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UNION OF SOUTH AFRICA.

ANNUAL REPORT

OF THE

DEPARTMENT OF PUBLIC HEALTH

Year Ended 30th June, 1927

Presented to both Houses of Parliament by Command of His Excellency the Governor-General

Price 2s. 6d.

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Department of Public Health.

REPORT FOR THE YEAR ENDED 30TH JUNE, 1927.

Secretary for Public Health and Chief Health Officer for the Union:
J. ALEXANDER MITCHELL, M.B., Ch.B., D.P.H.

I.—INTRODUCTORY.

During the eight or nine years following the consummation ot the Union of South Africa very little progress was made in public health matters, indeed in some respects there was definite retrogression. Public health is not even mentioned in the Act of Union, and whether it was to be a Union or a Provincial matter could only be settled by inference and tacit arrangement between the Government and the Provinces. In one of the Provinces there were practically no public health laws; in another, such laws had been enacted for a period only and were allowed to lapse; in all the Provinces there was doubt and confusion as to the scope and functions of the Union Government and Provincial Administrations which inevitably led to over-lapping, neglect and inefficiency.

All this was altered by the passing of the Public Health Act of 1919, which established a Department of Public Health under separate Ministerial portfolio, defined the functions of the Minister and Department, and also defined the scope, duties and responsibilities of the Department, the Provincial Administrations and local authorities in regard to public health.

The functions of the Department as laid down in the Act are "to prevent or guard against the introduction of infectious diseases into the Union from outside; to promote the public health and the prevention, limitation or suppression of infectious, communicable or preventable diseases within the Union; to advise and assist Provincial Administrations and local authorities in regard to matters affecting the public health; to promote or carry out researches and investigations in connection with the prevention or treatment of human diseases; to prepare and publish reports and statistical or other information relative to the public health, and generally to carry out in accordance with directions the powers and duties in relation to the public health conferred or imposed on the Governor-General or the Minister by this Act or otherwise."

The position of the Department in relation to local authorities is, however, one of considerable delicacy, because the supervision of local government work generally is assigned by the South Africa Act to the several Provincial Councils.

The public health of any area depends very largely upon the efficiency of its local government and administration. The dissipation of funds of a local authority upon non-essentials often means that insanitary conditions are allowed to continue in its area to the prejudice of the health of the inhabitants, in other words, local government defects or maladministration are often the root causes of insanitary and unhealthy conditions and excessive sickness and mortality of a preventable kind. For the best results, local government and public health functions should be vested in the same authorities—both local and central. This, in the Union, is the case with the local authority, but it is not the case with the central or supervising authority. It has therefore been necessary to fall back on a system of friendly consultation and co-operation between the Department and the four Provincial Administrations. The machinery provided under the Public Health Act has enabled the Department to cultivate close and direct relations with local bodies and their health staffs, and has thus led to the establishment of confidence and goodwill which are essential to progress. The Council of Public Health established under the Act has also proved exceedingly useful in this connection and has provided a representative forum where questions of health policy and administration can be discussed and considered before a final decision is taken and action determined on by the Minister. It may be mentioned in this connection that although in matters of public health the Government is vested with wide and drastic powers of supervising and controlling local bodies in regard to health matters, in some instances through the Provincial Administrations, these powers are best exercised in a guiding rather than in a mandatory manner. With but a few exceptions the central authority has no executive functions. In public health as in other matters the local authority is the executive body within its area, and not the Provincial Administration or the Government, and it is only by a clear recognition of these respective divisions that good relations can be maintained and the best results achieved.

But apart from the mere offering of advice, one of the most important functions of the central health authority is to co-ordinate and harmonise, as far as may be possible in the interests of the public health of the Union as a whole, the work of individual local authorities. In many matters of health and sanitation it is essential for local authorities to act on a common basis, because the effects of neglect or wrong action are rarely confined to the area primarily concerned. Infectious disease if left unchecked spreads widely to other areas; the pollution of streams in one district endangers the public health of districts lower down; the absence of supervision over dairies and slaughter-houses affects the wholesomeness of the food supplies of adjoining districts; the general danger entailed to an active and progressive local authority by the existence of insanitary areas on its borders is sometimes so great as to compel the local authority to petition for an extension of its boundaries so as to include such areas.

Despite disagreements on a few points owing to differing viewpoints, and a certain amount of unavoidable over-lapping between the Department and the Provincial Administrations, the system of joint supervision and control of local authorities has, on the whole, worked fairly well (though its smooth working hinges to an undesir-

able extent on the " personal equations " and capacity for friendly co-operation of the officials concerned), and has proved an immense advance on the chaotic administrative conditions which obtained from the date of Union up to the passing of the Public Health Act. As regards general hospitals, district nursing, school medical inspection, and cognate matters, however, these are primarily and essentially under the Provincial Administration and Hospital Boards, the Union Health Department and local authorities having practically no *locus standi* and being able to influence policy and administration only indirectly and as a rule quite ineffectively. Until this state of matters is radically altered, until all these matters are brought under the administrative control of one set of local authorities and one central authority, thus rendering possible the co-ordination of the various institutions and agencies for dealing with the sick, with each other, and with the organisations for preventing or limiting disease, dealing with epidemics, and promoting or safe-guarding the public health, no further material progress can be made in the development of a comprehensive, efficient and economical system of health, hospital and medical administration in this country.

During the past year a Commission has been investigating the questions of pensions to necessitous aged and crippled persons and national insurance in connection with old age, maternity, unemployment, accident, sickness, invalidity and premature death. As regards the first three items, the matter is a relatively simple one, being merely a question of policy and funds. But the position as regards the other items is radically different and the problem much more complicated. To prevent accident and disease and premature death is not only a much sounder policy than to compensate for their occurrence, but is also much cheaper. To embark on a system of compensation and medical aid from the point of view of treatment before organising a comprehensive and thorough-going system of prevention would be absurd and financially suicidal, however popular it might be with the classes insured. Looked at from the point of view of preventing and controlling disease, every scheme of national insurance yet introduced and worked has proved a dismal failure. Apart from this, such schemes are very difficult and expensive to apply to scattered, sparse populations in rural areas, consisting of persons not on wages—the very class which in South Africa is most in need of assistance and medical aid.

The present plight of the small farmer or settler in a remote locality perhaps 30, 40 or more miles from the nearest doctor and often in a malarial area, is a very serious one. If his cow or horse is sick and there is a Government veterinary officer in the district (fifty-six such officers are at present employed) he can obtain the latter's services when available on payment of bare transport costs—2s. a mile to the farm with a minimum of 5s. and a maximum of £3 for the visit (Government Notice No. 2055 of 20.12.1921). But if it is himself or his wife or child who is ill, not being a pauper or indigent he is not entitled to a free medical relief order, so his only alternative to doing without is to summon the district surgeon or other medical practitioner at private patient rates, which, in his circumstances, and especially if repeated visits are necessary, may be ruinous or prohibitive.

A more hopeful and practicable line of advance would be the co-ordination and unified local and central administration and control of preventive and curative activities, *coupled with the cautious and gradual building up of a State-aided medical service*—both preventive and curative—for all members of the public who wish to avail themselves of it, beginning with the inhabitants of remote and perhaps malarial rural areas and with school children in both urban and rural areas throughout the Union. A beginning has already been made with the first-mentioned class. Section 4 of the " Public Health Act Amendment Act " passed last session reads as follows:—

> " Whenever the Minister is satisfied that, owing to lack of medical aid, prevalence of malaria or other disease or other special circumstances in any area, assistance from public funds in providing facilities for the medical treatment of the inhabitants of such area is justified, he may, out of moneys specially voted by Parliament for the purpose, provide for periodical visits to a centre in such area by a district surgeon or other medical officer."

Steps are being taken to utilize these provisions, especially in remote malarial localities. The objects of such visits or tours—apart of course from the carrying out of any medical or health work for the Government or local authority in the area—will be not only to bring medical aid within reasonable reach of the inhabitants but also to encourage prevention and deal with insanitary or unhealthy conditions, whether local, domestic or personal. A condition of approval of such visits by the Department will be that whilst indigent patients (so certified by the magistrate) will be treated free, all others will be treated *at the same rates as are charged by the district surgeon at his headquarters*, and where special travelling is involved only the extra mileage will be charged for, the Government paying the cost of travelling to and from the outstation. Thus the system does not tend to pauperise the people, whilst it ensures fair remuneration to the medical man and enables him to arrange and organise his work so as to secure the maximum results with the minimum of time and travelling. It is confidently anticipated that if reasonably adequate funds are made available this system will prove very useful and advantageous not only to the inhabitants of the areas concerned but, by promoting agricultural and general development, also to the Union as a whole.

Despite the difficulties and drawbacks already referred to there is good reason to believe that definite progress in public health matters and in the improvement or elimination of unhealthy conditions is being made, and that this is reflected in improved health of the people of the Union generally.

In recent years there have been repeated statements in the public press and elsewhere to the effect that our white population is a decadent and " C3 " one, with an excessive and increasing proportion of defectives. It is true that returns of school medical inspections and examinations of police and military recruits show a high percentage of defectives and " rejects." But the same is true of every country in the world where such examinations are made and the results recorded; in several of these countries precisely similar statements about their own population have recently been made. It has not been shown that

in this respect South Africa compares unfavourably with other countries or that the frequency of defects is increasing. Owing to varying conditions and standards, comparisons of this kind are usually difficult and sometimes fallacious and misleading; there may be an *apparent* increase in regard to some defects, because the standard has been raised or because formerly such defects were not looked for, or not looked for so carefully; in regard to dental disease and defects it is to be feared that the increase is a real and progressing one. Available evidence goes to show that the health and physique of our South African children and young people of both sexes compare favourably with those of other countries and, except as regards dental diseases and defects, that they are steadily improving. It must be remembered that the preventable diseases and defects found in these to-day are usually the result of neglect or bad conditions ten, fifteen or twenty years ago, and that it will require a similar time for better care and improved conditions to become manifest in results.

The final and conclusive criterion—the "acid test"—of the healthiness and virility, or conversely, the sickliness and degeneracy, of a population is supplied by its vital statistics. Apart from natives in native territories and rural areas, the Union has a very comprehensive, well-organised and efficient system of collecting and tabulating vital statistics, this being carried out by a branch of the Department of Interior, under the Director of Census and Statistics, assisted by an Advisory Statistical Council for the Union on which the Health Department is represented. Registration of all births and deaths is compulsory for all races in urban areas, and for all except natives in rural areas. The causes of all deaths in urban areas must be certified by a medical practitioner, otherwise an inquest must be held or special enquiry made by a magistrate. In rural areas if a medical practitioner has attended a deceased person during his last illness he must certify as to the cause of death or his inability to so certify. Where no medical practitioner has attended, the registrar may accept and register the particulars supplied by a "qualified informant"; in about 14 per cent. of all deaths registered the particulars are so supplied. A complete census of the population is taken every ten years (last in 1921), and a census of the European population only is taken in the middle of the period between each complete census.

A report on the vital statistics of the Union, with detailed tables, is published annually, and the salient figures of these and of the census reports are included in the *Official Year Book of the Union*. During the inter-censal ten-year period 1911 to 1921, the percentage increase of the various races was:—Europeans 19.06, Native (Bantu) 16.89, Asiatic 8.89, mixed and other 3.73, and of all races 15.99.

Apart from the census enumerations it is difficult to get reasonably complete and reliable figures for natives and other non-Europeans except for the urban centres, and even for these the figures are often vitiated for purposes of comparison by the presence of large and varying numbers of native labourers who come to work for short periods and then return home. Broadly speaking the native and mixed races have a high infantile and fairly high general mortality rate, but as against this they are remarkably fecund so have a high rate of natural increase.

The latest published report on the vital statistics of the Union by the Director of Census and Statistics is that for 1925; the following extracts from and references to that report are of special interest from the public health view-point:—

Area of the Union: 472,347 square miles.

Population, 1925 (estimated on basis of 1921 census): European, 1,637,472; Bantu, 5,034,563; Asiatic, 172,577; mixed and other coloured, 563,320; total 7,407,932.

Birth rate: European, per 1,000 of population, 26·5. There has been a slight and continued fall in this rate during recent years, but that for 1925 is *still the third highest* of the 21 countries for which recent statistics are available, the two countries with a higher rate being Spain 29·4 and Italy 28·2. Amongst the countries with lower rates are: Australia 22·9, Canada 22.6, U.S.A. 22.1, North Ireland 22, Scotland 21·3, New Zealand 21·2, Germany 21·1, France 19.6, England and Wales 18·3.

Death rate: European, per 1,000 of population, " crude " 9.39, " standardized " (i.e. corrected for age and sex distribution so as to correspond with the international " standard " population in these respects) 10.15. There has been a steady and maintained fall in the rate during recent years —that for 1925 being the lowest yet recorded. Of the 21 countries for which figures are available, the Union has *the third lowest* " crude " death rate, being beaten only by New Zealand, 8·3, and Australia, 9·2. The rates for a few other countries are: Netherlands and Canada, 9·8; U.S.A., 11·9; England and Wales and Germany, 12·2; Italy, 16·6; France, 18·1; Spain, 19.7.

Infantile Mortality rate: i.e. Deaths of European infants under one year per 1,000 births: 1925, 68·39; 1926, 64·82. This rate has steadily improved since the date of Union; in 1911 it was 96. The current rate *places the Union seventh on the international list*, the countries with lower rates being: New Zealand, 40; Australia, 53; Sweden, 55; Netherlands, 58; Switzerland (1924), 62; and some of those with higher rates: U.S.A. (1924), 72; England and Wales, 75; Canada, 79; France, 89; Germany, 108; Italy, 127; Spain, 148.

Survival rate or *Rate of Natural Increase*, i.e., excess of European births over deaths per 1,000 of the European population per annum. *The Union stands first on the international list* with a rate of 17·12, followed by the Netherlands, 14·5; Australia, 13·7; Canada, 13·4; New Zealand, 13·3; U.S.A., 10·6; Spain, 10·2; Germany 8·9; England and Wales, 6·6; Irish Free State, 5·8; and France with the lowest rate, 1·8.

