condition is probably not more prevalent than a generation ago. The apparent increase is due partly to the greater proportion of older people in the population and partly to improved methods of diagnosis.

5. *Pneumonia and Bronchitis*.—Pneumonia and Bronchitis, like Cancer, show a slightly higher case rate, but the percentage of total deaths is slightly lower than the previous year. The increased incidence of these two diseases is correlated with the unusually inclement weather of last year.

6. *Nervous Disease*.—The majority of deaths from nervous disease were due to Cerebral Haemorrhage.

7. *Tuberculosis*.—The number of deaths from Tuberculosis was higher this year than last, but most of these deaths were due to the gradual progression of long-standing infections contracted outside this Colony.

(4) INFANT MORTALITY.

In 1935 there were 58 deaths of European infants under one year of age corresponding to the low infant mortality rate of 48 per thousand. In addition, 18 still-births, also a very low figure, were registered. It is generally accepted that the infant mortality rate is a reliable index of social conditions and, therefore, it is most satisfactory to compare the rate of Southern Rhodesia with the much higher rates of England and Wales and of the Union, as indicated in the table below:—

European Infant Mortality Rates, 1921-1935.

	Southern Rhodesia.	Union of South Africa.	England and Wales.
1921-30 (average)	63	70	72
1930	45	67	60
1931	45	63	66
1932	55	69	65
1933	55	61	64
1934	45	61	59
1935	48	Not available	Not available

It is, nevertheless, necessary to point out that we are still losing a number of valuable infant lives each year from causes which are definitely preventable and which should be prevented.

Causes of Infant Deaths for Ten Years, 1926-1935.

Disease.	No. of deaths.	Percentage.
Premature birth and diseases of early infancy	248	42.03
Bronchitis and Pneumonia	69	11.70
Diarrhoea and enteritis	75	12.71
Malaria	54	9.15
Measles, Whooping cough, Diphtheria, Dysentery	40	6.78
Various, not classified above	104	17.63
Totals	590	100.00

Infant Deaths during Different Months, 1926-1935.

	No. of deaths.	Percentage.
First month	289	48.98
Two months to six months	176	29.83
Six months to twelve months	125	21.19
Totals	590	100.00

Neonatal deaths, i.e., deaths of babies within the first month of life, are responsible for nearly half of this rate. Improved attention before and at the time of birth can reduce this mortality. A scheme has been placed before Government, which, if approved, should go far to reduce the incidence of infant mortality in the coming years. It will be noted that other important causes of infant mortality are bronchitis, pneumonia, diarrhoea, enteritis and malaria. Such diseases can be, to a great extent, prevented by a wider distribution of the knowledge of the hygiene of infant life. Under the scheme proposed, means will be taken to ensure this end. The Municipality of Salisbury, again with wise prevision, are extending their scheme of maternity and child welfare and this year are taking over the whole of the work of the Child Welfare Society in order to co-ordinate its activities under one head and to extend its purposes.

Child Welfare Societies perform excellent work in some of our large towns. In Bulawayo this Society maintains a well-equipped and well-staffed Infant Welfare Centre and Creche. But if our infant mortality rate is to be reduced, there must be a wider and more rapid extension of these activities in other areas. Government grants are available for this purpose, and the conservation of infant life is surely a high purpose of which any local authority or public body might well be proud.

(5) MATERNAL MORTALITY.

During the year 1935 there were 9 deaths of European mothers directly attributable to child-birth, corresponding to a maternal mortality rate of 7.47 per thousand live births. Again this rate shows a slight increase as compared with that of last year, and again it contrasts badly with the low general death rate and the low infant mortality rate. Practically every civilised country in the world is striving with might and main to reduce the maternal mortality rate within its boundaries, and foremost amongst these in strenuous effort is the Imperial Government of Great Britain, although the maternal mortality rate there is very much lower than that of this country, being about 4.4, as compared with our 7.47. The maternal mortality rates of Southern Rhodesia during recent years are given below and compared with those of the Union of South Africa and of England and Wales.

European Maternal Mortality Rates, 1921-1935.

	Southern Rhodesia.	Union of South Africa.	England and Wales.
1921-30 (average)	5.4	5.1	4.1
1930	6.0	5.3	4.4
1931	5.1	4.7	4.1
1932	6.0	5.3	4.2
1933	6.3	4.8	4.5
1934	7.46	5.99	4.4
1935	7.47	Not available	Not available

The causes of maternal deaths during the last ten years were as follows—

European Maternal Deaths, 1926-1935.

Cause of death.	No. of deaths.	Percentage of Total.
Puerperal sepsis	22	32.84
Accidents of pregnancy	11	16.42
Puerperal hæmorrhage	8	11.94
Other accidents of child-birth	7	10.45
Puerperal albuminuria and toxæmia	10	14.92
Other causes	9	13.43
Totals	67	100.00

An enquiry into the causation of maternal deaths, on the same lines as that of the British Government, has been held again this year. It is quite apparent from the information received that much remains to be done in raising the standard of maternal facilities in this Colony, and that until these deficiencies have been remedied, the maternal death rate is not likely to show any considerable reduction.

The points which emerge are these:—

(a) *Ante-Natal Care.*—The lack of skilled supervision during pregnancy is still very noticeable. Every year this is quoted as being a contributing cause toward maternal mortality, and every year emphasis is laid upon the desirability of an increase in the number of organisations interested in maternity and child welfare. This year again we stress the point that a series of nine letters has been printed, which will be forwarded each month to any expectant mother who cares to ask for them. These letters can be had from the Public Health Department, Salisbury, and also from the various Child Welfare Societies and maternity homes in the country. This is but a small step along the way to the betterment of maternal conditions, but it is an effort from which—if better known and more widely advertised—much more benefit could be derived.

(b) *Services of Trained Midwives.*—In some instances interference by unskilled midwives before qualified assistance has been sought is considered to have resulted in the death of the patient. It is the intention of the Government to push forward as rapidly as possible the institution of a training school for midwives in connection with the Bulawayo Hospital.

(c) *Maternity Homes.*—Excellent maternity homes provided with the assistance of the Beit Trustees and the Government are established at 10 centres in the Colony. These homes are exceedingly popular, but are not utilised to the extent they should be. There are other measures which at the moment Government have under consideration for the purpose of reducing this maternal mortality. If these prove to be practical, it is the Government's intention to make a determined effort to provide a standard of facilities for expectant mothers which should result in a material reduction in the number of these deaths.

CHAPTER II.—INFECTIOUS AND COMMUNICABLE DISEASES.

(1) NOTIFICATION.

Although the notification of the more important infectious diseases is compulsory under the Public Health Act, it is very incomplete. The following figures, which are taken from various returns, give some idea of the infectious diseases prevalent among the European population. The figures for the native population necessarily deal with only a small proportion thereof:—

Infectious Diseases, 1935.

Name of Disease.	Cases Reported		
	European	Native	Total
Chickenpox	130	146	276
Measles	303	179	482
Whooping cough	176	71	247
Typhoid	52	42	94
Mumps	33	4	37
Diphtheria	53	6	59
German measles	94	1	95
Erysipelas	4	...	4
Cerebro-spinal meningitis	1	33	34
Scarlet fever	132	3	135
Polio-myelitis	2	...	2
Paratyphoid	1	1	2
Malta fever	1	...	1
Anthrax	1	2	3
Puerperal septicæmia	2	2	4
Smallpox ... ..	...	1	1
Bacillary dysentery ... ..	...	5	5

(2) MALARIA AND BLACKWATER FEVER.

In 1935, 39 deaths were registered as occurring from malaria and 17 from blackwater—total 56. This slight increase from the previous year appears to be due to the fact that climatic conditions in 1934-35 were favourable for mosquito breeding. Further, it should be remembered that the rapid expansion of the small workers' mining industry exposed very many more people to the risk of malaria than in previous years.

A short series of studies was conducted on the therapeutic value of certain drugs used in the treatment of malaria, the results of which are discussed in the report of the Director of the Public Health Laboratory. It should be

made known for the benefit of the public that research work on malaria goes on unremittingly in the laboratories of the country. This year it is hoped that opportunity will be found to publish a considerable amount of information already made available to the medical men of the Colony, but some of which at least might usefully be made known to the general community. Further, it is time that it was clearly realised that in Southern Rhodesia malaria is mainly a problem of undeveloped rural areas, and that almost all of our townships and larger villages are free from the risks of this disease.

(3) DIPHTHERIA.

During 1935 there were notified 53 European cases of diphtheria and five deaths. The disease showed a marked increase in incidence in some parts of the Colony, and in most cases showed also an increased virulence. Further, it has to be noted with regret that the immunising process upon which so much stress has been laid in previous years has not achieved the success expected. A higher percentage of children than was previously estimated did not receive immunity from the first attempt at immunisation. Whilst this is to be regretted, every advantage should still be taken of the protection which the procedure affords for a very large number of children, but care should be taken by a further test six months after the immunising course to ascertain whether the desired immunity has been achieved. Much work has recently been done in this matter, and there is little doubt but that within the next few months the investigation which has been undertaken by the Public Health Laboratory, working in conjunction with the South African Institute of Medical Research, will result in ascertaining why the percentage of cases who acquire immunity from first immunisation is lower in Southern Rhodesia than is believed to be the case elsewhere. The public may rest assured that every endeavour will be made by the Department to render this procedure as efficient as possible and to adopt ways and means which will procure the necessary protection for those whom the first immunisation course does not benefit.

(4) DYSENTERY.

Bacillary Dysentery.—This disease continues to be endemic amongst Europeans and natives, and the significant variation noted in the causal organisms last year has again been well marked in the cases investigated during 1935. *B. dysenteriae*, Shiga, was isolated from faeces in six European cases out of a total of 18 positives. Chronic bacillary dysentery is met with most frequently amongst natives, but is also becoming recognised in a greater number of cases amongst Europeans.

Amoebic Dysentery.—This form of dysentery occurs with much greater frequency than was hitherto supposed. But whether this is due to a greater number of infections or to the better facilities now available for the detection of the disease, is not known. The fact remains that amoebic dysentery is being more frequently recognised to-day than in former years.

Helminthic Dysentery.—Many cases of recurrent dysentery or severe diarrhoea have been found during the past year to be due to infection from a number of different helminths, amongst which are included *S. Mansoni*, *Trichuris Trichiuria*, *Heterodera radiculicola*, *Ascaris* and *Hookworm*.

(5) LEPROSY.

The Government maintain two leprosy hospitals of practically equal size—one at Ngomahuru and one at Mtoko. In addition, Mnene Medical Mission, which is subsidised by the Government, has a leprosy section attached to its hospital. The leprosy hospitals are really large estates in which the patients' mode of life approximates as nearly as possible to their natural conditions. The leprosy laws are in force, but these hospitals, as far as is possible, resemble voluntary institutions. The success of the Government's policy is indicated by the fact that the number of lepers under treatment has increased in six years from 508 in 1929 to 1,359 last year. Further, a large proportion of patients now ask for admission. This does not mean that there are more cases in the Colony, but that more are seeking treatment.

In 1935 a complete reorganisation of the Mtoko Leper Settlement was undertaken. This included the building of 45 new huts for the accommodation of the leper patients, a house for the European orderly, the opening up

of new roads throughout the leper settlement, the laying-on of water supplies to the leper compounds, the establishment of a creche for leper children, the creation of a kitchen garden for the purpose of supplying fresh vegetables to the leper patients, and various other measures for the benefit of the native patients accommodated there. In the coming year it is intended to complete the building of the native compounds.

At Ngomahuru many improvements were effected during the past year, the chief of which were the completion of the plans for a new water supply which will be drawn from the Tokwe River by means of a pumping station and which will ensure for Ngomahuru an ample supply for all its needs. At Ngomahuru iodised esters constitute the drug chiefly used, and the Medical Superintendent reports that the results of this treatment are very satisfactory.

Leprosy institutions are now looked upon as curative hospitals and not as prisons. A large number of "arrested" cases are discharged each year—117 from Ngomahuru and 202 from Mtoko in 1935. The return of these patients to their kraals has an excellent effect, and the number of patients who come voluntarily for treatment increases every year.

The Government are greatly indebted to the British Empire Leprosy Relief Association for the generous grants they have made from time to time, especially towards the erection of the leprosy hospital at Mtoko, and also for assistance in obtaining leprotic drugs, some of which are very expensive. The following table shows the working of the above-mentioned institutions during the year:—

Lepers Treated during 1935.

Institution	On register, 1.1.35	Admitted, 1935	Discharged or died	On register, 31.12.35	Total cases treated
Ngomahuru	532	137	154	515	669
Mtoko	536	106	230	412	642
Mnene Mission	42	6	6	42	48
Total	1,110	249	390	969	1,359

(6) HELMINTHIASIS.

Evidence is now accumulating that bilharzial infection of the intestinal tract occurs not infrequently amongst Europeans, particularly those whose work takes them into native reserves. A helminthological survey carried out in 1930 showed that amongst town-dwelling Europeans the incidence of intestinal bilharziasis was only 1.5 per cent. But in 1935 the examination of 1,583 specimens of European urine demonstrated the presence of *B. Haematobium* in 58, an incidence of 3.6 per cent. Further, as the majority of urine specimens examined were obtained from adults, this percentage cannot be regarded as representative of the incidence of urinary bilharziasis in the different sections of the European community. On the other hand, the examination of 669 samples of native urine revealed the presence of *B. Haematobium* in 125, an incidence of approximately 18 per cent. in a mixed native community.

All the evidence shows that bilharzia disease is more readily acquired in some areas than in others, hence evidence from one area does not necessarily constitute an index of the incidence of bilharzia disease generally. For this purpose, several separate surveys would be necessary. The problem of control is one of singular difficulty, largely on account of the irregular distribution of snail-containing collections of water throughout the country. Almost every farm has its bathing pool in which "bilharzia snails" can be found with great regularity, and, as bathing is indulged in freely in a variety of pools and rivers, it is impossible to render all snail free. Probably the best method of tackling the problem at the present time consists in the free dissemination of information concerning the bionomics of the intermediate hosts, the mode of infection and the early clinical features of the disease, and for this purpose a pamphlet was prepared by the Public Health Department and issued to the public for their information and guidance.

One other method of prevention recently brought to our notice is by the encouragement of the growth of a tree named *Balanites Aegyptiaca* along

the banks of streams known to be infested with snails carrying the bilharzia parasite. In the coming year experiments will be conducted by the Department to determine whether this method is likely to be of any service to us in Southern Rhodesia.

The only other helminthic infection of importance is that due to the hookworm. No European cases were reported during the year. Amongst a mixed community of natives, the incidence was found last year to be 16 per cent., but in most cases only light infections were recorded. In some of the moister parts of the country, however, hookworm infections are not only more numerous, but the individual carries a heavier "hookworm load" than is encountered in the average native of the towns. As compared with bilharzia disease, hookworm disease (as opposed to hookworm infection) is of secondary importance, and its incidence can be materially reduced by the use of common salt round native latrines—a procedure whose efficacy has been amply demonstrated on the Rand mines.

In regard to helminthic infections in general, a summarised account is given later in the report of the Public Health Laboratory, Salisbury, and attention is drawn particularly to the Director's observations on Cysticercosis.

(7) HUMAN TRYPANOSOMIASIS.

A short survey undertaken by Dr. Blair, Government Medical Officer, Sinoia, in the winter months of this year in the Sebungwe area to the west of Gokwe showed completely negative results as far as the presence of human trypanosomiasis was concerned. The native population in this area, which is small, was examined in the manner prescribed for such investigations, and in no case was any evidence of this disease found. This is very cheering information in regard to the only area in Southern Rhodesia where human trypanosomiasis was recently known to exist and which is still to some extent infested by the tsetse fly. It can be concluded from this survey that the position in Southern Rhodesia in respect of sleeping sickness is most satisfactory.

(8) SMALLPOX.

Smallpox is endemic in neighbouring territories, from which there is extensive immigration of native labour each year. The Government adopt two main preventive measures:—

1. Vaccination of all immigrant natives at the frontier.
2. Vaccination of all natives in a considerable area surrounding any outbreak.

Although such outbreaks not infrequently occur, these measures have proved effective in preventing the disease from gaining a footing in the Colony, and no epidemic has taken place for several years. During the past year only one native case was reported. No case has occurred of recent years among our well-vaccinated European population. The expenditure on lymph in 1935 amounted to £1,114. The position therefore in regard to smallpox is eminently satisfactory.

(9) PLAGUE.

On receipt of information in May, 1935, from the Bechuanaland Administration that two cases of plague had occurred in their territory, the Public Health Department immediately took steps to establish a survey party and to institute a careful surveillance along our south-western boundary. Despite most careful investigation no evidence whatsoever of rodent plague was discovered, nor could any history of any illness resembling human plague amongst the border native population be elicited. As a result, however, of the occurrence of rodent plague in Bechuanaland it will be necessary to keep continuous watch over the south-western portion of the territory.

(10) VENEREAL DISEASE.

Though no reliable figures are available, nevertheless from such information as has been received it is probably correct to say that venereal disease is less common amongst our European population than in older countries. Amongst

the natives it is at least no more prevalent than in other tropical regions; in fact, the figures derived from such surveys as have been attempted tend to show that its incidence is considerably less than is popularly believed. Treatment, however, is expensive and no Government can hope to deal with more than a limited number of native cases. It is anticipated that an effective reduction in the incidence of the disease will be made as soon as the Government's new scheme for the establishment of Native clinics is under way. The Government maintain a number of treatment centres and subsidise municipalities and medical missions for this purpose. Anti-venereal specifics are granted free to approved institutions. On these measures the Government spend about £6,000 a year.

(11) TYPHUS FEVER AND RABIES.

These dangerous diseases occur in adjoining territories, but no cases have been reported in Southern Rhodesia for some years.

(12) TUBERCULOSIS.

There were 17 deaths from all forms of tuberculosis in 1935 as against 11 in the previous year. Most of these deaths occurred in subjects whose infection had been of long standing, and which had been contracted outside the Colony. Again it must be remarked that the disease is distinctly less common in this country than in older countries and many patients who have come from there do well in Southern Rhodesia. Nevertheless, cases are increasing in sufficient number to justify separate accommodation and it is hoped that this provision will be made at an early date on the Government's building programme. Both from their own point of view and from that of the other patients, it is undesirable to keep consumptive cases in general hospital wards.

(13) ENTERIC FEVER.

There were notified 52 European cases and five deaths during 1935. This figure is above the average for the disease in this country. It will be observed in the Annual Report of the Director of the Public Health Laboratory, Salisbury, that a certain amount of investigation on the agglutinin content of sera of supposedly normal natives showed a high percentage of positive re-actors in dilutions which previously had been accepted as diagnostic. Whether this result means that we shall have to revise our ideas in connection with minimum diagnostic titres in natives or whether it means, what it plainly seems to indicate, namely, that the native population in childhood and adolescence is much more frequently attacked by Typhoid Fever than was formerly presumed to be the case, will require further investigation before a definite answer can be given. In the meantime protection of food supplies, better accommodation for native employees and the extension of water-borne sewerage remain important measures in combating the disease.

(14) WHOOPING COUGH, MEASLES, SCARLET FEVER, CHICKENPOX, GERMAN MEASLES.

As is the case in other countries, these infectious diseases occur from time to time amongst European children, especially in centres where there are large schools. They can be controlled only to a limited extent. Six European deaths occurred from whooping cough during the year and three from scarlet fever. The incidence of measles, whooping cough, scarlet fever and chickenpox was relatively high.

(15) INFLUENZA.

Influenza again in 1935 was responsible for 30 European deaths, a high percentage which was associated with the extremely cold weather experienced during the winter of 1935.

(16) CEREBRO-SPINAL MENINGITIS.

One European case of Cerebro-Spinal Meningitis occurred in 1935. As in other countries cases occur sporadically, but occasional small outbreaks are reported amongst the native population.

CHAPTER III.—GENERAL.

(1) NATIVE MEDICAL UNITS.

There are efficient native sections attached to the Government European hospitals throughout the Colony, and small native hospitals have in recent years been erected at Marandellas, Mount Darwin, Amandas, Plumtree, Fort Usher, Chibi and in the Chilimanzi and other districts, where there are no European hospitals. The larger mining companies maintain hospitals for their employees. The employed native who falls sick is thus on the whole well catered for. These, however, constitute a relatively small portion of a total estimated population of 1,200,200. Over 732,000 natives live in reserves or on unalienated Crown lands. For the treatment of this latter class of the native people there has been in existence for many years a number of medical missions, which, in 1935, were subsidised by Government to the extent of £3,750. But in addition, in 1932, Government, in order to deal with this problem, instituted in the Ndanga-Bikita area a fully equipped native medical unit, whose success has been so clearly demonstrated in the succeeding years that from time to time, as circumstances permitted, other dispensaries have been opened up in various parts of the country. Moreover, at the moment, Government has under consideration a scheme for the rapid extension of medical facilities by means of the creation of dispensaries and clinics in many districts throughout the whole Colony. This scheme, if approved, will unite the Public Health Department, the Native Affairs Department and the mission stations in a common effort to bring to the native people, in as brief a period as possible, all the benefits of modern medicine and skilled attention.

The following table gives the number of patients treated during the year at the various native medical units and dispensaries and clinics throughout the country :—

Medical Treatment of Natives in Reserves during 1935.

Native Clinics	No. admitted to Hospitals	No. Outpatients (approximately)
Ndanga Native Hospital — — — —	1,491	426
Gutu Dispensary, Ndanga — — — —	614	1,159
Dispensary "B," Ndanga — — — —	1,155	315
Dispensary "C," Ndanga — — — —	609	422
Dispensary "A," Ndanga — — — —	126	1,253
Bikita Native Dispensary — — — —	698	1,403
Total (Ndanga Unit)	4,693	4,978
Amandas Clinic, Concession — — — —	437	420
Chibi Clinic, Fort Victoria — — — —	1,386	668
Chilimanzi Clinic, Umvuma — — — —	214	1,565
V.D. Clinic, Fort Victoria — — — —	258	2,151
V.D. Clinic, Gatooma — — — —	1,121	—
Gwaai Reserve — — — —	360	3,507
Kezi Dispensary — — — —	5	741
Marandellas Clinic — — — —	675	321
Mount Darwin — — — —	1,262	279
Mrewa Dispensary — — — —	455	7,968
Plumtree Dispensary — — — —	624	1,389
Total (Other clinics)	6,797	19,009
Grand Total	11,490	23,987

(2) NATIVE LABOUR ON MINES.

Disease.—The extremely cold weather experienced during the winter months of last year resulted in a rapid increase in epidemic influenza and in pneumonia amongst mine natives, with a consequent increase in the number of deaths from these diseases.

There were 1,632 cases of pneumonia with 406 deaths, and 10,946 cases of influenza with 85 deaths. As a result of this visitation the death rate from

disease per thousand per annum rose from 9.29 to 11.32. During the year the mining regulations were revised and amongst other changes an extra half-pound of meat per week per native was added to the minimum diet scale. The high death rate from influenza and pneumonia this year shows how necessary it is that the ideas of the mining public in regard to the feeding of native mine workers should be revised and a higher standard demanded.

In addition, outbreaks of scurvy occurred in many areas amongst mine natives in the country during the months of October, November and December. This was due to the lack of rain during those months and the resultant inability to obtain supplies of fresh vegetables. Due, however, to the enterprise of a local Citrus Products Company a concentrated form of citrus juice is now available and has already been used with marked effect in many parts of the country where the condition of the natives from scurvy was causing anxiety. It is hoped that next year an attempt will be made to ensure that wherever fresh vegetables are unobtainable, supplies of this concentrated citrus juice will be introduced into the diet of the natives at an earlier period of the year, before the danger from scurvy arises.

Accidents.—The death rate from accidents is practically stationary, having been for many years a little above the figure of two per thousand. Every such death is carefully enquired into and it is probable that this rate is as low as can be anticipated in an occupation which contains unavoidable risks. The accident death rate for the Transvaal is about the same.

A senior officer of the Native Department is seconded for service on the staff of the Public Health Department and devotes the whole of his time to supervising health conditions of native mine employees. The beneficial results of supervision by a skilled officer, who is in an entirely independent position, cannot be over-estimated.

(a) *Natives on Mines : Comparative Statement of Mortality, 1931-1935.*

	Twelve Months ended November				
	1931.	1932.	1933.	1934.	1935.
Average number employed	35,790	35,466	47,080	61,101	74,752
Disease—					
Number of deaths	477	341	438	573	846
Death rate per mille per annum	13.33	9.61	9.30	9.38	11.32
Accidents—					
Number of deaths	87	89	103	140	193
Death rate per mille per annum	2.43	2.51	2.19	2.29	2.58
All Causes—					
Number of deaths	564	430	541	713	1,039
Death rate per mille per annum	15.76	12.12	11.49	11.67	13.90

(b) *Natives on Mines : Rates of Deaths from Disease.*

Death Rate per 1,000 Employed.	Twelve Months ended November				
	1931	1932	1933	1934	1935
Pneumonia	6.40	4.88	4.16	4.21	5.43
Other Diseases	6.93	4.73	5.14	5.17	5.89
Total disease death rate	13.33	9.61	9.30	9.38	11.32

(c) *Natives on Mines : Sickness, Deaths and Death Rates.*

Disease.	Twelve Months ended November, 1935.		
	No. of Cases	No. of deaths.	Death rate per mille per annum.
Malaria — — — — —	5,769	37	0.50
Scurvy — — — — —	154	22	0.29
Syphilis — — — — —	759	22	0.29
Pneumonia — — — — —	1,632	406	5.43
Phthisis (consumption) — — —	60	49	0.66
Other diseases of chest — — —	1,322	22	0.29
Dysentery and Diarrhoea — — —	997	22	0.29
Other intestinal diseases — — —	271	29	0.39
Heart Disease — — — — —	45	41	0.55
Debility — — — — —	197	10	0.14
Influenza — — — — —	10,946	85	1.14
Other diseases — — — — —	1,992	101	1.35
Minor ailments — — — — —	19,800	—	—
Total — — — — —	43,944	846	11.32
<i>Accidents and Injuries—</i>			
Major — — — — —	486	193	2.58
Minor — — — — —	10,612	—	—
Total (all cases) — — —	55,042	1,039	13.90

(3) SCHOOL MEDICAL SERVICE.