The foregoing figures and the tables of Expectation of Life and Age at Death given in the same report, are very gratifying and encouraging. They show that the Union of South Africa can fairly claim to be one of the healthiest countries in the world, with a virile

CHART OF DEPARTMENT OF PUBLIC HEALTH.

Minister of Public Health (Hon D. F. Malan).

Minister (Chairman). Secretary and Chief Health Officer (Deputy Chairman). Sir Spencer Lister, Drs. S. M. de Kock, C. Porter, and E. Hill. Messrs. J. H. Nicolson and M. C. Vos. Mrs. S. B. Broers.	*Council of Public Health.*	*Leprosy Advisory Committee.* — Secretary and Chief Health Officer (Chairman). Sir Spencer Lister. Professors A. W. Falconer and O. K. Williamson. Drs. A. Pijper, F. C. Willmot, and G. W. Roberts.

Secretary and Chief Health Officer (Dr. J. A. Mitchell).

Head Office Establishment.

2 Senior Assistant Health Officers, (Sir E. N. Thornton † and Dr. L. G. Haydon.)

1 Chief Clerk. (A. de V. Brunt.)

1 Accountant ‡ (A. J. Klette.)
1 Principal Clerk (Accts.)‡ (L. J. Hatch.)

2 Principal Clerks. (C. N. Millard and A. Stuart.)

1 Senior Clerk, 27 Clerks, Typists, etc.

Sections.

Assistant Health Officers (Detached).	Inspection and Field Staff.	Pathological Laboratories.	Port Health Officers.	District Surgeons.	Housing.	Local Authorities.	Leprosy Institutions.	Venereal Diseases Hospitals.	Tuberculosis.	Epidemic and Infectious Diseases (Plague, Typhus, Smallpox, etc.) and Vaccination.	Food and Drugs Adulteration; Habit-forming Drugs.	Medical, Dental, Pharmacy, Midwifery, and Nursing.
Cape Town (Dr. F. C. Willmot). Durban (Dr. G. A. Park Ross).	2 Assistant Health Officers (Drs. W. A. Murray and E. H. Cluver). 6 Inspectors (5 Plague, 1 Typhus).	Cape Town (Dr. J. D. Wicht, Acting). Durban (Dr. W. F. Rhodes). Vaccine Institute, Rosebank, Cape Town (Dr. G. W. Robertson). *South African Institute for Medical Research, Johannesburg.	Cape Town (Dr. J. M. Bosman). Durban (Dr. H. E. Fernandez). Port Elizabeth (Dr. H. W. A. Kay). East London (Dr. P. W. Laidler). Simonstown (Dr. A. B. Bull). Knysna (Dr. T. B. Newman). Mossel Bay (Dr. C. A. Kitching).	7 Whole-time. 5 Whole-time. (Jointly). 276 Part-time. 288 Total.	Central Board— Sir E. N. Thornton (Chairman), Sir J. G. van Boeschoten, Messrs. P. Eagle, F. W. Jameson, R. S. Gordon (Member and Secretary).	222 Municipalities. 82 Village Management Boards. 20 Local Boards. 29 Village Councils. 30 Health Committees. 8 Local Administration and Health Boards. 90 Divisional Councils. 1 Health Board. 141 Magistrates. 633 Total.	Pretoria (Dr. J. W. de Vos). Robben Island (J. H. Alexander and Dr. H. H. Budd). Emjanyana (J. A. Macdonald and Dr. A. R. Davison). Mkambati (if. C. Bellew and Dr. F. S. Deswe). Amatikulu (F. J. Roach and Dr. G. H. Wildish). Rochem. *St. Raphael's.	Rietfontein, Johannesburg (Dr. M. Mehliss). King Williams' Town. *Rochem. *Klim. *Jane Furse Memorial. Several smaller hospitals.	Nelspoort Sanatorium (Dr. S. S. Hewitt). *Holy Cross Medical Mission.	Field Staff. District Surgeons. Local Authorities. Magistrates, etc.	Inspectors, Police, etc. Chemical work done in chemical Laboratories of Department of Agriculture at Cape Town and Johannesburg.	* Cape Medical Council. * Cape Pharmacy Board. * Transvaal Medical Council. * Transvaal Pharmacy Board. * Natal Medical Council. * Natal Pharmacy Board. * O.F.S. Medical and Pharmacy Board.

* Receives Grant-in-Aid. † Is also Director of Medical Services (Defence). ‡ Jointly with Department of Interior.

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and robust European population which—apart from immigration—is increasing comparatively rapidly. This does not mean that all is well and satisfactory, and that there is no need for further effort. There is still a great deal of preventable disease and untimely death and of preventable or remediable disease or defects amongst children and young adults; the results already achieved should spur on all concerned to still greater efforts in the future. Apart from a reorganised system of public health administration co-ordinated with improved medical, nursing and hospital services, the crying need of the country is for more knowledge and enlightenment regarding the simple, elementary principles of healthy living, the importance and value of health to the State as well as to the individual, and the paramount importance of prevention in the domain of disease or, where this is impossible, of early discovery and efficient treatment. The stirring up of active interest in these matters has been a slow and laborious process, but there are encouraging signs that the seed which has been sown is beginning to bear fruit and that the day is not distant when school authorities will recognise that a knowledge of the human body and its care and maintenance in health is an important and essential part of education, and when governments and local authorities will recognize that the human crop is the most valuable one which any country produces and be prepared to devote money and attention to the continuous and systematic development and improvement of organisations and measures for promoting health and preventing and dealing with disease, without waiting for the stimuli of recurring prevalences or disastrous epidemics.

II.—ADMINISTRATIVE MATTERS.

1. *Staff.*—The principal changes in the permanent staff during the year were the appointment of Dr. E. H. Cluver to be an Assistant Health Officer, *vice* Dr. H. F. Sheldon, who retired on the expiration of his contract, and the retirement on superannuation of Dr. G. W. Robertson, Government Pathologist, Capetown. Dr. Robertson's services have been temporarily retained in a part-time capacity as Medical Officer in charge of the Rosebank Vaccine Institute and Consulting Pathologist at Capetown.

Dr. Peter Allan, Medical Superintendent, Tuberculosis Sanatorium, Nelspoort, was seconded for tuberculosis research work to the South African Institute for Medical Research, Johannesburg, for a period of three years from 1st April, 1927, and replaced by Dr. Strafford S. Hewitt.

The attached chart shows the organization and functions of the Department and its principal personnel as at 30th June, 1927:—

2. *Council of Public Health.*—Dr. W. Watkins-Pitchford resigned from the Council on his retirement from the post of Director of the South African Institute for Medical Research. Miss Mabel Elliott also resigned.

To fill these vacancies, Sir Spencer Lister, the new Director of the Institute (with Dr. J. H. Harvey Pirie, Deputy-Director of the Institute, as alternate), and Mrs. S. B. Broers, of Heidelberg (Transvaal), were appointed.

The Council sat at Pretoria on 8th and 9th December, 1926. Resolutions passed and more important matters discussed were as follows:—

(1) *Training and Certification of Sanitary Inspectors, Health Visitors, etc.:*

"That in the opinion of this Council it would be conducive to the improvement of the public health if provision were made in the Public Health Act for the refund to local authorities of one-third of the salaries of certificated health visitors, preferably possessing maternity qualifications."

(2) *Health Publicity and Educative Work:*

"This Council considers that the education of the public with regard to elementary health matters is essential for progress, and recommends that largely increased funds and resources be made available for this purpose."

(3) *Bio-chemical Research: Dental Caries, Deficiency Diseases, etc.*

"This Council is of opinion that the South African Institute for Medical Research should be assisted and encouraged to extend its research work in bio-chemistry."

(4) *Smallpox and Vaccination:*

"In view of the recent outbreak of smallpox in Durban and the speedy manner in which it was controlled and stamped out by the thorough vaccination of the population, this Council desires to emphasize that there should be no weakening of the original Act in regard to compulsory vaccination in the event of an actual or threatened outbreak of smallpox."

(5) *Leprosy:*

"In the opinion of this Council it would be advantageous and, in the end, more economical, if more facilities and resources for leprosy investigation and the testing of methods of treatment were made available."

(6) *Tuberculosis:*

"In the opinion of this Council, and under the present system of hospital administration in the Union, the provision of accommodation and treatment for cases of non-communicable tuberculosis should not be made a responsibility of the Union Health Department."

(7) *General Hospital Matters:*

"That this Council regrets that the Government has not seen its way to accept the recommendations in the report of the Public Hospitals Inquiry Committee in regard to hospital administration and cognate matters, and urges the Government to reconsider the matter."

(8) *Housing :*

" In the opinion of this Council it is in the interests of public health that further funds should be provided for loans under the Housing Act."

Other subjects discussed by the Council included international health matters (new international sanitary convention); plague and tuberculosis research schemes; malaria; venereal diseases; rabies; draft legislation (*a*) Public Health Amendment Bill; (*b*) Consolidated Food and Drugs Bill; sanitation, alluvial diamond diggings; training of nurses, midwives, health visitors, mothercraft nurses; arsenic in fruit (pears and apples) from spraying; regulations regarding slaughtering, meat inspection, etc., and methods of dealing with " measly " meat; town planning; national health insurance; and State medical and cognate services.

3. *International Health Matters and Epidemic Intelligence System.*—The necessity for, and the special features of, the new international sanitary convention were stated in last year's report. After careful consideration by the Department and the Government it was approved, and Dr. P. G. Stock, of the British Ministry of Health (formerly Director of Medical Services of the Union, and now the representative of the Government of the Union on the Committee of the Office International d'Hygiene Publique, Paris), who had represented this Government at the International Conference, was authorized to sign the convention on behalf of the Government of the Union, subject to formal ratification later on. His Majesty the King's ratification of the convention in respect of the Union of South Africa was deposited with the French Government on 26th May, 1927. Arrangements have been concluded between the Permanent Committee of the Office International d'Hygiene Publique, Paris, and the Health Committee of the League of Nations, Geneva, to facilitate the working of the convention, especially as regards the international notification of outbreaks of epidemic disease. Amongst the most important features of the new convention are provisions for the international notification of plague in rodents and for the periodical inspection and de-ratization (where necessary) of vessels.

The Epidemic Intelligence Bureau established by the Health Organization of the League of Nations at Singapore—which receives from and furnishes to the Department weekly health reports—is of special advantage in connection with health administration at Union ports.

The Department's epidemic and health intelligence system—comprising the publication of weekly health bulletins and the furnishing to the larger local authorities of more detailed weekly returns with regard to prevalences of infectious disease—continues to work satisfactorily.

The publicity and broadcasting bureau organized by the Department of Posts and Telegraphs, which it was hoped would prove useful for the rapid dissemination of urgent health information, was discontinued some time ago. In practice it was not found to be satisfactory, and the cost did not warrant the continuance of the experiment.

Sir Edward Thornton, Assistant Health Officer, participated in a study tour of West Africa arranged by the League of Nations' Health Organization, and attended by some sixteen medical officers representing different Governments interested in African problems. The tour ended in a conference at Sierra Leone, when, *inter alia*, the question of establishing an epidemiological bureau for West Africa was considered. The general opinion of delegates was that it was premature to establish such a bureau. The views of the different delegates were subsequently considered by the Health Committee of the League of Nations, which authorized Dr. Lucien Raynaud, Inspector-General of the Health Services of Algeria, to submit a report on the subject and to carry out experiments to test the possibility of collecting at Algiers and rapidly transmitting from that centre all information relating to public health of interest to Africa.

From the point of view of the health problems of the Union of South Africa, Algiers is entirely unsuitable, and if any such bureau is to be established, the best place for it would be Egypt. Under the international health intelligence scheme the Union is included in the "eastern area"; our health relations are mainly with that area and with Europe, and at present we have very little relations with North or even Equatorial Africa or the Mediterranean basin.

The most important matter studied during the tour was the provision of native auxiliary medical services, as exemplified in the French West African colonies. There, natives are trained in Government medical schools and given posts as auxiliary medical assistants in the bush, where they carry out useful medical, surgical, and public health work—as far as possible under European supervision—but only while holding such posts. This scheme, together with a system of bush dispensaries and hospitals, has enabled European medicine and medical science to be brought to the remotest areas at a very small cost, and the question of establishing a service on somewhat similar lines, with modifications to suit South African conditions, is well worthy of consideration. A useful paper on the subject has been published by Sir Edward Thornton.

Before leaving West Africa the services of Sir Edward Thornton were loaned for a period of about six weeks to the Nigerian Government to advise on the plague position in that colony.

4. *Legislation Affecting Public Health.—The Medical, Dental, and Pharmacy Bill* was reintroduced into the House of Assembly during the 1926 session, but owing to pressure of other parliamentary work further consideration had to be postponed when the Bill was nearly through the committee stage. The Minister hopes to take up the Bill next session at the point where it was dropped.

The Public Health Amendment Bill was also reintroduced, but time did not permit of all the clauses being dealt with. Clauses dealing with the following matters were passed as Act No. 36 of 1927:—

(a) *Alluvial Diamond Diggings.*—The Mining Commissioner, acting under the authority and instructions of the Minister of Public Health, to be the local authority. He will exercise all or any of the powers conferred on urban or rural local authorities by Act No. 36 of 1919 and Act No. 36 of 1927. Some difficulty has since arisen in connection

with this matter, as the term "Mining Commissioner" is, under the present mining laws, applicable only in the Transvaal, the corresponding officer in the Cape Province being known as a "Claims Inspector." The difficulty will disappear when the amending Precious Stones Bill becomes law.

(b) *Health Expenditure in Places where there is no Local Authority other than the Magistrate.*—Sub-section (2) of Section 9 of Act No. 36 of 1919 has been repealed and the following new Sub-section substituted therefor:—

"All expenditure under this section shall be recovered from the Administrator of the Province in which it was incurred, except any portion thereof which would have been refunded to the local authority out of the Consolidated Revenue Fund if there had been a local authority other than the Magistrate for such area and if the expenditure had been incurred by that authority."