The number of children examined in European schools by the Schools' Medical Officer was 3,864. In addition, 275 children were examined in coloured schools. The number of boys examined by Government Medical Officers was 763, giving a total of 4,902 children examined. The following figures are calculated on the 3,864 European children examined by the Schools' Medical Officer.

Parents attended the examination in 973 cases. Boarders were examined at the school hostels and the school matron attended the inspection as the parents' representative. The number of boarders examined was 1,180, so that the total number of children examined in the presence of a parent or representative was 2,153 or 55.7 per cent. The value of the examination is considerably increased when the Medical Officer has an opportunity of discussing the special problems of individual children with their parents or guardians.

Vaccinations.—A considerable number of children are unvaccinated when they enter school. The total number of unvaccinated children was 692, or 17.9 per cent. Of 1,071 entrants in the sub-standards, 483 or 45.1 per cent. were unvaccinated. The majority of these children were vaccinated at school by the Schools' Medical Officer in accordance with the regulations of the Public Health Act.

Malaria.—Enquiries were made as to the number of children who gave a history of one or more definite attacks of malaria which had been diagnosed by a medical practitioner. Vague histories of feverish attacks were not included in this list. The true incidence is somewhat higher than the figure given, for in a certain number of cases no previous history was obtainable from parents or teachers. The total number of children giving a history of malaria was 1,672,

giving a percentage of 43.3. A history of blackwater was obtained in 21 cases. 79, or 2 per cent., were found to have enlarged spleens. The incidence of malaria in different parts of the country is shown in the following table:—

School	No. examined	History of Malaria	Percentage	Enlarged Spleens
Salisbury—				
Girls' High School	343	102	29	1
Convent	258	79	30	2
Public School	214	85	39	2
Salisbury District—				
Hatfield	69	29	42	2
Sinoia	26	10	38	0
Bindura	39	35	90	3
Shamva	16	16	100	3
Enkeldoorn	102	58	56	2
Gwelo—				
Convent	58	25	43	0
High School	180	73	40	4
Gwelo District—				
Selukwe	58	19	32	0
Shabani	44	13	29	0
Fort Victoria	38	19	50	0
Fort Victoria District—				
Victoria Plots	44	26	59	10
Umvuma	54	29	55	3
Umtali—				
High School	137	74	54	0
Public School	89	62	69	3
Convent	38	20	52	1
Umtali District—				
Chipinga	44	34	77	5
Melsetter	27	18	66	0
Rusapi	45	20	44	0
Bulawayo—				
Girls' High School	345	122	35.4	2
Convent	195	75	38.5	2
Public School	116	44	38	1
Que Que	79	37	46.8	2
Eiffel Flats	57	32	56	1
Gatooma	90	57	63.3	4

It will be seen that malaria is one of the chief causes of ill health among school children and is often responsible for prolonged periods of depressed vitality. On the other hand, diseases such as rickets and pulmonary tuberculosis, which cause much disability in colder countries, are extremely rare.

Enlarged Tonsils.—The only other condition which calls for comment in Southern Rhodesia is the high percentage of enlarged tonsils. This is higher than in England, being 16 per cent. as compared with 10 per cent., but in the majority of cases the condition seems to be a simple hypertrophy giving rise to no symptoms, and is rarely associated with enlargement of adenoids. The incidence varies in different parts of the country. In Bulawayo, the percentage of children whose tonsils had been removed was 25, as compared with 14 for the whole country. As Bulawayo is particularly dry and dusty, it seems probable that the condition is a reaction to chronic irritation from the fine dust, which, during the dry season, is a prominent feature of the school playing grounds.

Mental Defect.—The number of children referred by teachers for special examination was 44. Of these, 11 were found to be feeble-minded and three were imbeciles.

Postural Deformities.—The number of children referred for remedial exercises in schools where such facilities are provided was 63. In addition to this, a very large number of children are seen who have bad habits of posture, and stand with drooping shoulders, flat chest and prominent abdomen. There

are six fully trained physical instructors for the girls' schools and the boys' schools are similarly equipped, but, owing to full school curriculum, only one or two periods per week are available for physical instruction. Better results would probably be obtained if a short period of 15 to 20 minutes daily could be arranged for each child, provided that, during the hot months of the year, this was given as early in the day as possible.

In many of the country schools no facilities are available for physical instruction, since the teachers, although willing and ready to undertake the work, have had no training in the subject. Some schools have been visited at intervals by the trained instructors who are able to supervise the teachers in this work, but there is room for expansion in this direction.

The value of systematic physical training to a child is very great. Its purpose is expressed clearly and definitely by Sir George Newman as follows:—

"A child's legs can generally take care of themselves, but the arms, the chest, the abdomen, the fine muscles of the hand, the co-ordination of all muscular effort and its sound nervous regulation, these are parts of the body and functions which need education and training. Games, dancing and swimming are ancillary to physical exercises in this behalf. Hence organised physical training is to aid in the growth and nutrition of the child; it is necessary even for the proportional development of its body and brain; it is a direct and effective means of personal health and body functioning; and it is a vigorous discipline for the body and mind. That is its physical value. It has also substantial educational advantage—promptitude of action, close attention, instant obedience, persistence and continuity, co-operative team work—these are not small things to secure in the rearing of a child."

Findings of Medical Inspection.

	Group 1.	Group 2.	Group 3.	Group 4.	Group 5.	Group 6.	Total	Per- centage
	Entrants.	Born 1926	Born 1923	Born 1921	Re-examinations	Specials.		
<i>No. examined</i>	1,317	598	525	518	295	611	3,864	
<i>Malnutrition</i>	98	27	20	4	16	11	176	4.5
<i>Skin Disease</i>	25	16	13	10	7	11	82	2.1
<i>Defective Vision</i>	44	34	67	64	58	52	319	8.2
1. Req. treatment	19	15	26	18	20	24	122	3.1
2. For observation	13	11	18	15	11	11	79	2
3. Treatment obt.	12	8	23	31	27	17	118	3
<i>Squint</i>	10	4	2	—	1	—	17	0.4
<i>Other conditions</i>	8	4	4	3	2	4	25	0.6
<i>Defective Hearing</i>	13	8	10	10	9	12	62	1.6
1. History of otitis media	3	—	4	4	6	5	22	0.6
2. Adenoids	—	3	—	2	1	—	6	0.1
3. Other causes	10	5	6	4	2	7	34	0.9
<i>Active otitis media</i>	2	1	—	1	1	—	5	0.1
<i>Tonsils—</i>								
1. Hypertrophy	170	90	51	42	31	44	428	11.1
2. Chronic tonsillitis	50	27	37	47	21	33	214	5.5
3. Removal advised	19	13	12	12	14	11	81	2.1
4. Removed previously	166	65	90	99	46	97	563	14.6
<i>Adenoids</i>	5	2	—	2	2	—	11	0.28

	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Total	Per- centage
	Entrants	Born 1926	Born 1923	Born 1921	Re-examinations	Specials		
<i>Heart—</i>								
Organic Disease	6	6	1	1	1	4	19	0.5
1. Rheumatic	2	4	—	1	1	1	9	0.23
2. Other causes	4	2	1	—	—	3	10	0.25
Functional Disease	33	10	11	7	4	9	74	2.0
1. Murmurs	22	8	5	4	3	8	50	1.4
2. Arrhythmia	6	1	4	2	—	—	13	0.3
3. Anaemia	5	1	2	1	1	1	11	0.28
<i>Lungs—</i>								
Bronchitis	6	3	1	—	1	1	12	0.3
Postural Defects	23	10	7	15	5	3	63	1.6
Deformities	9	6	5	6	1	1	28	0.7
Enlarged Spleens	20	13	10	7	12	17	79	2.0
<i>Nervous Diseases—</i>								
1. Epilepsy	—	—	—	1	—	—	1	0.026
2. Chorea	—	2	—	—	—	—	2	0.05
3. Others	15	7	2	1	1	1	27	0.7
Speech	3	—	1	1	1	1	7	0.18

(4) GOVERNMENT DENTAL SERVICE.

The Government employs two whole-time Dental Surgeons, one for the eastern division of the country with headquarters at Salisbury, and one for the western division with headquarters at Bulawayo. There is a clinic at both these centres.

Their work includes (1) the examination of school children and the provision of treatment in necessitous cases; (2) dental treatment of the B.S.A. Police and Permanent Staff, Defence Force; (3) dental treatment of European patients at Ingutsheni Mental Hospital. In addition to the above, urgent cases among prisoners are dealt with and from time to time, when opportunity offers, a limited number of indigent patients are treated at the Salisbury and Bulawayo clinics. Once a week, the Senior Government Dental Surgeon holds a clinic at the Salisbury Native Hospital.

Dental Treatment : B.S.A. Police.

	Salisbury Division	Bulawayo Division
No. of fillings	227	143
No. of extractions	183	48
No. of sealings	59	69
No. of other operations	46	27
No. of dentures	46	3
No. of dentures repaired	7	2

Indigent Europeans and Natives.

	Salisbury Division	Bulawayo Division
No. of extractions	697	357
No. of fillings	24	55
No. of scalings	4	8
No. of other operations	9	—
1 full upper and lower denture fitted.		

School Dental Service.

	Salisbury Division	Bulawayo Division
No. of children examined	2,226	1,733
No. of children treated	645	338
No. of fillings:		
Temporary teeth	92	110
Permanent teeth	891	679
No. of extractions:		
Temporary teeth	1,215	297
Permanent teeth	366	74
No. of other operations	23	1
No. of scalings	29	23

(5) HEALTH OF THE B.S.A. POLICE.

European.—During the year the number of cases receiving attention for illness or injury was 1,051, necessitating abstention from duty for 7,591 days, and light duty for 4,362 days. This shows an increase of 60 cases compared with last year.

Analysis of the causative diseases for 1935 shows that the main increases in incidence were due to influenza (39), malaria (24), sepsis (33), measles and German measles (23).

One case of blackwater fever and one case of enteric fever were reported during the year. The latter was a man who had attested prior to the inauguration of routine inoculation of recruits with T.A.B. vaccine and who consequently had never been inoculated. Since this system of inoculation was commenced in 1931 no case of enteric fever has been reported amongst members so treated.

There were seven discharges as medically unfit during the year, but of these three were for injuries received prior to attestation and not declared or apparent at the time of medical examination.

Two deaths occurred—one due to nephritis and the other to injuries received in a motor accident.

Natives.—The number of cases showed an increase of 142 over the previous year, but the average number of days lost per case only shows an increase of 0.09; the total number of days being 7,974 no duty and 2,866 light duty, compared with figures of 7,708 and 2,716 for 1934. Influenza increased by 23 cases, malaria by 20 and minor injuries by 33.

The incidence of venereal disease showed a further decrease from 66 cases in 1934 to 59 last year, of which 40 were syphilis.

General.—On a basis where the European strength is estimated as 540 members, the number of days lost per man was 18.09; for natives, the corresponding figures are 979 and 9.6. In the calculation of these figures, light duty is counted as being equal to half a day lost.

(6) MENTAL DISEASE.

A Bill has been drafted to bring the law relating to mental disorders into line with the most modern conceptions. The principal change which it is proposed to make in the law is that mental hospitals shall be thrown open to those who, in their own opinion or in the opinion of their relatives, require treatment. It is proposed that the Ingutsheni Mental Hospital will be so open without any legal intervention whatever. It must not be lost sight of

that mental disease is a definite disease just as is tuberculosis or influenza and that only the social consequences of such an illness have ever rendered any legal intervention necessary.

Dr. Rodger, the Medical Superintendent, Ingutsheni Mental Hospital, reports as follows:—On the 1st January, 1935, there were 346 patients on the register. During the year 193 patients were admitted, 113 discharged and 53 died. Five hundred and forty-five cases were treated, that is, 93 male Europeans, 64 female Europeans, 302 male natives and 86 female natives. There remained on the register on the 31st December, 1935, 379 patients, i.e. 57 male Europeans, 42 female Europeans, 217 male natives and 63 female natives; an increase of 33 over the number on the register on the corresponding date in the previous year.

Discharges.—Of the 91 certified cases discharged, 57 were discharged recovered, 15 were improved and handed over to the care of relatives; 18 were discharged by the order of the Magistrate on or before the expiration of the Urgency Order. Of the 22 voluntary patients who left the Hospital, 20 were relieved of the symptoms which caused them to seek treatment, and two were not improved. One male patient was discharged by escape. The recovery rate, calculated on the number of certified patients admitted, was 38%, European recoveries being 33.33% and native recoveries 43.13%. The total recovery rate, including voluntary patients, was 39.89%.

Voluntary Boarders.—It is pleasing to note that the number of patients taking advantage of the Voluntary Boarders' facilities has increased from 8 in 1934 to 25 in 1935. This suggests that the Mental Disorders Bill about to come before Parliament will, if passed, amply achieve its object.

Deaths.—Fifty-three deaths occurred during the year; of these, 10 were European and 43 were native. The death rate, calculated on the number of patients treated, was 9.72%. The rate for Europeans was 6.36% and for natives 11.08%.

Repatriations.—During the year 17 natives were repatriated on recovery, principally to Northern Rhodesia and Nyasaland.

Probation.—Liberation on probation was allowed in 15 cases. Two broke down and were returned to the Hospital before completion of the probationary period. Five recovered and 8 (4 male and 4 female Europeans) have not yet completed probation. Twenty-five patients applied for admission for voluntary treatment; of these 5 remained, undergoing further treatment.

Health.—The general health of the Hospital remains satisfactory. The influenza epidemic of the winter resulted in 3 male and 4 female native deaths. Routine examination of blood and C.S.F. of all admissions continues, and those giving positive Wassermann results receive appropriate treatment, with satisfactory reactions. Dental treatment is satisfactorily maintained, both among Europeans and natives.

Occupations and Amusements.—The occupation of the patients is well maintained. No male European whose mental and physical health permit is now idle, and all show commendable initiative in finding work for themselves. A gratifying feature of the year's work is the inception of a flower garden in the European Airing Court, made entirely by patient labour and on patient initiative. The male natives continue to be employed on garden and farm work. The female Europeans are still regularly employed on household work, and on sewing and gardening, and other light employment. The female natives supply working parties for weeding and similar work, at suitable seasons. The native vegetable garden is progressing very slowly, but even so provides employment for a considerable number. Handicraft work has not proved a success in this department. Apparently these women can only work with the materials to which they have been accustomed since childhood, and are not adaptable.

The occupational therapy scheme continues to progress, and contributes much to the steady employment of Europeans. It has a definite value in accelerating convalescence. The standard of entertainment is well maintained, but the library is unsatisfactory. The majority of the books are dull and out of date and the supply of new books is poor. The Cinema continues to be the most popular entertainment, and besides a fortnightly performance

here, parties of patients visit the Cinemas in Bulawayo. Increasing numbers of relatives are taking patients out for drives and these excursions are greatly appreciated by the patients concerned, and are very helpful once convalescence has begun.

Church Services.—The clergy of Bulawayo continue to provide a Sunday morning service, and visitation of patients is well maintained.

CHAPTER IV.—HOSPITALS AND LABORATORIES.

(1) HOSPITALS.

In Southern Rhodesia, the Government Hospitals not only afford accommodation and treatment for the indigent as is the practice in other countries, but here in addition adequate accommodation is provided for all classes of the population. Private patients who in other countries could only find the type of accommodation they require in the better class nursing homes, in Southern Rhodesia find suitable accommodation in the private wards of the Government Hospitals. This arrangement is suited to the present stage of development of a young country, but necessarily adds considerably to the size and cost of the Government Hospitals.

Expenditure on Government Hospitals, not including salaries of Government Medical Officers, was £106,282 in 1935. Revenue received was £32,721. The Government thus bore 69.21% of the cost. This shows a slight improvement on last year's figure, which was 71.5%. Of a total of 6,820 European patients, only 2,030 were free patients. It is clear from the above figures that the Government is bearing a large proportion of the cost of treating paying patients in addition to the cost of treating free patients.

Admissions of European, Asiatic, Coloured and Native inpatients and outpatients for the last four years have been as follows:—

<i>Inpatients.</i>				
	1932.	1933.	1934.	1935.
European	5,369	5,822	6,264	6,820
Asiatic, Coloured and Native	7,924	10,057	10,727	10,717
	<hr/> 13,293	<hr/> 15,879	<hr/> 16,991	<hr/> 17,537
<i>Outpatients.</i>				
	1932.	1933.	1934.	1935.
European	8,594	8,996	10,135	11,866
Asiatic, Coloured and Native	13,487	13,563	27,273	24,700
	<hr/> 22,081	<hr/> 22,559	<hr/> 37,408	<hr/> 36,566

NOTE.—The figures for 1935 in the above tables and those quoted in the following reports on hospitals do not include natives treated for venereal disease.

Salisbury Hospital.—The work of this hospital during 1935 shows an increase in all departments. The European admissions this year totalled 2,598, an increase of 73 on last year's figure, which was a record. The European outpatients during 1935 totalled 4,535, an increase of 301 on the previous year. The native admissions were 2,109, which figure shows the substantial increase of 352 on last year's record. Native outpatients treated numbered 8,777—almost double the number treated last year, which was again a record.

This year 1,612 operations were performed, 435 being classed as major and 1,177 minor—an increase of 88 on the figure for 1934. In the X-ray department 2,006 cases were examined—an increase of 659 on the figure for the previous year. The new block is nearing completion; this block will provide suitable accommodation for X-ray investigation and treatment, radium therapy, physio-therapy; outpatients and two much needed operating theatres.

Memorial Hospital, Bulawayo.—The number of European admissions to this hospital continues to rise. This year 1,964 cases were admitted, an increase of 151 on the figure for 1934, and an increase of 225 on that for 1933. In the European Outpatients' Department, 5,331 cases were treated, an increase of 493 on the number in 1934. The figures for the native hospital

also show considerable increase, both in admissions, and in outpatients' department. Native inpatients treated, 3,203, an increase of 728 on the admissions for 1934, and 11,509 outpatients, an increase of 1,675 on the number treated in 1934.

During the year 1,437 operations were performed, 440 being classed as major and 997 as minor. In addition the outpatient department dealt with 465 operations. During 1934 the total was 1,649 with 418 classed as major. Scurvy was prevalent amongst natives during the latter months of the year—due, it is thought, to the lack of green wild vegetables owing to the prolonged drought. Of the more serious cases 190 were treated in hospital, with 5 deaths.

Umtali Hospital.—During the year 1,257 cases were admitted for treatment in the Umtali Hospital; 502 of these were Europeans and 755 were natives. This figure shows a big increase over those for the two previous years, which were 1,030 and 1,061 respectively. In the outpatient department 1,154 cases were treated, 949 of these being natives. Malaria was again prevalent and accounted for 107 European and 158 native admissions. In both races the Benign Tertian variety was more common than the Subtertian. Six European cases of blackwater fever were treated with 1 death, 12 European cases of pneumonia with 6 deaths and 37 native cases with 11 deaths. Influenza was prevalent throughout the district.

Gwelo Hospital.—Admissions were 419 Europeans and 996 natives, making a total of 1,415. This shows an increase of 255 on the total for the previous year, when 381 Europeans and 779 natives were admitted. Operations performed numbered 345, of which 106 were major and 239 minor. Of these 182 were performed on natives and 163 on Europeans. Work on the foundations for the new European hospital and the building of the new Nurses' Home is well advanced. A garage has been completed at the Native hospital for the new ambulance.

Gatooma Hospital.—Total admissions were 1,700, of which 604 were European and 1,096 native. These figures again show a big increase in the work done. Operations performed numbered 295, compared with 168 last year; of these 90 were major and 205 minor. European cases of malaria treated numbered 176; all were of the Subtertian variety. Cases of blackwater reported numbered 10, with a 50% mortality. Of these cases 9 occurred during the first four months of the year. There were 17 cases of pneumonia, with 3 deaths; 14 of these cases occurred in July and August. Immunisation against diphtheria was started and 47 Schick tests were carried out in December; the vast majority proving positive.

Fort Victoria Hospital.—The number of admissions continues to rise; and was 596 for the year under review—of these 164 were Europeans and the remainder natives. Last year the total was 558 and the previous year 472. The number of operations has also increased from 34 last year to 113 this year. A portable X-ray plant has been in use since September and has proved of great value. During the four months it has been available, 37 plates have been taken. Malaria accounted for 42 of the European admissions and blackwater for 3.

Gwanda Hospital.—Dealt with 78 Europeans and 613 natives, as well as 220 cases of venereal disease. Amongst natives scurvy averaged 4.4 cases per month until October, when the incidence rose to 15, 27 and 47 during the last three months of the year. This increase is attributed to drought. European and native cases of tuberculosis numbered 38, with 6 deaths. An investigation is at the moment being conducted to ascertain the cause of this high incidence of tuberculosis.

Enkeldoorn Hospital.—European and native admissions numbered 148 and 476 respectively and, in addition, 152 natives were treated for venereal disease. Operations performed, 89. Malaria, dysentery and pneumonia were the most prevalent diseases in the order mentioned.

Shamva Hospital.—European and native admissions totalled 68 and 415 respectively; in addition, 249 native cases of venereal disease were admitted, bringing the total up to 732. Malaria accounted for 34 and blackwater for 3 of the European admissions. 27 native cases of pneumonia occurred with 11 deaths.

Sinoia Hospital.—There was a considerable increase in both European and native admissions; the former total 206 and the latter 498, in addition to 184 venereal disease cases; compared with 125 and 530 respectively last year. An interesting chart shows the steady increase in the work of the native hospital since 1930 and a rapid rise during 1934 and 1935, when the peak was reached. Maternity cases admitted numbered 13 and these were dealt with by the ordinary nursing staff, all of whom have the midwifery qualification. The scheme has proved very satisfactory. Operations performed amounted to 58. Tuberculosis exacts a toll of native deaths in the Lomagundi district and is seen with increasing frequency among the indigenous natives from the reserves. Venereal disease is increasing and schistosomiasis appears to be prevalent amongst natives in the Zwimba Reserve.

(2) LABORATORY SERVICES.

(a) *Public Health Laboratory and Pasteur Institute, Salisbury.*

The work of the Laboratory both in regard to its routine and its research activities shows a further increase during 1935. Thus on the routine side 21,114 examinations were carried out and in the matter of research investigations the list of publications at the end of this report will serve as an index of the activities in this direction.

In the last few years the work of this Laboratory has increased steadily both as regards the number of tests performed and the range of the investigations carried out. The former fact can readily be illustrated by the following figures taken from the Annual Laboratory Reports of the last five years. Thus in 1931 the laboratory examinations for the year numbered 6,518; in 1932, 13,305; in 1933, 16,687; in 1934, 18,807; and in 1935, 21,224.

BACTERIOLOGY:

Faeces.—During the year 297 bacteriological examinations were carried out, 201 of these on European cases, and 96 on Native cases, and 33 positive results were returned as follows:—

European:

<i>B. dysenteriae</i> Shiga and <i>B. dysenteriae</i> Flexner "V" & "Y"	14
<i>B. dysenteriae</i> Sonne	1
<i>B. morgani</i>	2
<i>B. typhosum</i>	1
Total	18

Native:

<i>B. dysenteriae</i> Shiga	3
<i>B. dysenteriae</i> Flexner "V" and "Y"	4
<i>B. dysenteriae</i> Dispar	2
<i>B. morgani</i>	3
<i>B. typhosum</i>	2
<i>Ps. pyocyanea</i>	1

The finding of *B. dysenteriae* Sonne in a European is interesting, as it appears to be the first recorded instance in this Laboratory, but as the patient had recently travelled extensively throughout Africa, it is probable that his infection was not indigenous.

Urines.—A total of 638 urines was examined bacteriologically, and again a very high percentage of positive cultures was obtained from European patients—258 out of 593 urines showing coliform bacilli. But as mentioned in last year's report, many of these results do not represent pathological conditions, since microscopic examination of the centrifuged specimen frequently yields no abnormal findings. Nevertheless it appears that urinary sepsis is frequent among adult European females.

Natives.—45 urines were cultured and 7 yielded organisms of the *coli* group.

Two native urinary carriers of *B. typhosum* were also detected.

Blood Cultures.—This year has seen a slight increase in these diagnostic procedures. From Europeans 41 cultures were made, and *B. typhosum* was isolated 9 times, *B. alkaligenes* 1, and a haemolytic streptococcus from a case of puerperal septicaemia on one occasion. 10 cultures from Natives were made, and 2 yielded *B. typhosum*.

Throat and Nasal Swabs.—There was a very large increase in the number of swabs examined, 1,342 swabs being received for the demonstration of the *C. diphtheriae*. From Europeans, 1,172 swabs were examined, and 150 positive results were returned (some of these being repeat examinations). 170 swabs were examined from Natives, and 3 were found to be positive.

Many of these swabs were submitted as a result of investigations into the carrier rate of Hospital personnel, European and Native, in conjunction with routine Schick testing.

Sputa.—293 specimens were examined for *M. tuberculosis*, and 60 positive results were returned: Europeans—147 negatives and 50 positives, Natives—66 negatives and 10 positives.

Many of the European positive results are derived from repeat examinations. It is still our practice to concentrate the sputa by the antiformin method in most cases.