(c) *Periodical Visits of Medical Officers to Places Remote from Medical Aid.*— In last annual report, under the heading of "District Surgeons," it was stated that a special empowering clause would be included in the Public Health Act Amendment Bill making provision for periodical visits by medical officers to such places lacking medical aid, the cost to be met out of moneys specially voted by Parliament for the purpose. This has now been done.

(d) *Powers of Delegation of Functions and Duties.*—Section 5 of the new Act empowers the Minister or an administrator or a magistrate to delegate his functions and duties under the principal Act (Act No. 36 of 1919) to the Chief Health Officer or other officer or to a local authority. It also authorizes a local authority to delegate or transfer any health function or duty to its mayor, chairman, or medical officer of health or, in certain circumstances, to another local authority.

The Food, Drugs, and Disinfectants Bill to consolidate and amend the laws for preventing the importation or sale of food or drugs which are unwholesome or adulterated or incorrectly or falsely described, and for regulating the labelling and sale and for preventing the incorrect or false description of disinfectants, was introduced and read a first time, but made no further progress. The Minister hopes to reintroduce it during next session.

The Immigration and Indian Relief (Further Provision) Bill, introduced by the Minister of the Interior, and passed as Act No. 37 of 1927, contains [Section 8 (4)] important provisions, included at the request of this Department, for preventing the landing of tuberculous immigrants, except under special permit (see later under Tuberculosis).

An amendment to Section 268 of the *Criminal Procedure and Evidence Act, No.* 31 *of* 1917, introduced by the Minister of Justice and passed as Act No. 7 of 1927, is of special interest to this Department. Under it pathologists employed by the South African Institute

for Medical Research, Johannesburg, engaged on medico-legal cases are placed on the same footing as similar officers in the employ of the Government, and may submit certificates embodying the results of their investigations instead of, as formerly, having to appear personally in court.

An *Ordinance, No.* 13 *of* 1927, was passed by the Cape Provincial Administration to regulate the establishment of townships and to provide for the approval of town-planning schemes. This measure is dealt with further under the heading of "Town Planning."

5. *District Surgeons.*—New district surgeoncies were established during the year at Loxton, Postmasburg, Elandsputte (assistant), Erasmus, Messina, and Excelsior. The following table shows the position at 30th June, 1927:—

TABLE A.—DISTRICT SURGEONS AS AT 30TH JUNE, 1927.

Province.	Whole-time.	Whole-time, but jointly with Local Authority or Public Body.	Part-time.		Total.
			On Inclusive Annual Salary.	On Annual Salary with Certain Supplementary Fees and Allowances.	
Cape	3	4	1	136	144
Natal	2	—	—	38	40
Transvaal	2	—	7	49	58
Orange Free State	—	—	—	46	46
UNION	7	4	8	269	288

The seven whole-time officers are those at Capetown, East London, Port Elizabeth, Durban (2), and Pretoria (2); the four whole-time officers appointed jointly with local authorities or public bodies are those at Kimberley, Grahamstown, Queenstown, and Wynberg.

6. *Local Authorities and their Health Staffs.*—Table B shows the numbers of the various classes of local authorities under the Public Health Act as at 30th June, 1927. Nine local authorities, namely, the Bloemfontein, Capetown, Durban, East London, Johannesburg, Pietermaritzburg, Port Elizabeth, and Pretoria Municipalities, and the Divisional Council of the Cape, have whole-time medical officers of health. The Kimberley Board of Health, jointly with the Kimberley Municipality, has a medical officer who devotes some of his time to laboratory work at the Kimberley Hospital, but does no private practice. At Queenstown and Grahamstown there are officers who act as health officers to the municipal and divisional councils and carry out the duties of district surgeons, but do no other medical work.

On the 30th June, 1927, there were 59 local authorities, namely, 31 in the Cape, 5 in Natal, 6 in the Orange Free State, and 17 in the Transvaal, employing certificated sanitary inspectors, devoting the whole of their time to sanitary work. This is an increase of seven as compared with the previous year's figures.

TABLE B.—LOCAL AUTHORITIES UNDER THE PUBLIC HEALTH ACT (1919) AS AT 30TH JUNE, 1927.

Province.	Municipalities.	Village Management Boards.	Local Boards.	Village Councils.	Health Committees.	Local Administration and Health Boards.	Magistrates.	Divisional Councils.	Board of Health.	Total.
Cape	129	77	14	—	—	—	28	90	1	339
Natal	9	—	16	—	—	8	42	—	—	75
Transvaal	23	—	—	29	30	—	38	—	—	120
Orange Free State	61	5	—	—	—	—	33	—	—	99
UNION	222	82	30	29	30	8	141	90	1	633

III.—WORK OF THE DEPARTMENT.

1. *Inspections, Investigations, and Field Work.*—During the year 410 inspections, investigations, etc., were carried out by the medical officers of the Department, made up as follows:—Systematic general inspections of local authority areas, 76; factories and works, including "offensive trade" premises, 58; general and chronic sick hospitals and other institutions under Provincial Administrations, 23; mental and Indian hospitals under Department of the Interior, 4; leper institutions, venereal diseases hospitals, and tuberculosis sanatoria, 30; private hospitals, 9; prisons, reformatories, and other institutions, 34; schools and orphanages, 3; nursing and maternity homes, 22; water supplies, 7; drainage and sewerage, 10; housing and over-crowding, nuisances, and insanitary conditions, 27; departmental inquiries under Public Health Act or other, 5; formidable epidemic diseases: typhus, plague, smallpox, etc, 25; other notifiable infectious diseases, 13; non-notifiable communicable diseases, 13; other inspections, investigations, and field work, 51. These inspections involved medical officers travelling a total of 36,290 miles by rail and 16,015 miles by road, and a total of 611 days' absence from office.

2. *Addresses, Published Papers, and Special Investigations by Members of the Staff:—*

Dr. J. Alexander Mitchell, Secretary for Public Health and Chief Health Officer for the Union:

"Plague in South Africa: Historical Summary." Publications of the South African Institute for Medical Research, No. XX, Vol. III.

"Deaf-Mutism in South Africa." Address, Annual Meeting, Committee for the Deaf and Dumb, Cape Town.

"Child Welfare Work." Annual Meeting, Child Life Protection Society, Cape Town.

Sir E. N. Thornton, Assistant Health Officer:

"Report on the Outbreaks of Plague in Nigeria." July, 1926. Laid before the Legislative Council of Nigeria.

"The Native Medical Service in French West Africa. Is it suitable for Adaptation to the Union?" (*Medical Journal of South Africa*, November, 1926.)

"Native Medical Services." Address, Bantu Club, Johannesburg, 29th April, 1927.

Dr. G. A. Park Ross, Assistant Health Officer :
"High Labour Costs." Paper read at Sugar Conference, May, 1927.
"Further Investigations into Fumigation with Cyanide Gas, combined with a Tell-tale Gas, with Special Apparatus."

Dr. W. A. Murray, Assistant Health Officer :
"Plague in the North-west of the Cape Province." Jointly with J. H. Harvey Pirie, M.D., F.R.C.P. (*Journal of the Medical Association of South Africa*, 12th February, 1927.)

Dr. E. H. Cluver, Assistant Health Officer :
"Rabies in South Africa." (*Journal of the Medical Association of South Africa*, 28th May, 1927.)
"Arterial Pressures of Young Male Adults in Johannesburg." (*South African Journal of Science*, Vol. XXIII, December, 1926.)

W. Powell, Chief Rodent Inspector :
"The Natural Solution of the Rodent Plague and Insect Pest Problems." Published by the South African Health Officials' Association.

3. *Health Publicity and Educative Work.*—The following pamphlets were compiled, published, and distributed by the Department during the year:—

"Snake-bite and Its Treatment."—No. 348 (Health).
"Tuberculosis : Summary of Causes and Preventive Measures."—No. 352 (Health).
"How To Prevent Consumption."—No. 284 (Health).
"Directions For Consumptive Persons."—No. 285 (Health).
"Food and Health."—No. 194 (Health).

The following "Health Notes" were published in the Press:—

"Rats and Human Plague."
"South African Hotels."
"Child Welfare."

A "Malaria Catechism" for use in schools, with an introduction by the Secretary for Public Health, has been drawn up and forwarded to the Provincial Administrations for circulation in schools in the Transvaal and Natal where malaria exists. This catechism should also prove useful to instructors of popular classes in hygiene and sanitation, police recruits, Red Cross societies, native schools, and others interested in malaria and its prevention. In addition to the catechism, a new malaria pamphlet has also been drafted, and will be issued jointly by the Department and the South African Red Cross Society.

A vote of £500 for health publicity and educative work has been provided on the Estimates for the financial year, 31st March, 1928.

There are many health matters which might usefully be made the subject of simply worded publications in the Press, and it is hoped to make freer use of the Press for this purpose in future. All the leading newspapers in the Union are cordially co-operating.

The work of revising and translating into Afrikaans Dr. A. W. Reid's handbook on "Sanitation and Public Health" is well in hand.

4. *Sanitation, Water Supplies, etc.*—During the year seventy-six systematic general health inspections of local authority areas were carried out. This is an increase of 30 on the previous year, but the number is still inadequate. The Department aims at inspection by one of its health officers of every urban area at least once every three years, and there are 402 such areas in the Union.

These inspections are most useful and necessary, and are, as a rule, much appreciated by local authorities and their officers. Many towns and villages are increasing rapidly in size with the dangers attendant upon aggregated unsupervised conditions of life. Insanitary conditions that produce little effect on a sparse population become highly dangerous when crowding together of human beings occurs. Inhabitants of expanding villages are apt to tolerate insanitary conditions, or even to resent change, long after they have become a serious menace to health.

The matters requiring special watching are sanitation; safety and adequacy of water supplies; milk; meat and other food supplies; housing; fly-prevention; rodent prevention, and the conditions under which animals are kept. The Department is able to assist local authorities in bringing dangers and defects to their attention and making helpful suggestions derived from experience in other centres.

5. *Laboratories.*—

TABLE C.—PATHOLOGICAL LABORATORIES: ANALYSES AND EXAMINATIONS: YEAR ENDED 30TH JUNE, 1927.

Particulars.	Laboratories.		South African Institute for Medical Research.
	Cape Town.	Durban.	
Specimens Examined for			
Government Departments			
Agriculture	6	1	—
Customs and Excise	11	4	9
Defence	247	7	5,167
Finance	—	190	—
Interior (Mental Hospitals, etc.)	636	41	240
Justice	201	274	646
Justice (Prisons)	—	371	210
Mines and Industries (Miners' Phthisis)	—	—	20,820
Mines and Industries (Geological Survey)	—	—	—
Native Affairs	—	—	—
Posts and Telegraphs	133	55	—
Public Health (including Leprosy Institutions)	5,830	2,990	24,587
Public Works	—	3	—
South African Railways and Harbours	172	7	—
Other Government Work	32	—	462
General Hospitals (Provincial)	2,497	11,026*	9,512
Native Mine Hospitals	—	—	1,095
Local Authorities	2,298	2,840	3,411
Medical Practitioners	6,930	4,642	5,360
Members of the Public	—	6	41
Department of Education (Provincial)	—	168	20
Other Governments or Administrations	—	—	—
Others	187	51	1,342
TOTAL	19,180	22,676	72,922
Manufactures and Issues—			
Autogenous vaccines	65	139	1,302
Bacterial vaccines (stock) c.c.	6,850	—	817,324
Tuberculin dilutions	—	—	241
Sera (various) c.c.	—	—	217,047
Anti-rabic vaccine c.c.	10,000	—	—
Bulgarian milk cultures bottles	—	—	290
Insulin tubes	—	—	1,523
Smallpox vaccine—calf lymph (prepared at Vaccine Institute, Rosebank) tubes	2,159,200	—	—
Attendances at courts of justice by members of staff	2	22	109
Total days' absence entailed by such attendances	2	46	173

* A large proportion of this work is in connection with the Addington Hospital, Durban, and is done in conjunction with Dr. R. F. Johnstone, bacteriologist to the hospit l.

£3,000 has been provided on the Schedule of Major Works, as finally revised and included in this year's Estimates, for the new pathological laboratory and offices at Durban, and the work is being proceeded with. The balance of the estimated cost of the buildings will be provided on next year's Estimates. The Capetown laboratory accommodation remains deplorably bad; there have been negotiations with the Capetown University regarding the purchase by Government of certain laboratory buildings at the top of Government Avenue, but so far nothing definite has eventuated.

6. *Port Health Administration.*—The following table summarizes health work at the Union ports during the year:—

TABLE D.—PORTS OF THE UNION: HEALTH ADMINISTRATION DURING YEAR ENDED 30TH JUNE, 1927.

Particulars.	Cape Town.	Durban.	Port-Elizabeth.	East London.	Mossel Bay.	Knysna.	Port St. Johns.	Simonstown.	Total.
Vessels dealt with	930	1,255	689	597	168	33	21	81	4,072
Cases of infectious or communicable diseases dealt with.....	51	149	10	—	—	—	—	—	210
Vessels involved.	33	68	1	—	—	—	—	—	102
Disinfections—									
Vessels.....	42	6	—	—	—	—	—	—	48
Second-hand clothing and other articles..	717	1,266*	4,572	—	—	—	—	—	6,555
Bales of mixed articles.....	19	14	16	—	—	—	—	—	49
Rats trapped on vessels and shore	7,153	2,078	9,276	430	319	—	—	—	19,256

* In addition, the personal effects of 2,073 Indian and coloured passengers were disinfected.