Urethral and Cervical Smears.—319 smears were examined. (Europeans 145 negatives, 89 positives; Natives 55 negatives, 30 positives.) The figures recorded resemble very closely those obtaining in the Laboratory returns of last year.

Leprotic Material.—One European leper was detected during the year, and 165 specimens from Natives under the care of the Mtemwe Leper Clinic showed 71 positives.

Cerebro-Spinal Fluid.—61 specimens were examined with the following results:—*European*: Negatives 13, Meningococcus 3, Pneumococcus 2 and *H. influenzae* 1. *Native*: Negative 19, Meningococcus 14, Pneumococcus 5, *Strept. pneumoniae* 2, and *H. influenzae* 1.

Water and Milk.—A very great increase in the number of bacteriological examinations of water took place this year, 130 such analyses being done, as against 49 last year.

14 samples of milk or cream were also examined.

Vaccines.—Again an increase must be recorded, 136 autogenous vaccines being prepared and issued, last year's figure being 97. The majority of the vaccines prepared are intended for therapeutic application in the numerous catarrhal and bronchitic conditions met with in this area.

Miscellaneous.—Among many bacteriological investigations not detailed above is included the isolation of several strains of *Br. abortus* from Rhodesian bovines, by the inoculation of the centrifuged deposits of "single" milks into guinea-pigs, and the subsequent recovery of the organisms from these animals at autopsy. These all appeared to be *Br. abortus bovis* and to be identical.

SEROLOGY:

Agglutination Tests.—Numerous agglutination tests were again carried out for routine diagnostic purposes, chiefly in suspected enteric fevers, and the following detailed results were obtained. *European*: 200 negatives, 32 positives *B. typhosum*, 2 *B. paratyphosum* A, 2 *B. alkaligenes* and 4 *Br. abortus*. Total 240. *Natives*: 98 negatives, 17 positives *B. typhosum* and 4 *B. alkaligenes*. Total 119. All the positive results represent "diagnostic titres." It will be seen that no paratyphoid or brucella infections were encountered among the natives, and no paratyphoid "B" among the Europeans.

In the report for 1934, mention was made of the investigation of the agglutinin content of sera from supposedly normal natives. This work has been carried on again this year and the results obtained embodied in a series of papers—*vide* List of Publications at end of Report.

Weil Felix Reaction.—10 sera were examined and 3 positive results were obtained. The paucity of cases this year has militated against further laboratory investigation of Tick Typhus, but it is hoped adequately to study the antigenic aspect if sufficient cases develop next year.

Complement Fixation Tests.—2,264 Wassermann tests were done (387 European, 1,877 Native) with the following results:—

European: 42 positives; 13 doubtful; 332 negatives.

Natives: 644 positives; 87 doubtful; 1,146 negatives.

There is a very marked increase in the number of tests this year, both on European and Native sera. It will be noted that a high percentage of the Native sera were returned as positive; the great majority of the positive reactions may be regarded as due to syphilis, not yaws, as many of the positive sera were from native females attending the V.D. Clinic instituted by the local Medical Officer of Health.

PARASITOLOGY:

Faeces.—1,020 specimens of stool were examined for evidence of parasitic infection.

European specimens: 386. *Protozoa*: *Entamoeba histolytica*, 7; *Entamoeba nana*, 4; *Giardia lamblia*, 4; *Iodamoeba bütschlii*, 1; *Trichomonas intestinalis*, 1. *Helminths*: *Bilharzia mansoni*, 19; *Trichuris trichiura*, 3; *Tænia* spp., 3; *Heterodera radiculicola*, 2; "*B. matthei*," 2; *Enterobius vermicularis*, 1; *Ascaris lumbricoides*, 1; Hookworm, 1.

Native specimens: 634. *Protozoa*: *Entamoeba histolytica*, 2; *Giardia lamblia*, 2; *Iodamoeba bütschlii*, 2; *Balantidium coli*, 2; *Entamoeba nana*, 1; *Trichomonas hominis*, 1. *Helminths*: Hookworm, 165; *B. mansoni*, 78; *Tænia* spp., 12; *B. hæmatobium*, 10; "*B. matthei*," 5; *A. lumbricoides*, 4; *H. nana*, 3; *T. trichiura*, 3; *Trichostrongyle*, 2; *B. vermicularis*, 2.

Urine.—2,252 specimens of urine were examined for evidence of infection with *B. hæmatobium*.

European specimens: *B. hæmatobium* was demonstrated 58 times in 1,583 specimens examined—an incidence of 3.6 per cent. Since the majority of urine specimens examined are obtained from adults this percentage cannot be regarded as representative of the incidence of urinary bilharziasis in the different sections of the European community.

Native specimens: 669 samples of urine were examined and *B. hæmatobium* found in 125—an incidence of approximately 18 per cent. in a mixed native community.

Blood.—*Plasmodia*: 2,326 blood films were examined, distributed as follows:—Europeans, 1,550; Natives, 776.

Amongst the films prepared from European cases *P. falciparum* was found on 236 occasions and *P. vivax* on 22, whilst the blood films from Native cases showed ring forms of *P. falciparum* on 231 occasions, gametocytes of *P. falciparum* 13 times, and trophozoites of *P. malariae* twice. As in previous reports these results show a preponderance of *P. falciparum* infections, but it is obvious that cases of *P. vivax* and *P. malariae* infections are likely to be encountered from time to time. So far *P. ovale* has not been found in this country.

Babesia: 155 blood films from dogs were examined and *Babesia canis* found in 60 cases.

Trypanosomes: No European cases of trypanosomiasis were encountered during the year, but *T. rhodesiense* was demonstrated in a native showing clinical signs of the disease. This strain is being passaged in laboratory animals. *T. brucei* was found in a dog that had been exposed to infection in one of the "fly areas."

Spirochaetes: *Treponema recurrentis* was demonstrated on three occasions in Natives.

Filaria embryos: No filaria embryos were demonstrated in any of the eight thick smear preparations examined during the year.

In the latter months of the year 1934 an investigation was started with a view to assessing the incidence of parasitic infections amongst the European

members of the Native Department and at the end of 1934 a preliminary report was issued on the results obtained from the examinations carried out on 17 members. A specimen of stool and urine together with a blood film are examined in each case, full instructions as to the collection and transmission of samples being sent out with the containers and slides. The investigation was continued throughout 1935 and 43 Native Department officials have now been examined.

The findings are as follows:—

B. mansoni, 9 cases; *Ascaris lumbricoides*, 3; *Tænia saginata*, 1; *Giardia lamblia*, 1; *P. falciparum*, 1.

Thus approximately 35 per cent. of the group examined showed evidence of parasitic infection and it is worthy of note that *B. mansoni* constitutes the major infection in this series. Since these results are based on a single examination of material collected by individuals unacquainted with collection procedures it may be argued that the infestation rate recorded is significantly lower than it should be. At the same time it lends strong support to the plea that all who work in districts remote from towns and townships should be parasitologically examined at least twice a year.

PATHOLOGY:

Post-mortem Examinations.—265 post-mortem dissections were performed during the year—clinical 138; medico-legal 127.

An analysis of the post-mortem findings shows that pulmonary infections and acute intestinal infections account for approximately 40% of the deaths amongst Natives coming to autopsy during the year under review.

Thus the case incidence is as follows:—

Lobar pneumonia, 36; broncho-pneumonia (including 8 cases of tubercular broncho-pneumonia), 32; bacillary dysentery (acute, 23; chronic, 7), 30; typhoid fever, 12.

Another important cause of death is meningitis, which occurred as follows:—Meningococcal, 8; pneumococcal, 2; influenzal, 1.

Space does not permit of a detailed account of the post-mortem findings being given, but attention is drawn to the incidence of volvulus as a cause of acute intestinal obstruction in Natives. This condition was met with on seven occasions, mostly in young adult males, although on one occasion it was demonstrated in a week old male infant.

Cysticercosis is another condition to which attention is drawn. Cerebral cysticercosis was encountered in five cases which had been brought to hospital in deep coma and in which death had occurred before a diagnosis could be established. In those cases multiple cysts were scattered throughout the cerebral substance, and the post-mortem findings suggest that death was due to a rupture of a cyst into the ventricular system. The whole subject of cerebral cysticercosis has been adequately discussed by Major-General MacArthur, and more recently by Dixon and Smithers, who state that "any patient previously healthy who develops fits or anomalous nervous symptoms and who has lived abroad should be suspected of suffering from cysticercosis until proved otherwise." The current autopsy results suggest that in investigating epilepsy or other obscure nervous conditions in Natives the dictum of Dixon and Smithers should be kept in mind. As MacArthur says, the cysticerci are as "thieves who have entered some premises where they stay hidden as long as concealment is helpful to their purpose."

HISTOLOGICAL EXAMINATIONS:

The tissues examined during the year numbered 305 and the following is an analysis of the main conditions encountered.

Tumours:

Simple Tumours: Lipoma, 1; Fibroma, 6; Papilloma, 5; Polypi, 1; Fibro-myoma, 5; Fibro-adenoma of breast, 6; Fibro-adenoma of prostate, 1; urethral caruncle, 1.

Malignant Tumours: Sarcoma, 3; squamous epithelioma, 9; carcinoma of cervix, 3; of uterus, 5; of breast, 4; of liver, 1; of penis, 1; of colon, 2; of testis, 1; secondary deposits in lymph glands, 3; mixed parotid tumour, 1; basal cell carcinoma 1; astrocytoma, 1; melanoma, 1.

Acute Conditions:

Appendicitis (catarrhal and suppurative), 11; acute glomerulonephritis, 1; lobar pneumonia, 1.

Chronic Conditions:

Chronic cholecystitis, 7; chronic bursitis, 1; granulation tissue, 4.

Granulomata:

Leptotic tissue, 1; lymphadenoma, 1; tubercular granulation tissue, 1; tubercular broncho-pneumonia, 1; tubercular adenitis, 1.

Parasitic Infections:

Trypanosomiasis, 2; bilharzial appendicitis, 3.

Miscellaneous:

Cholesterosis of gall bladder, 1; accessory mamma, 1; radiculo-dental cyst, 1; cerebral infarct, 1; decidua, 6. In addition, several tissues of no special interest were examined.

BIOCHEMISTRY:

In the division of Biochemistry the tests carried out during the year totalled 591, which may be summarised as follows:—

Blood Examinations.—Fasting sugar, 89; sugar tolerance tests, 6; urea, 51; non-protein nitrogen, 42; hæmoglobin (Newcomer), 77; bilirubin, 23; calcium, 39; chlorides, 2; inorganic phosphorus, 2; iron, 1; plasma fibrinogen, 1; plasma albumin, 2; plasma globulin, 2.

Urine Examinations.—Urobilin, 63; spectroscopic examination for hæmoglobin derivatives, 37; urea, 12; calcium, 1; diastase, 2; bile salts, 3; sugar (quantitative test), 2.

Stool Analysis.—Occult blood, 16; total fats, 5; neutral fats, 5.

Cerebro-Spinal Fluid.—Lange's colloidal gold test, 12; sugar, 3; urea, 4; non-protein nitrogen, 2; chlorides, 3; globulin, 4; albumin, 1.

Stomach Contents.—Fractional test meal, 75; Ewald's test meal, 6. An analysis of the test meal results shows the following "acid incidence":—achlorhydria, 8; hypochlorhydria, 6; normal acidity, 45; hyperchlorhydria, 16.

Gall Stones.—Four specimens were analysed with a view to ascertaining the chemical composition of the stone.

In addition to the foregoing routine work, two hundred blood tests were carried out on Natives with a view to determining their normal blood chemistry constants. These tests included the estimation of the fasting blood sugar, chlorides, non-protein nitrogen, urea, cholesterol, plasma calcium and plasma phosphorus. The salient feature in the Native blood chemistry is the wide variation in cholesterol. The figures obtained varied from about half the low normal European values (150-200 mgms. per 100 c.c. blood) to approximately the upper limit of the normality range. The reasons for this variation are not known at present, but are being investigated.

The calcium and phosphorus values obtained tend to fall within the lower reaches of the European normality range, but some values obtained fall distinctly below this range. These low figures are presumed to be due to a lack of the elements in the dietary of the Native, but this aspect of the problem is being investigated.

Similarly low normal values were obtained with the blood sugar estimations, whilst chlorides, non-protein nitrogen and urea occupied a middle position in the normality range.

The following table summarises the work up to the end of 1935. The European values appearing in the table were taken from M. Bodansky's "Introduction to Physiological Chemistry," 3rd edition, 1934, and from C. A. Harrison's "Chemical Methods in Clinical Medicine," 1930.

TABLE I.
BLOOD CHEMISTRY IN NORMAL EUROPEANS AND IN A SERIES
OF 30 RHODESIAN NATIVES.

(The values are given in mgms. per 100 c.c. of blood.)

	Normal Europeans.		Thirty Natives.	
	Range	Mean	Range	Mean
Sugar	80-120	100	62-117	86.6
Chlorides	270-320	300	250-330	286.4
N.P.N.	25-50	35	24.0-43.0	35.2
Urea	15-40	30	16.1-31.1	24.9
Cholesterol	150-200	175	75-190	126.8
Calcium	9-11	10	6.0-11.0	9.11
Phosphorus	2.5-5.0	3.7	1.65-4.10	2.92

This investigation is continuing and a paper will be published shortly.

SKIN TESTS:

Hay Fever.—It is becoming increasingly apparent that hay fever or rather pollinosis is a relatively common complaint in this colony, and presents a characteristic seasonal incidence. In the majority of cases the attack begins in the early part of November and continues intermittently until March or April of the following year. So far pollinosis has not been encountered amongst the Native races of Rhodesia and it appears to be most common amongst Europeans resident in the upland regions rather than in the valleys. The pollens responsible for the condition are derived mainly from grasses and/or flowers of the genus *Compositæ*. Only one case of pollen sensitivity to tree pollen has been encountered so far, the tree in this case being the pepper tree which is rare in Southern Rhodesia. The only weed of aetiological significance appears to be the Khaki weed, but this aspect of the problem has not been very fully investigated. Thus the hay fever season in this country is in the main confined to the period already mentioned.

The fuller appreciation of pollinosis as a form of atopy has resulted in the more extended use of skin tests in the detection of the sensitising agent. During the year a total of 38 patients were tested for cutaneous sensitivity with the eight stock extracts prepared by the South African Institute for Medical Research and 27 positive reactions obtained. These may be summarised as follows:—

Positive reactions with Mixed <i>Compositæ</i> Extract	6
" " " Mixed Grasses Extract	16
" " " Pepper Tree Extract	2
" " " Orris Root Extract	1
" " " Mixed Animal Epidermis	1
" " " Khaki Weed Extract	1

MANTOUX TESTS:

Using 1 in 1,000 dilution of Old Tuberculin 35 Mantoux Tests were performed and the following positive results obtained:—

Europeans, 20; Natives, 4.

DICK TESTS:

3 Dick Tests were carried out on adults and 2 positive results obtained.

SCHICK TESTS:

455 Schick Tests were performed during the year using the material supplied by the South African Institute for Medical Research, each test consisting of a test and a control injection. These tests were carried out on children of school age and the following results were obtained:—

Positive, 236; Negative, 219.

In the course of the year an attempt was made by means of the Schick Test to assess the immunising value of the diphtheria anatoxine in common use throughout the country. The results obtained are being investigated by the Serology Department of the South African Institute for Medical Research.

CLINICAL PATHOLOGY:

Hæmatology.—A steady increase has taken place in routine hæmatological investigations during the last two years due to a keener appreciation of the significance of the anæmic states in the causation of conditions of vague ill-health, particularly amongst Europeans. Thus 745 blood counts were carried out during the year, as follows:—

Europeans: Complete counts, 72; red cell counts, 200; total white cell counts and differential counts, 173; differential counts on smear preparations, 187.

Natives: Complete counts, 9; red cell counts, 29; total white cell and differential counts, 9; differential counts on smear preparations, 66.

Attention has already been drawn to the incidence of anæmic states amongst Europeans resident in Southern Rhodesia and the work of the current year confirms the earlier findings. The subject has been discussed in general terms in a recent publication—*vide* list of publications at the end of this Report.

Reticulocyte Counts.—A special investigation of the reticulocytes in experimental trypanosomiasis was carried out during the year. A strain of *T. brucei* recovered from a dog was inoculated intraperitoneally into guinea pigs, white rats and rabbits and the reticulocyte response studied in the two latter animals. In the white rat with its highly plastic marrow a vigorous reticulocytosis occurred approximately seven days after an intraperitoneal injection of infected blood. Coincident with reticulocytosis, nucleated red cells appeared in the peripheral circulation. The reticulocyte response was sustained for a few days, then as the trypanosomes continued to increase the percentage fell away rapidly to sub-normal levels and the animal eventually succumbed to trypanosomiasis.

In the rabbit the hæmatological response to infection with *T. brucei* was studied in greater detail. Full blood counts were carried out at intervals and the Van den Bergh reaction ascertained with a view to determining the mechanism of the blood changes. It is not possible in the space available to give detailed accounts of the findings, but it may be stated that a reticulocyte response was observed to occur about 14 days after inoculation, and as in the case of the white rat, the response was sustained for a week or ten days and was subsequently maintained at a level which fluctuated slightly above normal values. The red cells counts fell rapidly soon after the infection had established itself, to rise again in response to the reticulocytosis, but as the reticulocyte counts fell an anæmia gradually developed and persisted until death or until the infection had been cut short by an injection of trypanamide. It is proposed to discuss the subject in greater detail in a paper to be produced at a later date.

Blood Grouping and Blood Transfusions.—The blood group was ascertained on 38 occasions mainly in connection with cases for blood transfusion but also in relation to an investigation into the blood groups of the native races of the country.

The demands on the Blood Transfusion Service, organised by the Laboratory, have been heavier than in previous years, the total number of transfusions arranged for numbering 22.

Urine Analysis.—A full cytological and chemical analysis was carried out on 2,252 specimens of urine. The rule in this Laboratory is that all specimens of urine are subjected to a full analysis whether specifically asked for or not, with the result that on three occasions during the year unsuspected cases of diabetes mellitus were brought to light.

Biological Tests—Tuberculosis.—Seven guinea pig inoculations were carried out during the year and one positive reaction obtained from a patient who subsequently died of genito-urinary tuberculosis.

Trypanosomiasis.—A large series of animal inoculations were performed in connection with the reticulocyte studies already referred to, the various animals used being rabbits and white rats. In addition, guinea pig inoculations are carried out at intervals in order to maintain the strain in the Laboratory.

Pregnancy Diagnosis Tests.—The Freidmann modification of the Zondek-Ascheim Test was performed on ten occasions. The procedure adopted is as follows: Seven to ten c.c. of a catheter specimen of urine is inoculated intravenously into an adult female rabbit which has been isolated for at least three weeks to enable the ovaries to revert to the resting stage. After 24 to 48 hours a laparotomy is performed under pernocton anaesthesia and the ovaries and uterine tubes examined microscopically. Laparotomy has the obvious advantage that the same rabbit may be used on repeated occasions at suitable intervals.

Pasteur Institute: Report.—A marked increase in the work of the Pasteur Institute occurred during the year. Thus, 53 courses of anti-rabies vaccine were issued to the neighbouring countries, Nyasaland, Northern Rhodesia, and Portuguese East Africa, and 2,968 c.c. of vaccine prepared. In order to meet the increased demand for vaccine sheep are now being used in addition to rabbits for the purposes of preparing an adequate volume of material. The sheep are supplied through the courtesy of the Director of Veterinary Research, Salisbury.

PUBLICATIONS:

The following papers were published by members of the Laboratory Staff during the year:—

1. BLACKIE, W. K.—“The Reticulocytes in Blackwater Fever,” *Trans. Roy. Soc. Trop. Med. and Hyg.*, 1935, Vol. XXVIII., No. 6, pp. 571-578.
2. BLACKIE, W. K.—“A fatal case of Plasmoquine Poisoning,” *South African Medical Journal*, 1935, Vol. IX., pp. 147-148.
3. BLACKIE, W. K.—“Observations on the Anaemia Problem in Southern Rhodesia.” In the Press (*South African Medical Journal*).
4. ALVES, W.—“Unwrapped Bread and Intestinal Bacteria,” *South African Medical Journal*, 1935 (Quarterly Scientific Number), Vol. IX., No. 6.
5. ALVES, W.—“T.A.B. and Brucella Agglutinins in an uninoculated Native Population,” *South African Medical Journal*, 1936 (Quarterly Scientific Number), Vol. X., No. 1.
6. ALVES, W.—“‘O’ Agglutinins for *B. typhosum* in an uninoculated Native Population,” *ibid.*, 1936, Vol. X., No. 1.
7. ALVES, W.—“‘Normal’ Agglutinins and their bearing on the Diagnosis of Typhoid Fever by Agglutination Tests,” *ibid.*, 1936, Vol. X., No. 1.
8. ALVES, W.—“Blackwater Fever: Laboratory findings and methods in the Study of the Disease.” In the Press (*Laboratory Journal*, London).
9. ALVES, W.—“Immunological Tests in the Diagnosis of Typhoid Fever.” In the Press (*Laboratory Journal*, London).

W. K. BLACKIE, M.D.,
Director.

(b) REPORT OF THE DIRECTOR, BULAWAYO BACTERIOLOGICAL INSTITUTE.

Dr. G. R. Ross reports as follows:—

The number of specimens examined during the year was 2,725, an increase of 313 over the number for the previous year of 2,412. These investigations were of a routine nature only and the distribution among the contributing authorities was as follows: Government, 1,382; Railways, 324; Municipality, 51; Private, 968.

A few of the commoner examinations asked for may be summarised. Malarial parasites were found in 41 of 253 slides examined for that purpose. The dominant plasmodium continues to be *P. falciparum*, *P. vivax* being demonstrated in one slide only. Of other blood parasites, *Sp. Duttoni* was found on four occasions, all in native patients. Attention has been drawn to the occurrence of this parasite in the last three reports from this Institute. At present the disease appears to be endemic without any tendency to assume epidemic proportions, due almost certainly to the fact that the vector is a tick of the *Ornithodoros* group.

Thirty-five blood cultures were made, and *B. typhosus* was isolated in four instances. The Grunbaum-Widal reaction was positive in 32 instances out of 93 tests made. The Wassermann reaction was made on 751 specimens of blood or cerebro-spinal fluid; of these 189 were positive, 72 were doubtful or partial and 490 were negative. In addition the Kahn test was done at the same time on 177 of these specimens; 45 gave a positive result, 13 were doubtful and 119 negative.

One hundred and ninety-two sputa were examined for the presence of *M. tuberculosis* and of these 36 were positive. *C. diphtheriae* was found in 16 of 126 swabs examined. Ova of *S. haematobium* were found in 33 instances, the infection as in previous years being commonest in European juveniles. *B. anthracis* was found in four cases of cutaneous anthrax in natives. It is interesting that the discovery of one case was instrumental in drawing attention to the existence of the disease in the herd of cattle with which he was associated. Of 81 urethral or cervical smears examined 29 were positive for gonococci, and this organism was also demonstrated in two smears from the conjunctiva. In two cases of purulent vaginal discharge which were negative for gonococci further examination showed the presence of *Trichomonas vaginalis*. An interesting case of myiasis occurred in an infant three days old in which larvae were found in the ear and stump of the umbilical cord. These have been provisionally identified as *Lucilia cuprina*, but the larvae have been sent to England for final identification.

Biochemical investigations have been as follows: Blood sugar estimations, 21; sugar tolerance tests, 2; non-protein nitrogen or urea estimations, 5; test meals, 5.

(c) REPORT OF THE GOVERNMENT ANALYST, SALISBURY.

Mr. A. W. Facer, B.A., F.I.C., Government Analyst, reports that 501 samples and exhibits were dealt with as follows:—

Exhibits in connection with Criminal Investigations—

Exhibits for presence of poisons	103
Exhibits for presence of blood stains	42
Exhibits for presence of seminal stains	31
Miscellaneous forensic exhibits	30

Samples of Water—

General analysis for human consumption	33
River water for traces of arsenic	1
For boiler purposes	1
Distilled water (suitability for batteries)	2
For suitability for fish culture	1
Mineral and thermal springs	4
From school swimming bath	1
In connection with cases of typhoid	6
For general toxicological examination	1
Cow's milk	119
Human milk	7
Cheese	6

Cream	1
Hop beers	61
Wines	2
Fruit syrups (Sirop de Grenadine)	1
Whisky (for suspected harmful adulteration)	1
Disinfectants for Government contracts	6
Soaps	12
Tinned salmon	4
Maize meal	2
Miscellaneous	23
Total	501

Though of use in classifying the work, indicating its range and distribution and marking development from year to year, our sample numbers are inclined to mislead if taken as basic comparative criteria of the actual work performed. For example a dozen analyses of portions from different places may be necessary with one exhibit submitted for investigation as to the presence of seminal or blood stains, and if the latter should be found microchemical analysis must be supplemented by the most meticulously performed and controlled precipitin work in order to decide whether or not the blood is of human origin. Similar conditions obtain in the isolation and identification of traces of poison in human remains, and in the performance of a large proportion of our forensic investigations. The fact that the number of samples dealt with in only seven months of normal operations is 501, as compared with 567 for the whole of last year, is, however a clear and proportionate index of the rapidly increasing manner in which the services of the Branch are being requested and utilised.

Criminal Investigations.—Toxicological exhibits usually arrive in groups with a view to (a) establishing by analysis whether or not life has been destroyed or endangered by the administration of an identifiable poison; (b) discovering the manner in which the poison was procured and administered in order to establish the identity of the culprit. As regards (b) it will be obvious that a considerable number of analyses of foods, cooking utensils, pockets, etc., may be necessary to arrive at a complete solution of any given case.