Particulars regarding the outbreaks of influenza on the s.s. "Ceramic" and the s.s. "Benalla" and the case of plague on the R.M.S. "Armadale Castle," all at the port of Table Bay, will be found in the sections dealing with those diseases. The steamer "Jagersfontein" arrived at Durban on 5th January, 1927, having recently called at Beira and Lourenco Marques. There were twelve cases of mild fever amongst the officers and crew. A provisional diagnosis of dengue was made (this disease being at the time prevalent in Durban, and believed to exist at East Coast ports), but the possibility of enteric could not be definitely excluded before the vessel sailed on 9th January. The vessel touched at East London and Port Elizabeth on the way down the coast; at the former port a series of blood specimens were taken by the Port Health Officer and examined, but gave negative results with the Widal test for enteric. The vessel called at Capetown for coal on 15th January, remaining only three hours. On arrival seven members of the crew were still ill; the five other patients had completely recovered and were back at work. The seven sick were landed and removed to the isolation hospital, where clinical examination strengthened the suspicion of enteric. On laboratory examination the blood of five of them gave positive results with the Widal test. One of the patients died on 25th January after having had two large intestinal hæmorrhages; the others recovered.

7. *Adulteration of Food and Drugs.*—The following table shows the action taken in this connection during the year:—

TABLE E.—ADULTERATION OF FOOD AND DRUGS, YEAR ENDED 30TH JUNE, 1927.

Province.	Samples Taken.	Samples Analysed.	Samples found Inferior, Deficient, or Adulterated.	Prosecutions.	Convictions.	Remarks.
Ports of Union...	60	60	16	—	—	Importers warned.
Cape Province....	2,063	2,050	106	44	34	Result of proceedings in two cases not yet reported. A large proportion of offences, especially first offences, are dealt with by warning notices.
Natal.....	221	221	26	25	23	Result of proceedings in one case not yet reported.
Transvaal.....	869	869	61	—	—	Adulteration laws administered by municipalities within their areas.
Orange Free State	114	114	3	2	2	
UNION.....	3,327	3,314	212	71	59	

In previous annual reports the urgent need for effective legislation for preventing the adulteration of food and drugs has been strongly urged. This need has been repeatedly illustrated during the past year. Pending the enactment of such legislation it is impossible to safeguard the public of the Union against fraud and adulteration in connection with these articles.

8. *Institutions administered by the Department.*—These comprise the following:—

Nelspoort Sanatorium for Tuberculosis.—On main railway line 32 miles north of Beaufort West; opened 5th May, 1924; farm of 8,154 morgen, with new hospital buildings lay-out and equipment; cost some £108,000, half of which was contributed by the Government and the other half by Mr. John Garlick, of Capetown (£25,000), certain other donors and the local authorities of the Cape Province; accommodation provided, 112 beds, namely, European block, 32; coloured and native block, 36; hospital block, 24 beds; and two recently added solarium pavilions of 10 beds each. Staff: Europeans, 30: natives, 55; comprising Medical Superintendent, matron and 15 European nurses, with farm and clerical staffs and details.

Rietfontein Venereal and Infectious Diseases Hospital.—Situated about nine miles north of Johannesburg, on farm of some 750 morgen. Was started about 1897. Institution has been almost entirely rebuilt during past four years at cost of some £64,500. Accommodation for 64 European V.D. and 384 coloured and native V.D. patients; in addition there is a separate infectious diseases' block with accommodation for 24 European and 32 native patients; total 506 beds. Daily average number of patients: Europeans, 32; native and coloured, 404; total, 436. Staff: Medical Superintendent, matron, 5 female European nurses and 4 male European nurses, in addition to the clerical and farming staff consisting of 41 units, 31 of whom are natives. The venereal diseases' section takes patients from all over the Transvaal,

Northern Free State and Northern Natal. The infectious diseases' section deals with cases of infectious and formidable epidemic diseases from all the Reef municipalities. A chronic sick hospital of 200 beds is situated on the same farm but is administered and financed by the Provincial Administration.

Pretoria Leper Institution.—Situated six miles west of Pretoria. Property of some 500 morgen. Inmates at present number 921, 78 of whom are Europeans. Staff consists of Medical Superintendent, 2 medical officers, 1 matron and 21 European nurses, in addition to the clerical and farming staff, overseers, police, etc., consisting of 90 units, 71 of whom are natives.

Bochem Leper Institution and Venereal Diseases Hospital.—About 55 miles north-west of Pietersburg. Was started in 1914. Farm of 2,032 morgen 209 square roods reserved by Government " for the purpose of a station for the treatment of sick natives." About 1,600 morgen used for leper institution. Accommodation for 140 native patients. Present number of patients, 107. Staff: Lay Superintendent (part-time), nursing sister and 7 natives. Some distance from the Leper Institution, but on the same farm, is a Venereal Diseases Hospital for Natives, accommodating up to 215 patients, and managed by a Lay Superintendent. The District Surgeon, Pietersburg, visits both Institutions periodically.

Robben Island Leper Institution.—In Table Bay, about 9 miles from the mainland. In recent years the number of patients at this institution has steadily decreased. Number at present accommodated, 153, of whom 22 are Europeans. Staff consists of Lay Superintendent, medical officer, 12 female European nurses and 6 male European nurses; in addition the clerical and other staff comprising the crew of the " Pieter Faure " (9), artizans, constables, etc., totalling 56 units, mainly European.

Emjanyana Leper Institution.—In the Engcobo district (Transkei), 30 miles from Idutywa railway station. Opened in 1892. Farm of 5,000 acres. Accommodation for 1,080 native patients. Present number of patients, 594. Staff: Lay Superintendent, medical officer, matron, nurses, clerical and farming staffs, totalling 18 Europeans and 81 natives.

Mkambati Leper Institution.—In the Lusikisiki district on the Pondoland coast between the Umsikaba and Umtentu rivers, some 44 miles from Flagstaff, 92 from Kokstad, and 106 miles from Izingolweni, the nearest railway station. Opened in 1920. Farm of 20,315 morgen. Number of patients, 231 (all natives). Staff: Lay Superintendent, visiting medical officer, storekeeper, farm foreman, and 43 natives.

Amatikulu Leper Institution.—Situated on the north coast of Natal, some 80 miles from Durban and 9 miles from Inyoni, the nearest railway station. Farm of 7,767 acres. At present there are 416 patients, all natives. Staff consists of Lay Superintendent, visiting medical officer, storekeeper, farm foreman and 41 natives.

The farms in connection with the foregoing eight institutions entail a considerable amount of work to both the headquarter and local staffs. The aim of the Department has been to utilize the properties to the best advantage and to produce supplies of meat, milk, vegetables and other necessaries and so reduce the cost of running the institutions. At each institution supplies of such produce are also

furnished to the staff on payment at contract or current market rates. In the farm accounts the institution is debited and the farm account credited at similar rates with all supplies furnished to the institution. The farm accounts are totalled up, stock, crops, etc., valued at the end of each financial year and accounts made up showing the results of working of the farm during the year.

IV.—INFECTIOUS, COMMUNICABLE AND PREVENTABLE DISEASES.

1. *Notifications.*—The following table shows the notifications of infectious diseases by medical practitioners during the year, the total for the previous year being inserted for comparison. It is to be noted that many cases of such diseases, especially in natives, are never seen by a medical man, and consequently are not notified:—

TABLE F.—NOTIFICATIONS OF INFECTIOUS DISEASES BY MEDICAL PRACTITIONERS DURING THE YEARS ENDED 30TH JUNE, 1926, AND 30TH JUNE, 1927.

Disease.	Year ended 30th June, 1926.	Year ended 30th June, 1927.										
		Union.	Cape Province, excluding Transkei.		Transkei.		Natal.		Orange Free State.		Transvaal.	
	Union.											
	Total.	Total.	†E.	N.-E.	E.	N.-E.	E.	N.-E.	E.	N.-E.	E.	N.-E.
Anthrax	40	48	4	12	1	3	2	5	1	10	4	6
Diphtheria	1,236	1,342	529	207	4	1	201	37	70	23	247	23
Encephalitis: Infective	52	56	13	10	—	—	2	—	12	4	5	10
Enteric or Typhoid Fever	4,454	4,018	952	905	11	24	156	207	258	137	694	674
Erysipelas	156	232	76	45	—	—	16	3	4	1	47	40
Glanders	—	—	—	—	—	—	—	—	—	—	—	—
Leprosy	82	97	2	24	—	11	—	16	1	13	1	29
Malta Fever	7	3	1	—	—	—	—	—	1	—	—	1
Meningitis: Epidemic Cerebro-Spinal	389	297	30	136	—	—	11	12	8	16	59	25
Ophthalmia: Gonorrhoeal	34	23	1	6	—	—	—	1	1	3	8	3
Ophthalmia: Neonatorum	201	237	25	132	—	1	7	6	3	19	36	8
Plague (for complete list of cases and deaths see Table J)	14	43	15	13	—	—	—	—	—	13	2	—
Poliomyelitis: Acute	12	21	4	5	—	—	—	3	1	2	6	—
Puerperal Fever, including Puerperal Sepsis	225	219	32	68	—	1	7	13	3	7	59	29
Rabies	2	1	1	—	—	—	—	—	—	—	—	—
Scarlatina or Scarlet Fever	612	965	404	28	10	—	81	14	127	—	297	4
Smallpox [for complete list of cases and deaths see Table K (i)]	72	126	—	25	2	6	1	62	—	4	4	22
Trachoma	33	28	6	14	—	—	2	—	1	—	4	1
Tuberculosis	4,826	5,875	442	2,942	1	403	85	505	35	108	61	1,293
Typhus Fever (for complete list of cases and deaths see Table N)	722	686	23	128	—	307	23	54	3	135	1	12
TOTALS	13,169	14,317	2,560	4,700	29	757	594	938	529	495	1,535	2,180

† E. = European. N.-E. = Non-European.

2. *Ankylostomiasis* (*Hookworm Disease*).—It has been suggested at various times that this disease is prevalent amongst Europeans on the Low Veld and in the Northern Transvaal, and may be an important contributory cause of "Poor Whiteism" in these areas. No evidence in support of this suggestion has so far been adduced or found, although a considerable number of examinations of material from anaemic and ill-nourished children living in these parts have been made by school medical officers and the Institute for Medical Research. The disease—apart from underground workings such as mines and tunnels—is essentially one of warm countries with moist climate and high rainfall; the dryness of most parts of South Africa would appear to constitute an effective barrier against any serious spread of the disease amongst the general population.

On the other hand Hookworm infection does occur to some extent along the Natal coastal region; and it is apparently very prevalent in Portuguese East Africa. Of the natives recruited on the East Coast it is estimated that about 60 per cent. arrive on the Witwatersrand infected with Ankylostomiasis. It has recently been shown that the workings of a few of the deep-level gold mines have become infected. This soil infection has resulted in spread of the disease to native mine labourers previously free from it and also to European miners, amongst whom some seventy-two cases have already occurred. Active preventive measures—comprising the provision of properly-constructed latrines, other precautions for preventing soil pollution, and the mass treatment of infected natives—have been taken on the mines.

Treatment of the condition is simple and efficacious, and even in untreated cases the infection tends to die out in six or nine months if re-infection is prevented. The effective control and practical eradication of the disease on the mines should not prove a very difficult matter.

3. *Bilharziasis* (*Schistosomiasis*).—Further appreciative letters have been received from various sources regarding the pamphlet 339 (Health) issued by this Department some eighteen months ago. As a result of its wide distribution and the press notices and other publications there are now few people in the country who do not know the cause and methods of infection of human red water, and that the disease is curable by a course of injections. The fact that these injections have to be administered by a medical man sometimes causes difficulty, especially in remote areas. There is reason to fear that the disease is becoming more prevalent, especially amongst schoolboys, in certain parts of the Union, so that more comprehensive measures are called for. The Department is testing a preparation "Emetine Periodide" in the form of a powder made up in one-grain capsules and intended for administration by the mouth, one capsule to be given three times a day until a total of 45 grains has been taken.

4. *Dengue Fever*.—During the past year an extensive outbreak occurred along the Natal coastal belt, being most severe in and around Durban. The last epidemic of the disease in South Africa was in 1897, when the same area also suffered severely. Such epidemic recurrences at intevals of several years are characteristic of dengue fever. The type of the disease and the courses of the two outbreaks were closely similar, and were quite characteristic. It is estimated

that during the recent epidemic nearly one-half of the European population of Durban was affected, and that some 50,000 cases in all occurred in Durban and the peri-Durban area. The Indian and native populations suffered much less, probably only about one-tenth of their number being affected. The number of deaths directly attributed to dengue amounted to about sixty, most of these being due to complications such as acute nephritis or intestinal hæmorrhage, or to recrudescence of old septic foci such as liver or mastoid abscess or of tuberculosis.

As is usually the case with dengue, the origin of the infection in this epidemic is obscure. The first cases recognized were at Isipingo, on the Natal South Coast, in January, 1926, but their origin was not traced. Shortly after this the infection spread to Durban, where at least 1,000 cases were diagnosed between the months of March and June of the same year. Between July and November no cases were reported, though sporadic cases probably occurred, but recrudescence occurred from December onwards, when the disease was recognized not only in Durban but in several of the small seaside resorts along the North and South Natal Coasts. The height of the epidemic was reached in Durban during April and May, 1927. Subsequently the disease extended inland as far as Pinetown on the main railway line, southward as far as Kelso Junction, and on the North Coast as far as Stanger. The affected area was therefore circumscribed, and did not extend beyond about 40 miles from Durban.

The disease is spread mainly, if not entirely, by the " tiger " or " domestic " mosquito, *Aedes* (*Stegomyia*) *fasciata*, which is very common in the coastal districts of Natal. This mosquito breeds almost exclusively in vegetation and small collections of water near dwellings. Certain types of trees and plants, including trees which have cavities in their trunks, retain water for several days, enabling the larvae of these mosquitoes to hatch out. Collections of water around dwellings, as in rain-water tanks, empty tins, pails, or broken bottles are especially favourable for the breeding of this mosquito. It is possible that another mosquito—*Culex fatigans*—common in the same areas and in many other parts of the Union, may also play the rôle of " carrier." Preventive measures against dengue, as against malaria, should be directed mainly against the elimination of such breeding-places.

The infective virus is probably carried over from one summer to the next, not in the blood of human " carriers," but in infected mosquitoes which hibernate and survive during the intervening winter months in warm and sheltered spots such as stables containing animals, or in human dwellings. A few sporadic cases of dengue were still being notified during June and July of this year, and this will probably continue during the winter months, so that the infection will quite likely survive in Durban until the coming summer.

The circumstances call for an active anti-mosquito campaign on the part of the local authorities concerned, steps being taken to secure, both by publicity methods and suitable regulations under Section 36 of the Public Health Act, 1919, the active co-operation of householders and the public generally.

5. *Enteric or Typhoid Fever.*—Notifications show a decrease of 436 as compared with the previous year. No serious epidemics have occurred during the year, with the exception of a severe outbreak at De Rust, Cape Province, in January, 1927, where eighteen European cases and thirty-eight non-European cases occurred. Owing to the prevalence of the disease in recently proclaimed alluvial diamond diggings in the Lichtenburg District it became necessary in January last to establish a field hospital at Elandsputte, which hospital was still in existence at 30th June, 1927. The hospital is in charge of a qualified matron and trained nurses, has a motor-ambulance attached for the removal of cases, and is under the direction of the District Surgeon, who attends daily.

From the time the hospital was opened on 18th January, 1927, until 30th June, 107 European and 126 native cases of enteric were admitted and treated, in addition to 5 European "other than enteric" cases. Eight European and 40 native enteric patients died.

A trained staff under the direction of the Mines Department is in charge of the sanitary arrangements, and everything reasonably possible under the circumstances has been done to reduce the incidence of enteric and other intestinal infections to a minimum.

The following table shows the notifications of enteric or typhoid fever in certain centres during the year, *beginning with those in which the incidence rate has been highest.* This year none of the larger centres show an incidence rate of 1·5 per 1,000, but in a number of the intermediate and smaller urban centres the rate is still very excessive and points very definitely to grave sanitary defects:—

TABLE G.—ENTERIC OR TYPHOID FEVER: NOTIFICATIONS AND INCIDENCE IN CERTAIN LOCAL AUTHORITY AREAS DURING THE YEAR ENDED 30TH JUNE, 1927 (ARRANGED IN ORDER OF INCIDENCE RATE).

Place.	Notifications.			Incidence per 1,000 of Population.		
	European.	Non-European.	Total.	European.	Non-European.	All Races.
De Rust.....V.M.B.	18	38	56	33·83	107·34	63·20
Murraysburg.....M.	19	7	26	23·40	12·56	18·99
Alice.....M.	8	28	36	10·98	16·68	14·96
Warden.....M.	10	3	13	12·43	9·55	11·62
Malmesbury.....M.	27	19	46	11·45	10·37	10·98
Ladybrand.....M.	30	12	42	13·26	7·43	10·83
Korsten.....V.M.B.	19	63	82	1·00	9·72	9·80
Reitz.....M.	20	—	20	17·73	—	9·35
McGregor.....M.	—	9	9	—	14·68	9·25
Caledon.....M.	20	4	24	12·00	3·01	8·01
Brandfort.....M.	12	7	19	8·19	6·32	7·39
Tarkastad.....V.M.B.	5	8	13	5·09	6·40	5·82
Uniondale.....M.	8	—	8	11·44	—	5·61
Steynsburg.....M.	10	2	12	7·22	2·48	5·47
Graaff-Reinet.....M.	18	26	44	3·93	5·45	4·71
Parys.....M.	16	1	17	6·02	0·98	4·63
Aberdeen.....M.	8	4	12	4·59	4·29	4·49
Riversdale.....M.	12	1	13	7·52	0·71	4·32
Molteno.....M.	3	7	10	2·46	5·79	4·12
Smithfield.....M.	6	2	8	4·72	2·92	4·09
Ermelo.....M.	9	8	17	3·76	4·35	4·02
Springs.....M.	6	74	80	1·11	4·96	3·94
Victoria West.....M.	7	1	8	6·54	1·08	3·92
Klerksdorp.....M.	17	6	23	5·01	2·33	3·86
Boksburg.....M.	33	107	140	2·71	4·18	3·71
Adelaide.....M.	8	1	9	7·15	0·72	3·59
Burghersdorp.....M.	6	6	12	3·58	3·46	3·52
Montagu.....M.	7	2	9	4·04	2·32	3·47
Vrede.....M.	9	2	11	5·78	1·21	3·42
Stellenbosch.....M.	6	17	23	1·36	4·70	2·86
Germiston.....M.	58	65	123	3·50	2·43	2·84
Middelburg (Transvaal)...M.	14	—	14	5·38	—	2·83
Uitenhage.....M.	17	23	40	2·09	3·59	2·75
Greytown.....M.	6	2	8	4·82	0·91	2·33
Krugersdorp.....M.	34	60	94	2·34	2·06	2·15
Newcastle.....M.	4	5	9	2·01	2·27	2·15
Ficksburg.....M.	7	1	8	2·91	0·75	2·14
George.....M.	4	8	12	1·05	4·25	2·12
Cradock.....M.	8	6	14	2·35	1·69	2·01
Strand.....M.	4	5	9	1·34	3·32	2·01
Grahamstown.....M.	14	16	30	1·83	2·08	1·95
Brakpan.....M.	5	44	49	0·59	2·50	1·88
Aliwal North.....M.	3	9	12	1·13	2·23	1·84
Robertson.....M.	7	1	8	2·52	0·53	1·72
Somerset East.....M.	2	7	9	0·82	2·41	1·69
Innesdale.....M.	16	—	16	2·24	—	1·60
Wellington.....M.	7	1	8	2·45	0·40	1·49
Benoni.....M.	19	52	71	1·27	1·56	1·47
Bethlehem.....M.	3	7	10	0·75	2·34	1·43
Pretoria.....M.	44	52	96	1·03	2·03	1·41
Kroonstad.....M.	10	4	14	2·01	0·79	1·40
*Cape Town.....M.	143	153	296	1·26	1·51	1·38
Potchefstroom.....M.	14	6	20	1·50	1·15	1·37
Paarl.....M.	9	9	18	1·34	1·35	1·35
Worcester.....M.	5	7	12	1·18	1·47	1·33
*Port Elizabeth.....M.	39	24	63	1·32	1·11	1·23
Ladysmith (Natal).....M.	3	5	8	0·84	1·40	1·12
Durban.....M.	49	63	112	0·91	1·30	1·10
Pietermaritzburg.....M.	21	17	38	1·20	0·96	1·08
Britstown.....M.	15	—	15	1·56	—	0·99
*Wynberg.....M.	8	15	23	0·70	1·16	0·94
Kimberley.....B. of H.	11	24	35	0·67	1·12	0·93
Johannesburg.....M.	158	120	278	0·93	0·90	0·92
Roodepoort.....M.	9	11	20	1·24	0·64	0·82
*Bloemfontein.....M.	21	13	34	1·03	0·56	0·78
*East London.....M.	8	8	16	0·42	0·45	0·43

M. = Municipality.
V.M.B. = Village Management Board.
B. of H. = Board of Health.

* Rates calculated on population as at census, May, 1926; others calculated on European population as at census, May, 1926, and non-European population as at census, May, 1921.

6. *Influenza.*—In July, 1926, outbreaks of fairly severe type occurred in the Bloemhof district and at the Leeuwpoort mine, Nylstroom district (Transvaal). At Bloemhof there were some 190 cases with fifteen deaths, five of whom were Europeans. The severity of the outbreak amongst the natives was in most cases aggravated by exposure, underfeeding and bad nursing. At the Leeuwpoort mine there were 353 cases, with 2 white and 25 native deaths, all from pneumonic complications.

On 16th February, 1927, the s.s. "Ceramic" arrived at Capetown from Liverpool for Australia with 300 passengers, of whom 208 were for Capetown. A mild outbreak of influenza had occurred on board during the voyage and on arrival at Capetown three persons were still sick. As there had been a considerable prevalence of influenza in parts of Great Britain, including London, and in places in France and Spain shortly before, the vessel was given restricted pratique, i.e. no passengers for Australia or ship's crew allowed to land; ship's officers only allowed to land under permit and where shown to be necessary. Two patients and their immediate contacts were removed to the isolation hospital, and the other Capetown passengers landed after medical examination and under medical surveillance. The third case, in a passenger for Australia and in a convalescent stage, was allowed to remain in the ship's isolation ward. The following week the s.s. "Benalla" arrived at Capetown from London en route to Australia with 650 passengers, including 51 for South Africa. During the voyage there had been some 50 cases of mild influenza on board with two cases of pneumonia. The vessel was given restricted pratique; one case of pneumonia was removed to the isolation hospital. The other South African passengers were landed after medical examination and under medical surveillance; no outbreak of the disease in the Union resulted.

Whilst occasional sporadic outbreaks on vessels may often be successfully dealt with in this way, it must be recognized that, in view of the nature and high diffusibility of the infection of influenza, should another widespread prevalence or pandemic occur, the disease could only be excluded at the ports of the Union at enormous cost and with the inevitable result of paralysing our oversea trade and passenger traffic. The key-notes of policy of the Government and local authorities in regard to influenza should therefore be vigilance and preparedness.

7. *Leprosy.*—The leprosy position in the Union was dealt with very fully in last year's annual report.

The policy and proposals outlined in previous reports have been steadily pursued. Although no really effective and reliable remedy for the disease has yet been discovered several methods of treatment are being carried out at all the Department's leper institutions with, on the whole, encouraging results. The most effective method is still the old Chaulmoogra oil treatment which has been in use in South Africa for over thirty years. The British Empire Leprosy Relief Association, London, in a recent report says, referring to South Africa, "this important Dominion is now in the van of progress regarding leprosy and is setting a good example to all leprosy-infected countries of scientifically based and efficient segregation measures to reduce the scourge." But it is realised that much remains to be

done before the Department can fairly claim to be on the road to effective control and ultimate eradication of the disease amongst the natives; amongst the Europeans and mixed coloured sections of the population it is now well under control and steadily decreasing. It was hoped last year that a medical officer with knowledge of natives and special training and abilities in connection with leprosy research and investigation would be appointed, but the proposals were negatived by Government on the ground of cost. The Department, supported by the Council of Public Health and the Leprosy Advisory Committee, feels very strongly that such an appointment is necessary and that it will prove sound even from a purely business point of view. The proposals are being re-submitted in the hope that the necessary funds will be voted for next financial year.

Mr. F. Oldrieve, Secretary, British Empire Leprosy Relief Association, visited South Africa during the year, was granted facilities to visit the leper institutions and afterwards met the Leprosy Advisory Committee at Capetown. Mr. Oldrieve stated at this meeting that he was much impressed with what he had seen and he congratulated the Department on the excellent manner in which the institutions were organised and administered; the patients were well treated and their only complaint appeared to be that they were compulsorily segregated. He particularly commended the policy of releasing, under medical surveillance, "arrested" and non-infective cases—"South Africa had undoubtedly taken the lead in this." The only questions to his mind now were to what extent this system could be further extended, consistent with adequately safeguarding the public health, and whether the system of leper clinics in connection with mission stations, which had proved so useful in India, could be utilized in South Africa. Mr. Oldrieve has had wide experience of leprosy work in other countries and his views and suggestions will be borne in mind.

As pointed out in previous reports the great need is for more publicity and educative work amongst the classes of the population chiefly affected, with regard to the nature of leprosy, its mode of spread and conditions favouring spread, its special infectivity for children and young people *and the great importance of early recognition and treatment.* The working of the system of annual examinations by the Leprosy Board and releasing patients in whom the disease is no longer active and infective is having very beneficial results; the atmosphere of the leper institutions is now much more hopeful; a large percentage of the inmates submit to prolonged—and often painful—active anti-leprotic treatment, and carry out with zeal the directions of the medical officer regarding baths, exercises and so forth. In most native districts there are now a number of probationally discharged patients and these are spreading the idea that when a man discovers he has leprosy the best thing he can do is to go at once to a Government leper institution and get treated there—with the result that voluntary admissions to these institutions, though not yet frequent, are by no means so rare as they used to be. The discouraging fact, however, is that nearly all the new admissions are advanced cases of four, six, or more years' duration, some of them already past the more infectious stage of the disease and most of them unpromising for successful treatment.

Supplies of copies of excellent booklets regarding leprosy, published by the Indian Council of the British Empire Leprosy Relief Association, have been obtained and widely distributed. Steps have been taken to specially interest the Transkeian General Council and native district councils in the matter, and to secure the co-operation and assistance of native newspapers, missionaries, school teachers and others. A proposal to arrange for a party of two or three native patients selected for the purpose by the patients in the Emjanyana institution to tour some of the districts of the Transkei in which the disease is seriously prevalent, hold meetings and give addresses regarding leprosy and the importance of early notification and active treatment such as is given in the Government leper institutions, is at present under consideration.

A meeting of the Leprosy Advisory Committee for the Union was held at Capetown on 28th June, 1927, when the following resolutions were passed; a note of the action taken in regard to each is appended:—

(1) *General Position and Policy regarding Leprosy in the Union*:

"That the instructions issued by the Department of Public Health to Leprosy Boards be modified so as to give wider discretionary powers regarding the probational release, under medical surveillance and on parole, of stabilised pure anaesthetic cases not discharging leprosy bacilli, even where the clinical signs are not conclusive as to complete arrest of the disease." (This has been done.)

(2) *Publicity and Educative Work*:

(*a*) "That in future, in the opinion of this Committee, no candidate for the post of district surgeon should be selected for appointment unless he is competent to diagnose leprosy, or is prepared to make himself so competent; also that the Government should provide facilities for this purpose at leper institutions." (This has been arranged for.)

(*b*) "That whilst fully recognising the value of publicity in regard to recent improvements in the treatment of leprosy, and that lay organisations cannot be expected to adhere to strict scientific accuracy, this Committee deprecates any over-statement of the possibilities of curing leprosy in its various forms and stages, any such over-statement being calculated to cause disappointment among the lepers themselves and difficulties in the administration of leper institutions."