The 103 specimens dealt with during the year were submitted in connection with 32 cases, almost all of which involved charges of murder. Poisons were identified in 13 cases, and in many of them analysis established cardinal evidence regarding the guilty persons. Most of the investigations were in connection with the native population, but two of them concerned Europeans. Arsenic was found in nine cases, cyanide in two, and cantharides in one case. In one of the European cases a "native" preparation containing crushed charred roots was employed. The almost complete ignorance of the properties of the indigenous flora and of the preparations which witch doctors and others concoct from them renders the production of substantial evidence very difficult in this type of case.

Water Samples.—The 33 samples for suitability for human consumption comprised numerous specimens from Government Institutions (schools, police camps, hospitals, etc.), from the local authorities of several townships throughout the territory and a few from private individuals. Charges are made for the analyses of all but "Government" samples, although the amount charged may be reduced considerably where the circumstances are proved to be necessitous. One analysis showed that a bulk of distilled water being offered for use in an automatic telephone exchange was of seriously inferior nature.

Further analysis of a homestead spring (in the Rusape district) which had caused serious chronic illness and had been found to contain arsenic, proved to be of special interest. At first seepage from surface spraying against locusts had been suspected, but the fact that the arsenical content had remained practically constant (approximately one grain of arsenious oxide per gallon) during the greater part of 1934 had suggested that this might not be the case, and that contamination was due to some inherent geological feature. It was therefore of considerable interest to find that a sample submitted recently contained no trace of arsenic. The matter, which evidently has important bearings upon arsenical spraying, is being followed up, and a series of analyses will be made at intervals during 1936. The thermal and mineral spring samples which were collected

during the trypanosomiasis survey in the Zambesi Valley and elsewhere did not comprise any of particular importance. The most interesting was a highly sulphuretted alkaline thermal spring in the Sebungwe area.

Milk Control.—In general the results again showed that analytical control has effected marked improvement in nutritional value. The fact that the average dairyman in various parts of the country appears to find no difficulty in supplying a product which conforms to the standard—which is 3 per cent. fat and 8.5 per cent. solids-not-fat—would appear to indicate that there is no sound basis for the suggestion (which has occasionally been made) that this standard is too high. None the less the fact that seven samples were found to be so inferior as to make it necessary to institute legal proceedings shows the importance of effective analytical control.

Tinned Foodstuffs.—As an adverse report may lead to the destruction of considerable stocks of high priced merchandise, these analyses are likely to throw particularly serious responsibility upon the chemist, who must entirely eliminate risk to the public and at the same time prevent manufacturers suffering unnecessary loss. During the year samples representative of three batches of tinned salmon were condemned.

Control of Sale of Intoxicants to Natives.—Hop beer is the name given to miscellaneous brews, supposed to be non-intoxicating, which are sold freely in native eating-houses at threepence per quart bottle. The introduction of appreciable amounts of fermentable sugar and meal, sometimes in ignorance, but often with the intention of producing a good "sterriek" "best seller," is likely to lead to dangerous conditions unless regular control is exercised. The majority of the samples were submitted by the C.I.D., and in 15 cases our affidavit reports led to convictions, with fines ranging from £2 to £6. It is interesting to note that the better type of native is looking to us for advice in these matters. They frequently come and ask whether their brewing formulae are likely to yield intoxicating products and ask for control analyses for which they are prepared to pay.

Customs Control.—Now that we have our own collecting system there is an increased demand for the services of the Branch as referee in cases of disputed classification, in many of which considerable amounts of revenue are at stake. The usual type of case is that the importer states that the composition of the commodity in question is such as to give it free entry, or entry at low tariff rate, and this is challenged by the Customs. The questions put are of the most diverse nature; sometimes they can be answered by searching the literature, and at others the commodities have to be analysed. The records show that the activities of the Branch in this direction during the year have been of substantial financial benefit to the State. Another aspect of the Customs' work is the protection of local producers against unscrupulous competition by ensuring that imports of such commodities as cheese, soap, etc., conform to prescribed standards of quality.

Miscellaneous.—Space forbids any serious review of the varied items comprising this group, but a few cases may be mentioned to illustrate the scope.

A sample of Stockholm tar was condemned because it was found to contain 51 per cent. water. Solid depositions which were causing trouble in a hospital hot-water system were analysed and suggestions for prevention were made. In addition to work in connection with the allocation of the Government Disinfectant contracts, four samples of paper were examined with a view to making the best selection from tenders for a large order intended for Government publications. Amongst the other "miscellaneous" samples were native arrow poison, snuff (for drugs), a rheumatic "cure" (found to be merely a dilute solution of hydrochloric acid), a road surfacing preparation, etc.

Lectures on the theory and practice of the scientific detection of crime have been continued with successive batches of police recruits and refresher groups. The results in keenness and efficiency are most gratifying.

Advisory Duties.—As the Government Institution dealing with applications of chemistry to matters not directly associated with mining and agriculture we are frequently consulted by Government Departments, and by the commercial, industrial and general public in matters of the most varied nature, such as the

treatment of water supplies and public baths, bye-laws concerning food control, the establishment of new industries and the problems encountered therein, statistical classification, etc.

Original Investigations.—The amount and scope of the work in relation to so small a staff obviously preclude any possibility of large scale research. In order to bring to bear on the work the aggregate benefit of modern research the professional journals of Great Britain and Germany are regularly searched and card indexed. But when these fail or the issues relate particularly to Rhodesian problems and conditions, it is necessary to endeavour to perform investigations ourselves. Amongst the problems which are receiving or which await our attention are special aspects of milk and water analyses, vitamin content of native food-stuffs, nutritional aspects of localised incidence of goitre, classification of hairs for forensic purposes, and permanence of state archives and records.

The rapid micro method for estimating protein (and other organic compounds of nitrogen) which was worked out by a member of the staff last year has often been employed and is proving of great value.

CHAPTER V.—ADMINISTRATIVE.

(1) STAFF AND FINANCE.

(a) Staff.

1. Doctors (Permanent Establishment, 29; Aided, 6)	35
2. Dentists	2
3. Government Analyst	1
4. General Nurses (Qualified, 109; Students, 102) ..	211
5. Mental Nurses	19
6. Other European Staff	61
7. Asiatic and Native Staff	330
	<hr/>
	659

(b) Southern Rhodesia Nursing Service.

The year under review has shown an increase of work in all branches. A shortage of qualified nurse applicants to fill vacancies created by resignations on marriage and by other causes manifested itself early in the year, and it became necessary to engage 12 nurses in England and to employ a certain amount of temporary qualified nursing assistance in order that the work at the Government Hospitals might proceed smoothly.

The death of Miss Elma Johnstone at Salisbury Hospital on 9th July, 1935, cast a gloom over the whole of the Nursing Service, by whom she was beloved.

Study leave was granted to one of the theatre sisters on leave overseas so that she could receive instruction in radium treatment at the Fulham Road Cancer Hospital. In the two training schools, 15 student nurses completed their four years' training, nine in Salisbury and six in Bulawayo. There has been difficulty this year in securing sufficient entries from student nurses with the educational qualifications required by the Medical Council.

The following were the results of the examinations held by the Southern Rhodesia Medical Council in the nurses' training schools at the Salisbury and Bulawayo Hospitals:—

	Number of candidates.	Number successful.	Number unsuccessful.
Preliminary Examination	31	29	2
Final Examination	12	12*	—

*1 with honours.

A gold medal presented by the British Medical Association of Southern Rhodesia was awarded to the best student at the final examination held in April, but at the October examination no medal was awarded as no candidate passed with honours.

(c) *Expenditure and Revenue.*

Total Expenditure	£185,717
Total Revenue	36,598
Net Balance of Expenditure	£159,119

(2) MEDICAL COUNCIL.

The numbers on the registers at the end of 1935 are given below. Not all of these are resident in Southern Rhodesia. Some names were struck off the registers during the course of the year owing either to decease of the persons concerned or at their request, upon ceasing to practise.

	Additions 1935.	Total 31.12.35.
Medical practitioners	12	152
Dental surgeons	1	41
Chemists and druggists	5	83
Trained nurses	38	192
Midwives	2	32
Mental nurses	1	5
Masseuses	3	3

(3) HABIT FORMING DRUGS.

Import Certificates.—Eighty-three permits were issued for the importation of the following drugs during 1935 as compared with 59 permits in 1934:—

Drug.	1934. Grammes.	1935. Grammes.
Medicinal opium	907.2	612.4
Opium (in tinctures, extracts and other preparations)	10,483.8	13,907.1
Morphine alkaloid	442.3	889.6
Diacetyl morphine (heroin)	39.7	279.5
Ethyl morphine	12.8	68.0
Cocaine	688.9	963.9
Codeine phosphate	28.3	425.2
Extract cannab. indica	—	113.4

Export Certificates.—Twenty-two permits were issued for the export of the following drugs to Northern Rhodesia and the Union of South Africa, as compared with eighteen in 1934:—

Drug.	1934. Grammes.	1935. Grammes.
Medicinal opium	—	167.3
Opium (in tinctures, extracts and other preparations)	589.7	416.7
Morphine alkaloid	11.3	337.4
Diacetyl morphine (heroin)	25.5	19.8
Cocaine	65.2	32.3
Ethyl morphine	—	4.0
Codeine phosphate	—	9.9

Nine permits were issued by the Veterinary Department in 1935 for the purchase of 116 ounces of tincture of opium, as against 8 in 1934 for 78 ounces.

ANDREW PATON MARTIN, M.B., Ch.B.,
Medical Director.

TABLE I.

CLASSIFICATION OF DEATHS (EUROPEAN), 1935.

(Deaths classified according to the International Classification of Causes of Sickness and Death.)

Classifi- cation No.	Disease.	No. of Deaths.
I.—INFECTIOUS AND PARASITIC DISEASES.		
1	Typhoid fever	5
4	Relapsing fever	1
5	Undulant fever	1
7	Measles	1
8	Scarlet fever	3
9	Whooping cough	6
10	Diphtheria	5
11	Influenza	30
13	Dysentery	7
15	Erysipelas	1
17	Encephalitis lethargica	1
22	Tetanus	1
23	Tuberculosis of the respiratory system	16
34	Syphilis	1
36	Purulent infection, Septicaemia	4
38	Malaria	39
39	Other diseases due to protozoa (Tertiary yaws)	1
44:6	Blackwater fever	17
44	Other infectious diseases	1
32	Disseminated tuberculosis	1
II.—CANCER AND OTHER TUMOURS.		
45	Cancer of buccal cavity and pharynx	2
46	Cancer of digestive organs and peritoneum	21
47	Cancer of respiratory organs	2
48	Cancer of uterus	2
49	Cancer of other female genital organs	1
50	Cancer of the breast	7
51	Cancer of the male genito-urinary organs	6
53	Cancer of other or unspecified organs	5
54	Non-malignant tumours	3
55	Tumours of undetermined nature	2
III.—RHEUMATISM, DISEASES OF NUTRITION AND OF ENDOCRINE GLANDS, AND OTHER GENERAL DISEASES.		
56	Rheumatic fever	1
57	Chronic rheumatism, Osteo-arthritis	1
59	Diabetes	8
66	Diseases of the thyroid gland and parathyroid glands	1
67	Diseases of the thymus	1
69	Other general diseases	1
IV.—DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.		
71	Anæmia, chlorosis	1
72	Leukæmia, aleukæmia	1
V.—CHRONIC POISONING.		
75	Alcoholism	1
VI.—DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.		
80	Tabes dorsalis	1
82	Cerebral hæmorrhage, apoplexy, etc.	16
85	Epilepsy	1
87	Other diseases of the nervous system	2
89	Diseases of the ear and mastoid sinus	1
VII.—DISEASES OF THE CIRCULATORY SYSTEM.		
91	Acute endocarditis	1
92	Chronic endocarditis, valvular disease	14
93	Diseases of the myocardium	36
94	Diseases of the coronary arteries, angina pectoris	10
95	Other diseases of the heart	8
96	Aneurysm	3
97	Arterio-sclerosis	9
98	Gangrene	1
99	Other diseases of the arteries	2
102	Abnormalities of blood-pressure	1
VIII.—DISEASES OF THE RESPIRATORY SYSTEM.		
104	Diseases of the nasal fossæ and annexa	1
105	Diseases of the larynx	1
106	Bronchitis	3
107	Broncho-pneumonia	11
108	Lobar pneumonia	17
109	Pneumonia (not otherwise defined)	10
112	Asthma	6
114	Other diseases of the respiratory system	5

Classifi-
cation No.

No. of
Deaths.

IX.—DISEASES OF THE DIGESTIVE SYSTEM.

115	Diseases of the buccal cavity, pharynx, etc.	3
117	Ulcer of the stomach or duodenum	4
119 & 120	Diarrhoea and enteritis	13
121	Appendicitis	8
122	Hernia, intestinal obstruction	8
123	Other diseases of the intestines	1
124	Cirrhosis of the liver	6
125	Other diseases of the liver	2
126	Biliary calculi	3
127	Other diseases of the gall bladder and ducts	1
128	Diseases of the pancreas	1
129	Peritonitis, without stated cause	3

X.—NON-VEREREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.