(3) *Institutional Segregation of Lepers and Policy regarding the Robben Island Leper Institution*:

"That in view of all the circumstances regarding the Robben Island Institution and the Government's decision not to remove the patients to the Pretoria Institution, and the difficulties and cost of providing a suitable institution on the mainland in the Cape area, the Committee considers that the Robben Island Leper Institution should be continued for the present." (This policy has since been confirmed by the Minister.)

(4) *Leprosy Treatment and Research*:

" This Committee learns with considerable disappointment that its previous recommendation regarding the appointment of a Leprosy Research Officer for the Union has not been given effect to, and that no financial provision has been made in this year's Estimates for such an appointment. In view of the leprosy position in the Union and the pressing need for further investigation and research, and bearing in mind the great reduction of expenditure on leprosy in the Union effected in recent years, this Committee reaffirms its resolution of 24th June, 1925, and earnestly urges that such an appointment be made as soon as possible." (This matter is again being represented to the Government.)

(5) *Amending Leprosy Bill*:

" That a consolidating and amending Leprosy Bill for the Union should be enacted as soon as conveniently possible." (This will be done, but as the general policy of the Government in regard to leprosy is still in a somewhat fluid state the Minister does not propose to introduce such a Bill during next session of Parliament.)

(6) *Use of Paper Money in Leper Institutions*:

" That only metallic currency should be used by patients in leper institutions, the coins to be sterilised before being passed on to others." (Except at one institution this has been the rule for years past; it is now being carried out at all leper institutions in the Union.)

The following tables give the salient figures regarding leprosy and the leper institutions during the year:—

Table H.—(i) Leper Institutions: Admissions during the Year ended 30th June, 1927.

Institution.	First Admissions.								Readmissions.								Transfer from Other Institutions.								Total.		
	E.*		N.		C.		A.		E.		N.		C.		A.		E.		N.		C.		A.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Persons.
Robben Island	2	—	1	—	8	2	—	—	1	—	—	—	—	2	—	—	3	4	—	—	26	12	—	—	41	20	61
Pretoria	6	2	105	78	1	—	1	—	4	2	2	1	—	—	—	—	—	—	—	—	—	—	—	—	119	83	202
Mkambati	—	—	25	19	—	—	—	—	—	—	27	12	—	—	—	—	—	—	6	—	—	—	—	—	58	31	89
Emjanyana	—	—	82	52	—	—	—	—	—	—	5	3	—	—	—	—	—	—	9	2	—	—	—	—	96	57	153
Amatikulu	—	—	47	38	—	—	1	—	—	—	6	6	—	—	—	—	—	—	5	2	—	—	—	—	59	46	105
Bochem	—	—	7	7	—	—	—	—	—	—	1	1	—	—	—	—	—	—	16	12	—	—	—	—	24	20	44
Total	8	2	267	194	9	2	2	—	5	2	41	23	—	2	—	—	3	4	36	16	26	12	—	—	397	257	654

* E. = European. N. = Native. C. = Coloured or Mixed. A. = Asiatic.

Table H (ii).—Leper Institutions: Deaths of Patients during the Year ended 30th June, 1927.

Institution.	European.		Native.		Coloured.		Asiatic.		Total.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Persons.
Robben Island	3	2	10	2	—	5	—	—	13	9	22
Pretoria	12	6	65	35	2	—	—	—	79	41	120
Mkambati	—	—	10	7	—	—	—	—	10	7	17
Emjanyana	—	—	44	17	—	—	—	—	44	17	61
Amatikulu	—	—	25	7	—	—	—	—	25	7	32
Bochem	—	—	8	2	—	—	—	—	8	2	10
Total	15	8	162	70	2	5	—	—	179	83	262

Table H (iii).—Leper Institutions: Discharges, Escapes, Transfers, etc., during the Year ended 30th June, 1927.

Institution.	Probationally Discharged as "Arrested and Non-Infective."									Discharged as Non-Leprous.									Escaped.									Transferred to Other Institutions.								
	E.		N.		C.		A.		Total.	E.		N.		C.		A.		Total.	E.		N.		C.		A.		Total.	E.		N.		C.		A.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	
Robben Island	—	—	2	—	—	1	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Pretoria	1	1	16	17	1	—	—	—	36	1	—	5	5	—	—	—	—	11	2	—	2	1	—	—	—	—	5	2	4	43	18	19	10	—	—	96
Mkambati	—	—	14	6	—	—	—	—	20	—	—	—	1	—	—	—	—	1	—	—	25	12	—	—	—	—	37	—	—	—	—	—	—	—	—	—
Emjanyana	—	—	21	23	—	—	—	—	44	—	—	—	—	—	—	—	—	—	—	—	6	1	—	—	—	—	7	—	—	13	2	—	—	—	—	15
Amatikulu	—	—	32	16	—	—	1	—	49	—	—	4	4	—	—	—	—	8	—	—	4	—	—	—	—	—	4	—	—	—	—	—	—	—	—	—
Bochem	—	—	3	—	—	—	—	—	3	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1	1	88	62	1	1	1	—	155	1	—	9	11	—	—	—	—	21	2	—	37	14	—	—	—	—	53	2	4	57	20	19	10	—	—	112

TABLE H (iv).—LEPROSY: PATIENTS PROBATIONALLY DISCHARGED FROM INSTITUTIONS OR CLASSIFIED AS "ARRESTED AND NON-INFECTIVE," AND NUMBER OF SUCH PATIENTS SINCE READMITTED AS RECRUDESCENT.

Year ended 30th June.	Probationally Discharged from Institution (and actually left).					Classified as "Arrested and Non-Infective," for whom suitable accommodation could not be obtained or who for other reasons were allowed to remain at Institution.					Probationally Discharged Patients who have been Readmitted to Institutions as Recrudescent.				
	European.	Coloured.	Native.	Asiatic.	Total.	European.	Coloured.	Native.	Asiatic.	Total.	European.	Coloured.	Native.	Asiatic.	Total.
1923	11	23	468	1	503	3	—	40	—	43	—	—	8	—	8
1924	6	29	217	2	254	1	—	10	—	11	—	—	2	—	2
1925	6	5	94	—	105	—	—	10	—	10	—	—	2	—	2
1926	3	5	62	—	70	1	1	28	—	30	1	—	4	—	5
1927	2	3	166	—	171	—	2	59	—	61	4	2	12	—	18
TOTAL	28	65	1,007	3	1,103	—	—	—	—	—	5	2	28	—	35

TABLE H (v).—LEPER INSTITUTIONS: PATIENTS THEREIN ON 30TH JUNE, 1927.

Institution.	European.		Native.		Coloured.		Asiatic.		Total.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Persons
Robben Island....	13	9	15	6	69	41	—	—	97	56	153
Pretoria....	52	26	421	308	6	5	3	—	482	339	821
Mkambati..	—	—	135	96	—	—	—	—	135	96	231
Emjanyana.	—	—	342	252	—	—	—	—	342	252	594
Amatikulu..	—	—	225	188	—	—	2	1	227	189	416
Bochem....	—	—	61	46	—	—	—	—	61	46	107
TOTAL..	65	35	1,199	896	75	46	5	1	1,344	978	2,322

TABLE H (vi).—LEPROSY: CASES REMAINING IN THEIR OWN HOMES ON 30TH JUNE, 1927.

Province.	Certified and Awaiting Removal.	Home Segregated.	Probationally Discharged from Leper Institutions.	Total.
Cape (Province proper).....	6	—	276	282
Transkei.....	15	4	270	289
Transvaal.....	4	5	294	303
Natal.....	17	7	226	250
Orange Free State.....	1	1	59	61
UNION.....	43	17	1,125	1,185

8. *Malaria.*—No general prevalence occurred during the year, doubtless largely owing to drought conditions existing throughout many of the endemic areas. In Zululand a serious outbreak occurred in the Lower Umfolozi District and the low-lying portion of Melmoth District adjoining, mostly on sugar plantations.

Localized prevalence of a severe type occurred in the areas opened up by the extension of the Matubatuba-Gollel railway line. The question of amending the Department's malaria map in respect of the type of malaria occurring in these areas is under consideration.

The Railway Administration, by arrangement with contractors, effected considerable improvement in the housing and feeding of natives working on railway construction, and also instituted some effective anti-mosquito work along the line

No new cases were reported in the Hartebeestpoort irrigation area. Localized prevalences occurred in the Districts of Pietersburg, Waterberg, Zoutpansberg, and Lydenburg. The system of departmental issues of quinine, free to indigents and at cost price to others. where supplies were not readily available, was continued.

The mosquito survey of the Union by the South African Institute for Medical Research, referred to in last report, was commenced and considerable progress made during the year. A railway caboose

was specially fitted up as a travelling laboratory to facilitate the work of the research officers. A preliminary report has been submitted by these officers containing much useful information as to the species responsible for the conveyance of infection and their habits as regards breeding, feeding, biting, and migrating. This report is being published by the Institute.

The two species which appear to be mainly responsible are *A. costalis* and *A. funestus*. The drought conditions mentioned interfered with and limited the work, but an immense amount of useful information was collected—quite sufficient to guide administrative action in respect of general and special anti-mosquito measures. It is hoped to continue the survey, both in Zululand and the northern Transvaal, during the coming summer.

9. *Meningitis: Epidemic Cerebro-spinal.*—During the year, 297 cases were notified, as compared with 389 during the previous year. Apart from a severe outbreak in the Malmesbury District (Cape) and several cases in the Middelburg District (Transvaal), the majority of the cases were, as usual, notified from the mines in the Rand area.

10. *Plague*—(1) *Plague in Rodents.*—The rodent survey of the Union has been extended and brought up to date, and the results embodied in a revised map showing the position as at August, 1927, which is published with this report. The outstanding feature of this work has been the discovery that in several localities where the conditions of soil and vegetation, and the presence of numerous natural enemies, have been recorded since 1922 as not very favourable for abundant rodent life, rodents have recently increased to such an extent as to enable plague infection to spread. Ploughing and cultivation of land formerly hard and unfavourable for burrowing rodents have taken place over wide areas and made the conditions suitable for their multiplication. It has therefore been necessary to modify to some extent the basis on which previous plague maps were framed. The attached map, in addition to giving the information contained in previous maps—

(*a*) indicates in what parts of the Union the various species of veld rodents predominate;

(*b*) distinguishes between country definitely unsuitable to abundant rodent life and country which may later become suitable;

(*c*) indicates country which is definitely unsuitable for gerbilles but which is heavily infested with other species of rodents.

The extension of the plague-infected area in the north-western Cape districts mentioned in the last annual report has considerably increased. The line of present infection spreading westwards is about 150 miles in length, running from the Orange River southwards to some miles north of Van Rhynsdorp, and will probably reach the coast during the coming summer season. Eastwards of Van Rhynsdorp tongues of infection have spread southward in river valleys (notably the Doorn and Tanqua) as far as where the districts of Ceres and Sutherland join. The thickly populated grain districts of the south-west Cape are threatened by a southerly extension of rodent infection, as wild rodents (chiefly *Lobengula* gerbilles) are prevalent in the coastal belt as far as the Cape Peninsula, where they exist side by side with brown rats (*Rattus norwegicus*), which may be classed as domestic or house rats.

With the object of preventing, or at least delaying, the southerly spread of veld rodent infection in this area, the Department has employed specially trained rodent officers with gangs of natives to create rodent-free belts of veld. A strategic line was selected in order to make use of natural boundaries, such as rivers, irrigation canals, and more or less barren mountain ridges, unsuitable for burrowing rodents. The line chosen follows the course of the Olifants and Doorn Rivers and the Cedarsburg and Bokkeveld mountains, and commences above the tidal waters of the Olifants River, follows the course mentioned, and terminates south of Citrusdal, the belt being altogether about 100 miles in length and from one to two miles wide as local circumstances required. The first clearance of this belt was completed towards the end of May, 1927, and it is being patrolled and kept clear. The methods employed varied according to the species of rodents found. Gerbilles and hares were exterminated by gassing and by the use of wheat poisoned with strychnine. Karroo rats, which are not grain eaters, were exterminated either by gassing or by burning their nests and killing by sticks or dogs. Striped mice, with which strychnine-poisoned grain is not always very effective, were killed in the same way. Up to the present the belt has been effective, but there is always the danger that hares, which often trek considerable distances in one night, may convey infected fleas to the burrowing rodents beyond the cleared belt.

Extension in Eastern Cape Districts.—In April, 1927, infection was found to have spread extensively eastward to previously clean areas in the Districts of Rouxville, Herschel, Aliwal North, Barkly East and Wodehouse. In the Rouxville District infection certainly extends to the Basutoland border. In the other districts the eastern limit of infection is indicated by a line running north-west and south-east through Herschel, a point three miles east of Lady Grey and a point five miles west of Barkly East.

In the northern Cape and western Transvaal infection has extended into previously healthy country involving the Districts of Hopetown, Britstown, Prieska, Barkly West, Taungs, and Schweizer Reneke, and touches the Griquatown and Vryburg Districts. The spread of infection probably reached its height about December, 1926, and its westerly progress is now slightly checked by a strip of country which is rather patchy as regards gerbilles; ground squirrels and Zulu hares are, however, fairly numerous and (as in our past experience) may carry the infection through this strip. The country between the towns of Zeerust, Mafeking, Vryburg, Kuruman, and Griquatown and the border of the Bechuanaland Protectorate is heavily infested with *Lobengula* gerbilles, desert gerbilles, spring-hares, and ground squirrels. When infection reaches this area it will probably spread rapidly into the Bechuanaland Protectorate; there seems grave risk of this taking place within the next twelve or eighteen months. In the Kimberley area veld rodents are rapidly increasing in localities where they were almost wiped out by plague two years ago.

Occurrence of Rodent Infection near Roodepoort.—On the 23rd June, 1927, a white-tailed rat, found dead on land in the Roodepoort Municipality, proved to be plague-infected. This is an extension of rodent infection from country a few miles westwards known and reported to be infected three years ago. This is the first time that

this particular species, which is not numerous, has been found naturally infected. This occurrence in the thickly populated mining area of the Rand was met by prompt action on the part of the Roodepoort-Maraisburg local authority. In co-operation with the Johannesburg Municipality an extensive rodent-destruction campaign was immediately commenced and is still progressing.

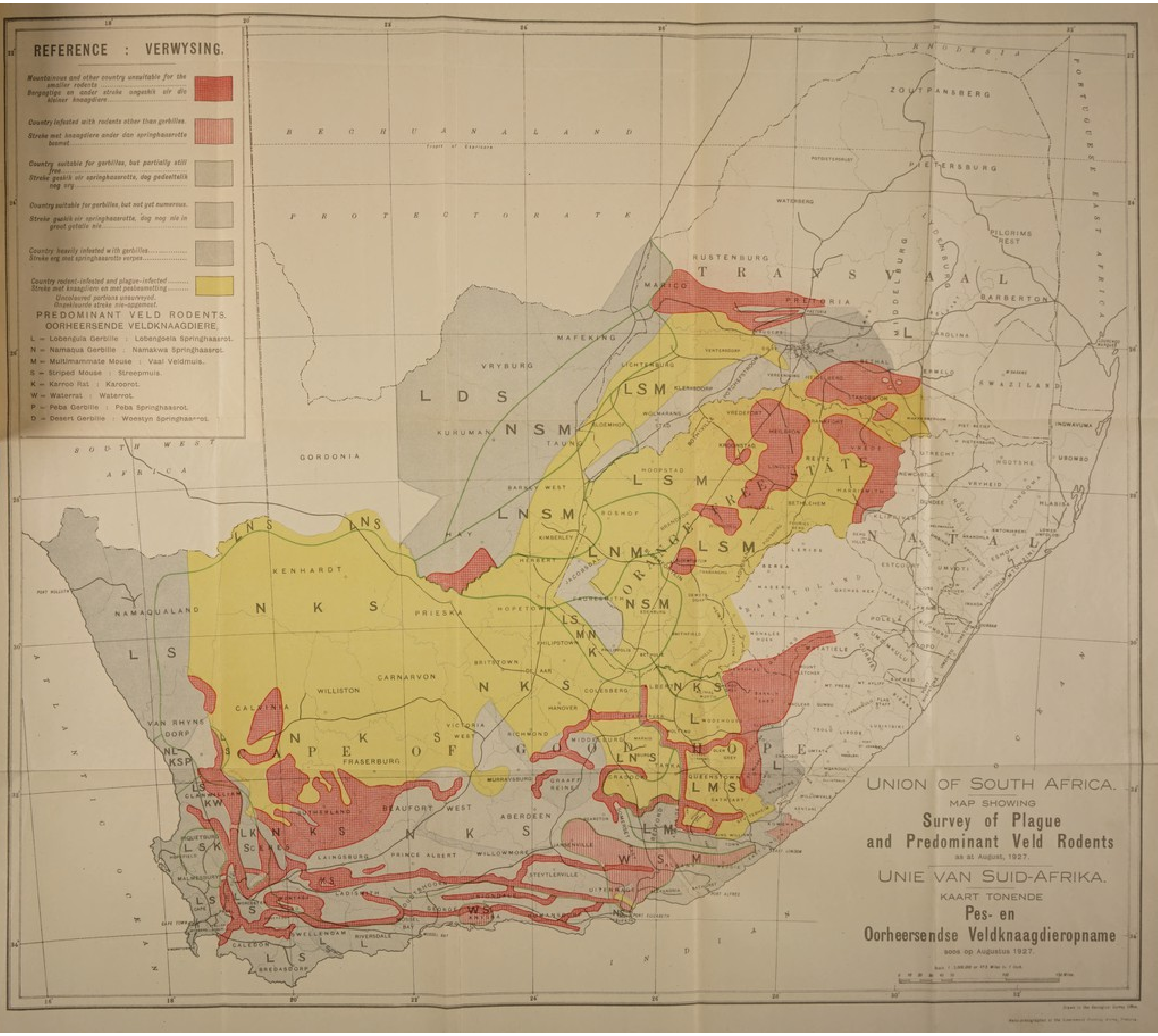
Compared with previous years the spread of veld rodent infection, particularly in the eastern and western Cape districts, has been rapid. The reasons for this are probably (*a*) drought in some areas necessitating unusual rodent migration, especially among hares; (*b*) increase of ploughing and cultivation in other areas, which makes burrowing easy and favours the growth of rodent foodstuffs, i.e. bulbs, certain sweet grasses, and grain; (*c*) destruction of the natural enemies of rodents, which include mongoose, the smaller wild cats, owls, etc.

(2) *Plague in man* occurred as single cases or in small groups of cases. This is shown by the fact that the seventy-five cases reported involved no less than nineteen magisterial districts in the western, middle, and eastern Cape and the Orange Free State. Each single case and every original case in each small group of cases acquired infection from veld rodents. All the cases occurred in rural areas. Seventy-seven per cent. of the cases were of the bubonic type, 16 per cent. pneumonic, and 7 per cent. septicaemic. The available evidence goes to show that the original case in each small group of cases was of bubonic type. A case of pneumonic plague occurred on the R.M.S. "Armadale Castle" at Capetown. The vessel arrived in Table Bay on 4th April, 1927, after calling at Durban, East London, and Port Elizabeth. On the evening of 6th April a European electrician who had been employed on board during the three preceding voyages complained of feeling unwell. He was removed to hospital next morning and died two hours later, the diagnosis being made on the post-mortem appearances and bacteriological examinations. No clue to the source of his infection could be discovered at any of the previous ports of call or on the vessel, either before leaving Capetown or after fumigation by the Southampton port sanitary authority on arrival in England.

TABLE J.—PLAGUE CASES AND DEATHS IN THE UNION DURING THE YEAR ENDED 30TH JUNE, 1927.

Province.	Number of Outbreaks.	European.		Coloured or Native.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape.....	23	14	11	32	25	46	36
Natal.....	—	—	—	—	—	—	—
Transvaal.....	—	—	—	—	—	—	—
Orange Free State	16	5	3	24	17	29	20
UNION TOTAL..	39	19	14	56	42	75	56

(3) *Plague Research.*—The first report of the South African Institute for Medical Research on the plague research scheme mentioned in this Department's last annual report has been published by the Institute and widely distributed. It contains much useful


REFERENCE : VERWYSING.
Mountainous and other country unsuitable for the smaller rodents
Bergagtige en ander streke ongeskik vir die kleiner knaagdiere
Country infested with rodents other than gerbilles.
Streke met knaagdiere ander dan springhaasrotte besmet
Country suitable for gerbilles, but partially still free
Streke geskik vir springhaasrotte, dog gedeeltelik nog vry
Country suitable for gerbilles, but not yet numerous.
Streke geskik vir springhaasrotte, dog nog nie in groot getalle nie
Country heavily infested with gerbilles
Streke erg met springhaasrotte verpes
Country rodent-infested and plague-infected
Streke met knaagdiere en met pesbesmetting
Uncoloured portions unsurveyed.
Ongekleurde streke nie-opgemeet.
PREDOMINANT VELD RODENTS.
OORHEERSENDE VELDKNAAGDIERE.
L = Lobengula Gerbille : Lobengoela Springhaasrot.
N = Namaqua Gerbille : Namakwa Springhaasrot.
M = Multimammate Mouse : Vaal Veldmuis.
S = Striped Mouse : Streepmuis.
K = Karroo Rat : Karoorot.
W = Waterrat : Waterrot.
P = Peba Gerbille : Peba Springhaasrot.
D = Desert Gerbille : Woestyn Springhaasrot.
BECHUANALAND PROTECTORATE
SOUTH WEST AFRICA
TRANSVAAL
ORANGE FREE STATE
NATAL
CAPE OF GOOD HOPE
RHODESIA
PORTUGUESE EAST AFRICA
SWAZILAND
ATLANTIC OCEAN
INDIAN OCEAN
UNION OF SOUTH AFRICA.
MAP SHOWING
Survey of Plague and Predominant Veld Rodents
as at August, 1927.
UNIE VAN SUID-AFRIKA.
KAART TONENDE
Pes- en Oorheersendse Veldknaagdieropname
soos op Augustus 1927.

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information and materially advances our knowledge of the plague problem in South Africa. The report has been very favourably received and reviewed by the leading scientific journals and by authorities on plague throughout the world. It is proposed that certain lines of research should be further followed up, particularly the flea survey of the Union and the testing of the " Tiger River bacillus " as a means for destroying veld rodents. So far these tests have proved disappointing, the disease apparently not spreading beyond rodents which have actually eaten materials infected with the culture.

(4) *Anti-rodent Measures.*—Where magistrates are the local authorities under the Health Act, considerable pressure under the regulations has been put on owners and occupiers to make repairs and alterations where necessary. The inspecting rodent officers of the Department supply the necessary information and recommendations. Urban and rural local authorities throughout the Union have been urged to enforce the rat-proofing regulations. There is a good deal of evidence to show that appreciable progress has been made by many local authorities in this respect. The first, and by far most effective and permanent, line of defence as regards stores, dwellings, and urban areas generally is to " build-out the rat." The problem of destroying or keeping down the numbers of veld rodents is essentially one for the owners and occupiers of land, acting with the advice and assistance of the local authority and the Government. Experiments by the South African Railways and a co-operative grain society are being undertaken with the object of finding a cheap and efficient way of rat-proofing maize and other rodent-attractive produce stacked in the open.

The type of rat-guard devised by the Department for mooring cables of vessels continues to give good results. Very favourable reports regarding it, and requests for specimen guards or for plans and specifications, have been received from the League of Nations Bureau at Singapore, a large shipping company in Japan, and others. Officers of the Department have designed, and are at present testing, a " tunnel rat-trap " intended for permanent use in forage stores and similar buildings and on ships.

For the destruction on a large scale of grain-eating veld rodents (a class which includes practically all the plague-carrying rodents except Karroo rats and vlei water-rats), much the cheapest and quickest, and the most effective, method has proved to be strychnine-poisoned grain—prepared by soaking the grain for twenty-four hours in a solution of 1 oz. of strychnine hydrochloride and 1 lb. sugar in sufficient water to cover 10 lb. of the grain, the grain being thereafter dried in the sun. Such grain must be used with great care as it is highly poisonous to birds, domestic animals, and man. A method of destroying burrowing rodents with " cyanogas dust " has given good results, except in certain soils. The dust is forced into the burrows with a special pump, the gas given off killing the contained rodents with their fleas.

A paper has been published by the Department's Chief Rodent Inspector entitled " The Natural Solution of the Rodent Plague and Insect Pest Problems," containing much useful information regarding the harmful results which inevitably follow the destruction of, and the advantages of fostering and encouraging, the natural enemies of these pests.

11. *Rabies.*—During the year four deaths attributed to rabies occurred, namely, a European girl in the Vryburg district, a European boy in the Standerton district and two natives in the Ermelo district, making a total of eleven such cases that have been reported since 1916. All these eleven cases were fatal, after an illness never lasting longer than six days. Five of the patients had been bitten by a mongoose within six weeks previous to the onset of symptoms. The Vryburg patient had been bitten four and a half weeks before by a genet cat. In the remaining five cases the biting animal was the domestic dog. Unfortunately owing to delay in reporting the occurrences, neglect to preserve and promptly forward suspected animals or materials and to other circumstances, in none of these cases has it been possible by laboratory investigation to verify or refute the suspicion or provisional diagnosis of rabies.

The Vryburg patient was a girl 3½ years of age. Thirty-two days prior to the onset of symptoms the parents had been visiting with the child at a neighbouring farm. All three slept outside on the stoep, the child being in a cot alongside the mother. The father was lying in bed smoking when he became aware of a noise in the cot. The mother awoke and, feeling instinctively with her hand for the child, encountered something furry, which she took to be the domestic cat. Trying to push this away she was bitten in the finger. Her husband then jumped up and found that a wild cat had its teeth embedded in the child's throat. Removing the animal with difficulty he was bitten in both hands. The cat was killed and thrown into the bush. After the child's condition (3½ weeks later) had been diagnosed, the parents were given a full course of treatment with carbolized anti-rabic vaccine, and neither developed symptoms.

In the Standerton case the infecting animal would appear to have been either a dog which had bitten the boy nine weeks previously and had died within ten days of biting the boy, or a yellow mongoose which had bitten the boy six weeks previously and had escaped. The Department only learnt of this case after death had occurred and no material suitable for laboratory examination was available.

12. *Senecio Disease.*—The Department's Annual Report for 1920 contained the following note regarding this disease:—

"During the year a peculiar disease occurring in George and neighbouring districts of the Cape Province, and of which abdominal pain, vomiting, and, later, dropsy, are the principal symptoms, was investigated by the Department. It was found that cases have been occurring during the past ten years at least; that during that period there have been some eighty cases, many of them fatal; that there were then eleven cases (most of these have since died); and that all the patients were Europeans of the poorer class whose staple food was bread. It was established, by experiments on animals and otherwise, that the disease is caused by the use of bread made from wheat containing the seeds of *Senecio ilicifolius* and *Senecio burchelli* (known locally as the "Springhaanbos"), which grow as weeds in the wheat fields of this part of the country (see Paper by Drs. F. C. Willmot and G. W. Robertson, *Lancet*, 23rd October, 1920). Prompt steps were taken to institute preventive measures and to bring the facts to the notice of farmers, millers, and the general public in the affected districts."