130	Acute nephritis	1
131	Chronic nephritis	7
132	Nephritis, not stated to be acute or chronic	4
133	Other diseases of the kidney and annexa	5
134	Calculi of the urinary passages	1
135	Diseases of the bladder	1
137	Diseases of the prostate	1
139	Diseases of the female genital organs	3

XI.—DISEASES OF PREGNANCY, CHILDBIRTH AND THE PUERPERAL STATE.

140	Post-abortive sepsis	1
141	Abortion, not returned as septic	1
144	Puerperal hemorrhage	1
145	Puerperal sepsis, not returned as post-abortion	3
146	Puerperal albuminuria and convulsions	1
147	Other toxemias of pregnancy	1
150	Other or unspecified conditions of the puerperal state	1

XII.—DISEASES OF THE SKIN AND CELLULAR TISSUE.

152	Cellulitis, acute abscess	1
153	Other diseases of the skin and its annexa	1

XIII.—DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.

154	Acute infective osteomyelitis and periostitis	1
155	Other diseases of the bones	1
156	Diseases of the joints and other organs of locomotion	1

XIV.—CONGENITAL MALFORMATIONS.

157	Congenital malformations	3
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XV.—DISEASES OF EARLY INFANCY.

158	Congenital debility	4
159	Premature birth	16
161	Other diseases peculiar to early infancy	6

XVI.—OLD AGE.

162	Old age	9
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XVII.—DEATHS FROM VIOLENCE.

163	Suicide by solid or liquid poisons and corrosive substances	2
165	Suicide by hanging or strangulation	1
167	Suicide by firearms	8
173	Homicide by firearms	1
176	Attack by venomous animals	1
179	Other acute accidental poisoning (not by gas)	1
181	Accidental burns (conflagration excepted)	3
183	Accidental drowning	7
184	Accidental injury by firearms	8
186	Accidental injury by fall, crushing, etc.	17
194	Other and unstated forms of accidental violence	6

XVIII.—ILL-DEFINED DISEASES.

200	Cause of death unstated or ill-defined	11
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Total 563

DETAILS OF DEATHS CLASSIFIED UNDER NOS. 186 AND 194 OF THE INTERNATIONAL LIST.

186.	Accidental injury by fall, crushing, etc.—	9
	Motor accidents	4
	Mining accidents	1
	Struck by revolving propeller of aeroplane	1
	Struck by metal end of broken machine belt	1
	Caught on line shaft in milling shed	1
	Squeezed between water tank and moving wagon	1
		17
194.	Other and unstated forms of accidental violence—	3
	Accidental fracture of skull	2
	Accident (no further particulars)	1
	Exposure	—
		6

TABLE 2.—STAFFING, BEDS AND PATIENTS AT GOVERNMENT GENERAL HOSPITALS, 1935.

Name of hospital.	Staff nursing.		No. of beds.		No. of inpatients treated.*			Daily average of inpatients.			No. of units maintained.			Average No. of days each patient was in hospital.	
	E.	N.	European.	Coloured and native.	European.	Coloured and native.	Total.	European.	Coloured and native.	Total.	European.	Coloured and native.	Total.	European.	Coloured and native.
Salisbury ...	76	9	120	112	2,680	2,200	4,880	102.03	92.48	194.51	37,243	33,756	70,999	13.89	15.34
Bulawayo ...	70	-	123	155	2,040	3,333	5,373	99.87	145.40	245.27	36,454	53,071	89,525	17.86	15.92
Umtali ...	10	4	39	48	517	785	1,302	18.70	38.05	56.75	6,824	13,890	20,714	13.19	17.69
Gwelo ...	10	5	22	60	425	1,037	1,462	11.65	47.18	58.83	4,254	17,220	21,474	10.00	16.60
Gatooma ...	8	12	25	96	614	1,184	1,798	14.50	83.20	97.70	5,289	30,370	35,659	8.61	25.65
Fort Victoria	4	13	16	31	167	455	622	13.03	23.69	36.72	4,758	8,650	13,408	28.49	19.01
Gwanda ...	3	11	6	36	80	651	731	2.17	36.40	38.57	794	13,286	14,080	9.92	20.40
Enkeldoorn	7	11	14	13	151	483	634	5.60	23.80	29.40	2,064	8,688	10,752	13.66	17.98
Shamva ...	3	13	13	30	69	447	516	1.82	55.43	57.25	666	20,233	20,899	9.65	45.26
Sinoia ...	4	6	11	17	209	505	714	4.64	25.33	29.97	1,695	9,249	10,944	8.11	18.31
Ingutsheni	18	27	116	330	157	388	545	90.95	275.85	366.80	33,199	100,686	133,885	211.45	259.50
Totals	213	111	505	928	7,109	11,468	18,577	364.96	846.81	1,211.77	133,240	309,099	442,339	18.74	26.95

*Includes number of cases remaining in hospital as at 1st January, 1935.

Figures for native and coloured patients do not include details of venereal disease patients.

TABLE 3.—RETURN OF GOVERNMENT AND FREE PATIENTS IN GOVERNMENT GENERAL HOSPITALS DURING 1935.

Name of hospital.	Number of free patients maintained.			No. of free patients units.		
	Coloured and native.		Total.	Coloured and native.		Total.
	European.	Coloured and native.		European.	Coloured and native.	
Salisbury ...	702	1,490	2,192	14,504	26,114	40,618
Bulawayo ...	758	3,605	4,363	12,090	41,604	53,694
Umtali ...	117	676	793	2,238	11,810	14,048
Gwelo ...	85	701	786	1,194	11,912	13,106
Gatooma ...	57	388	445	649	17,903	18,552
Fort Victoria	50	372	422	856	7,463	8,319
Gwanda ...	22	150	172	218	4,520	4,738
Enkeldoorn	111	583	699	1,133	8,024	9,157
Shamva ...	24	938	962	158	16,216	16,374
Sinoia ...	37	228	265	641	5,743	6,384
Ingutsheni	67	245	312	24,382	89,350	113,732
Total ...	2,030	9,381	11,411	58,063	240,659	298,722

Note.—Figures for native and coloured patients do not include details of venereal disease patients.

TABLE 4.—STATEMENT OF REVENUE AND EXPENDITURE AT GOVERNMENT GENERAL HOSPITALS FOR THE YEAR 1935.

Name of hospital.	No. of patients treated* (excluding Natives) (V. D. Cases)	Votes 31 A. and B.	Vote 31 C.	Gross expenditure.	Fees charged.	Revenue received.	Deficit revenue over expenditure.	Revenue per cent. of gross expenditure.	Total amount outstanding.	
									End of 1934.	End of 1935.
Salisbury ...	4,880	13,576	19,783	£ 33,359	£ 15,013	£ 12,232	£ 21,127	36.7	£ 8,975†	£ 8,785
Bulawayo ...	5,373	10,596	19,327	29,923	13,990	9,943	19,980	33.2	9,547	11,479
Umtali ...	1,302	2,756	3,599	6,355	2,579	1,971	4,384	31.0	971‡	1,260
Gwelo ...	1,462	3,294	3,824	7,118	1,986	1,523	5,595	21.4	944	1,086
Gatooma ...	1,798	2,375	4,276	6,651	3,340	2,257	4,394	33.9	1,195	1,899
Fort Victoria ...	622	1,075	1,545	2,620	762	360	2,260	13.8	783	972
Gwanda ...	731	708	1,265	1,973	769	524	1,449	26.5	385	601
Enkeldoorn ...	634	896	1,448	2,344	435	377	1,967	16.1	385	265
Shamva ...	516	875	1,203	2,078	472	366	1,712	17.6	557	573
Sinoia ...	714	1,324	1,121	2,445	787	488	1,957	20.0	2,424	2,674
Ingutsheni ...	545	5,984	5,432	11,416	3,450	2,680	8,736	23.5	1,795	2,484
Totals ...	18,577	43,459	62,823	106,282	43,583	32,721	73,561	30.8	27,961	32,078

*Includes number of cases remaining in hospital as at 1st January, 1935.

†Difference of £1 due to adjustment in December, 1934.

‡Incorrectly taken as £911 in 1934 statement.

TABLE 1.—ANNUAL REPORT OF THE COMMISSIONER OF THE GENERAL LAND OFFICE, 1901.

State or Territory	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590	1589	1588	1587	1586	1585	1584	1583	1582	1581	1580	1579	1578	1577	1576	1575	1574	1573	1572	1571	1570	1569	1568	1567	1566	1565	1564	1563	1562	1561	1560	1559	1558	1557	1556	1555	1554	1553	1552	1551	1550	1549	1548	1547	1546	1545	1544	1543	1542	1541	1540	1539	1538	1537	1536	1535	1534	1533	1532	1531	1530	1529	1528	1527	1526	1525	1524	1523	1522	1521	1520	1519	1518	1517	1516	1515	1514	1513	1512	1511	1510	1509	1508	1507	1506	1505	1504	1503	1502	1501	1500	1499	1498	1497	1496	1495	1494	1493	1492	1491	1490	1489	1488	1487	1486	1485	1484	1483	1482	1481	1480	1479	1478	1477	1476	1475	1474	1473	1472	1471	1470	1469	1468	1467	1466	1465	1464	1463	1462	1461	1460	1459	1458	1457	1456	1455	1454	1453	1452	1451	1450	1449	1448	1447	1446	1445	1444	1443	1442	1441	1440	1439	1438	1437	1436	1435	1434	1433	1432	1431	1430	1429	1428	1427	1426	1425	1424	1423	1422	1421	1420	1419	1418	1417	1416	1415	1414	1413	1412	1411	1410	1409	1408	1407	1406	1405	1404	1403	1402	1401	1400	1399	1398	1397	1396	1395	1394	1393	1392	1391	1390	1389	1388	1387	1386	1385	1384	1383	1382	1381	1380	1379	1378	1377	1376	1375	1374	1373	1372	1371	1370	1369	1368	1367	1366	1365	1364	1363	1362	1361	1360	1359	1358	1357	1356	1355	1354	1353	1352	1351	1350	1349	1348	1347	1346	1345	1344	1343	1342	1341	1340	1339	1338	1337	1336	1335	1334	1333	1332	1331	1330	1329	1328	1327	1326	1325	1324	1323	1322	1321	1320	1319	1318	1317	1316	1315	1314	1313	1312	1311	1310	1309	1308	1307	1306	1305	1304	1303	1302	1301	1300	1299	1298	1297	1296	1295	1294	1293	1292	1291	1290	1289	1288	1287	1286	1285	1284	1283	1282	1281	1280	1279	1278	1277	1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984	983	982	981	980	979	978	977	976	975	974	973	972	971	970	969	968	967	966	965	964	963	962	961	960	959	958	957	956	955	954	953	952	951	950	949	948	947	946	945	944	943	942	941	940	939	938	937	936	935	934	933	932	931	930	929	928	927	926	925	924	923	922	921	920	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900	899	898	897	896	895	894	893	892	891	890	889	888	887	886	885	884	883	882	881	880	879	878	877	876	875	874	873	872	871	870	869	868	867	866	865	864	863	862	861	860	859	858	857	856	855	854	853	852	851	850	849	848	847	846	845	844	843	842	841	840	839	838	837	836	835	834	833	832	831	830	829	828	827	826	825	824	823	822	821	820	819	818	817	816	815	814	813	812	811	810	809	808	807	806	805	804	803	802	801	800	799	798	797	796	795	794	793	792	791	790	789	788	787	786	785	784	783	782	781	780	779	778	777	776	775	774	773	772	771	770	769	768	767	766	765	764	763	762	761	760	759	758	757	756	755	754	753	752	751	750	749	748	747	746	745	744	743	742	741	740	739	738	737	736	735	734	733	732	731	730	729	728	727	726	725	724	723	722	721	720	719	718	717	716	715	714	713	712	711	710	709	708	707	706	705	704	703	702	701	700	699	698	697	696	695	694	693	692	691	690	689	688	687	686	685	684	683	682	681	680	679	678	677	676	675	674	673	672	671	670	669	668	667	666	665	664	663	662	661	660	659	658	657	656	655	654	653	652	651	650	649	648	647	646	645	644	643	642	641	640	639	638	637	636	635	634	633	632	631	630	629	628	627	626	625	624	623	622	621	620	619	618	617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	600	599	598	597	596	595	594	593	592	591	590	589	588	587	586	585	584	583	582	581	580	579	578	577	576	575	574	573	572	571	570	569	568	567	566	565	564	563	562	561	560	559	558	557	556	555	554	553	552	551	550	549	548	547	546	545	544	543	542	541	540	539	538	537	536	535	534	533	532	531	530	529	528	527	526	525	524	523	522	521	520	519	518	517	516	515	514	513	512	511	510	509	508	507	506	505	504	503	502	501	500	499	498	497	496	495	494	493	492	491	490	489	488	487	486	485	484	483	482	481	480	47
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