The Department's report for the eighteen months ended 30.6.22 mentioned that no further cases had occurred, but that precautions to exclude senecio seeds from wheat before milling were being continued. Up to recently no further cases were reported, but during the past year three cases were reported in the Riversdale district, three cases, two of them fatal, in the George district, and one fatal case in the district of Mossel Bay. At the request of this Department the Department of Agriculture kindly arranged for Mr. R. A. Dyer, Botanical Survey Officer at Grahamstown, to visit these and neighbouring districts and further investigate the matter. He subsequently submitted a useful report which fully confirms the results of the investigations made in 1920. In these districts are a good many old water-driven grinding mills, without winnowing appliances or other provision for properly cleaning the grain before grinding. In some mills which have such appliances they are not properly used. In either case the result is that practically all impurities in the grain go into the flour. All the cases of senecio disease recently reported were traceable to the eating of bread made from flour ground in such mills. Where grain is ground for the production of flour for sale, clean grain is almost invariably used; most of the grain ground in these small and remotely situated mills is, however, brought by neighbouring farmers who retain and use the flour, and pay for grinding at so much per bag. The staple food of the poorer farmers and their families in these parts is bread, and these are the people who have suffered most.

Senecio disease can be prevented by making compulsory the installation and proper use in all corn-grinding mills of modern winnowing appliances. At present, and pending the enactment of the Food and Drugs Adulteration Bill, there are no legal powers for enforcing this, but all mill-owners, farmers, and the public in the areas concerned have been carefully warned of the dangers and advised as to how to avoid them. Supervision is also being exercised by magistrates, district surgeons, police and local authorities.

13. *Smallpox and Vaccination.*—The subjoined tables show the occurrences of smallpox and the public vaccinations performed during the year. In the Cape, Transvaal and Orange Free State Provinces the incidence of smallpox was about the same as that shown in last annual report. In Natal, however, a severe outbreak occurred during October and November, 1926, resulting in 57 cases with 16 deaths in eleven different centres in and around Durban borough. The outbreak was almost entirely confined to Asiatics, only three patients being natives. The outbreak was checked and suppressed by prompt, thorough and widespread vaccination of all classes. The source of infection could not be traced. The first six cases were discovered on 14th October in a large and densely populated " barrack " in Durban, containing hundreds of Asiatics and a few natives. These six cases had deliberately been concealed by their friends, and were found in different stages of the disease, the first having developed the disease about six weeks previously. In consequence of this concealment not only did 26 further Indian cases subsequently develop in these barracks, but with three exceptions (three natives) in all the other cases contact with the first patients at the barracks could be traced, and all of them were Asiatics. Similar concealment also occurred in many subsequent cases, the mothers hiding sick children in cupboards, under

their skirts, etc., while other patients were secretly conveyed to other quarters to avoid detection by inspectors or visitors. In two instances the death of the patient brought to light the nature of his illness, and another case was discovered only when practically recovered.

The epidemic spread from Durban borough to the peri-Durban areas of Red Hill (nine cases), Mayville (three cases), and Sydenham (one case), and also to Tongaat (two cases). The first Tongaat case was in an Indian child who had been smuggled out of the barracks in Durban while in the incubation stage of the disease.

The mortality rate of the epidemic was undoubtedly increased by the efforts made by the Indian population to conceal their sick. Most of the patients were only discovered in the later stages of the disease, after receiving most inadequate attention, under miserable housing conditions, during the critical stages of their illness.

The value of the table showing the state as to vaccination of the smallpox cases is largely vitiated by the fact that in most of the cases the patients had been vaccinated only once, and that many years previously, during which time the immunity conferred by the vaccination had disappeared. Of the 54 cases treated at the isolation station at Durban, 12 adults and one child showed signs of having been vaccinated prior to the epidemic; of these one adult, who had been vaccinated as an infant some 20 years before, died. The remaining 41 cases (3 adults and 38 children) showed no sign and gave no history of previous vaccination and 13 of them (2 adults and 11 children) died. The death-rate would probably have been even higher but for the fact that several of the patients had been vaccinated during their incubation period and this, though too late to prevent attack, certainly modified the illness.

In view of the character of the population (Asiatic and native) amongst which the outbreak took place, it was obvious that no mere application of segregation or sanitary measures would suffice to check the spread of the disease, and that nothing less than prompt, thorough and widespread vaccination could do so. Vaccination was made compulsory upon all classes in a limited area around the infected foci in the borough, upon all non-Europeans throughout the borough and peri-Durban area, and voluntary in the surrounding native areas. The scheme of vaccination was well organised and promptly carried out so that within a few weeks out of an estimated population of 75,000 Europeans, 92,500 coloured and Asiatics and 126,500 natives (294,000 in all) in the affected area, some 200,000 persons were vaccinated. The aid of the local Press was sought from the first, and the statements published therein from day to day proved of great assistance in the campaign. In the face of the great and immediate danger and despite the fact that Durban was the chief stronghold of "conscientious objectors" in the Union, there was practically no opposition to vaccination, and all classes of the population came forward freely. Even among the Asiatics, while actual cases of smallpox were being hidden at home, the members of the family and other contacts as a rule lost no time in presenting themselves for vaccination. Some of the members of the local anti-vaccination league also came voluntarily with their families to be vaccinated, the local committee explaining that its objections were not to vaccination *per se*, but to compulsion in the matter! As a result of this wholesale vaccination, coupled of

course with the removal and isolation of cases and suspects and in some instances immediate contacts, the epidemic was quickly controlled and arrested. Despite the difficulties in regard to the concealment of cases, no fresh cases occurred after a month from the date of first discovery of the outbreak. No successfully vaccinated person developed smallpox a fortnight or more after vaccination, but 28 of those who had been in contact with cases and who were vaccinated immediately this was discovered developed the disease in a modified form up to twelve days thereafter, before the development of complete immunity.

The vaccine lymph almost exclusively used was that prepared at the Department's Vaccine Institute at Rosebank, Capetown, and the unanimous verdict of all the medical men who had vaccinated thousands during the epidemic was that it was potent and satisfactory in every way.

As a result of this outbreak it is estimated that over 90 per cent. of all Asiatics and natives in and immediately around Durban have been vaccinated at least once, but the European figure is considerably lower. Durban and its neighbourhood is therefore fairly safe from epidemics of smallpox for some years to come and the same is largely true of Johannesburg where some 35,000 persons were vaccinated in connection with two or three small outbreaks in May and June, 1926. But with the other large centres the case is very different, and with the continued and increasing neglect of vaccination the danger is becoming greater every year. Should an outbreak occur in one of the large coastal areas—the Cape Peninsula for instance—especially during the holiday or tourist season, the penalty for this neglect—in direct cost, in direct and indirect loss, and perhaps also in human life—might be a very heavy one. The only remedy for this state of matters is the effective enforcement of the vaccination provisions of the Public Health Act with or without provision for exempting the small section of genuine conscientious objectors to vaccination. That Act came into force at the beginning of 1920 and machinery for carrying out and enforcing its vaccination provisions was at once organised. Strenuous opposition was from the outset offered by conscientious objectors, especially in Durban, and repeated representations on the subject were made to the Minister. During 1921 prosecutions for non-compliance were instituted in various centres and convictions obtained, but in June, 1922, the Government gave instructions that prosecution of genuine conscientious objectors was to be discontinued by the Department until the matter had been further considered by Parliament. As there were no means or procedure for distinguishing the genuine from the spurious, this entailed the complete discontinuance of prosecutions in so far as this rested with the Government. The natural result has been a serious and continuous falling off in the number of persons vaccinated and the rapid accumulation of an unvaccinated population, entailing serious and increasing risk of epidemics of smallpox.

A Public Health Amendment Bill, including, with suitable safeguards, provision for the exemption of genuine conscientious objectors, has been before Parliament since 1923, but has not got beyond the initial stages. The Minister announced in Parliament last session that he was not prepared to bear the responsibility for further delaying

action in this matter and that unless the new clauses were enacted during the 1928 session he would consider himself relieved of all obligation to honour the undertaking given by the previous Government and would proceed to enforce, *in toto*, the vaccination provisions of the Public Health Act, 1919.

In connection with this matter and with the Durban outbreak, there was a significant experience with a sect numbering some 10,000 natives in the Inanda district, about 15 or 20 miles from Durban. This sect headed by its leader—a man of considerable influence whose daughter is married to the Paramount Chief of the Zulus—refused on religious grounds to submit to vaccination. All efforts by the district surgeon, magistrate, and Native Affairs officials to induce them to submit voluntarily proved unavailing and by the time that all the resources of reasoning and persuasion had been exhausted, the acute danger had passed. Unquestionably these people were "genuine conscientious objectors" on religious grounds, but only their leader and a few others had sufficient education and intelligence to form any individual opinion on the subject. Had cases of smallpox occurred amongst this sect a very serious position would probably have arisen.

Some years ago the magistrate, Ermelo, reported that if exemption from vaccination could be obtained by anyone on making a declaration of conscientious objection on religious grounds most of the natives in his district would take advantage of it; similar information has been received regarding other districts. These facts show the necessity for carefully safeguarding the proposed exemption clauses in the new Bill and restricting their application to persons who have sufficient intelligence to form a personal and independent opinion on the subject.

TABLE K.—(i) SMALLPOX: CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1927.

Province.	Number of Districts Affected.	European.		Non-European.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape	13	2	—	33	—	35	—
Natal	3	2	1	58	15	60	16
Transvaal	9	4	—	25	1	29	1
Orange Free State	3	—	—	4	—	4	—
UNION	28	8	1	120	16	128	17

TABLE K.—(ii) STATE AS TO VACCINATION OF CASES OF SMALLPOX REPORTED DURING THE YEAR ENDED 30TH JUNE, 1927.

Particulars.	European.		Non-European.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
* Previously Vaccinated	2	1	29	1	31	2
Unvaccinated	6	—	91	15	97	15
TOTAL	8	1	120	16	128	17

* In most cases many years previously.

Table L.—(i) Vaccination of Infants and Children in the Classes of the Population which Register Births. Year ended 30th June, 1927.

(These figures do not include revaccinations of 12-year-old children.)

Particulars.	Cape.		Transvaal.		Natal.			Orange Free State.	Union.
	Cape District.	Remainder of Province.	Rand Area.	Remainder of Province.	Durban.	Pietermaritzburg.	Remainder of Province.		
Births entered in vaccination register.....	10,596	16,092	8,085	10,201	2,032	607	1,869	5,317	54,799
Successfully vaccinated.....	3,656	441	432	978	829	216	667	387	7,606
Insusceptible to vaccination....	12	—	3	9	8	3	9	2	46
Vaccination postponed owing to illness.....	19	12	15	24	23	10	50	23	176
Previously had smallpox.....	7	—	—	—	—	—	—	—	7
Deaths of Infants under two years registered.....	2,016	1,203	749	717	150	52	152	296	5,335
Ratio per cent. of vaccinations registered to births registered during the year (after allowing for deaths of infants under two years).....	42·8	2·9	5·9	10·4	44·5	39·4	39·4	7·7	15·5

Table L.—(ii) Revaccination of Twelve-year-old European Children in Natal. Year ended 30th June, 1927.

Particulars.	Durban.	Pietermaritzburg.	Remainder of Province.	Total.
Registration of twelve-year-old European children.....	1,358	604	860	2,822
Successfully vaccinated.....	770	360	589	1,719
Insusceptible to vaccination.....	48	69	41	158
Vaccination postponed owing to illness.....	5	3	14	22
Previously had smallpox.....	—	—	—	—
Ratio percentage of vaccinations to twelve-year-old registrations.....	60·2	71·0	73·2	66·5

Table L.—(iii) Public Vaccinations during the Year ended 30th June, 1927.

Province.	Number of Centres at which Public Vaccinations were held.		Number of Visits of Public Vaccinators to Centres.		Numbers Vaccinated.				
					Europeans.		Non-Europeans.		Total.
	Urban.	Rural.	Urban.	Rural.	Primary.	Revaccination.	Primary.	Revaccination.	
Cape.....	180	1,720	764	1,739	10,897	1,249	144,698	54,829	211,673
Natal.....	46	386	178	428	2,859	8,185	65,232	75,440	151,716
Transvaal...	96	684	883	700	12,062	3,288	70,769	89,980	176,099
Orange Free State.....	50	235	156	238	3,532	569	10,311	2,199	16,611
Union...	372	3,025	1,981	3,105	29,350	13,291	291,010	222,448	556,099

14. *Tuberculosis*: (1) *General.*—The notifications of this disease during the year will be found in Table F. As pointed out in previous reports, the great majority of the coloured and native cases are never seen by a medical practitioner and so escape notification.

The disease is seriously prevalent in the large coastal centres, in some inland districts which were formerly favourite resorts of cases from oversea, and amongst the natives in several districts of the Transkei. The great need for further investigation and research has been emphasized in previous reports, and it is gratifying to be able to state that the comprehensive scheme of investigation into tuberculosis and its causes, mode of spread, and methods of prevention, referred to in last year's report, has been approved and a sum of £18,000, spread over a period of three years, has been made available for the purpose (£2,000 each per annum by the Union Health Department, the Chamber of Mines, and the Deferred Pay Fund Board of the Native Affairs Department), the control and conduct of the investigation to vest in the South African Institute for Medical Research, acting in consultation with a Tuberculosis Research Committee comprising representatives of all concerned. The services of Professor Lyle Cummins, holder of the Chair of Tuberculosis in the Welsh National School of Medicine, Cardiff, and a well-known authority on tuberculosis, have been secured as leader of the research. Dr. Cummins will be assisted by Dr. Allan, formerly Medical Superintendent of the Nelspoort Sanatorium, who has been seconded to the Institute for the purpose.

During the year under review three pamphlets dealing with tuberculosis were prepared and published by the Department, and circulated to each local authority and each magistrate in the Union, namely:—

(*a*) Tuberculosis: Summary of Causes and Preventive Measures, No. 352 (Health).

(*b*) How to Prevent Consumption, No. 284 (Health).

(*c*) Directions for Consumptive Patients, No. 285 (Health).

Even under the most favourable conditions hospitalization of patients is a costly measure, and one of the objects of these pamphlets is to suggest cheaper, and in some cases more practical, measures for dealing with cases so as to prevent the spread of the disease.

(2) *Nelspoort Sanatorium.*—The following table summarizes the work of the institution during the year:—

TABLE M.—ADMISSIONS, DISCHARGES, DEATHS, ETC., AT NELSPOORT SANATORIUM.

	Total.	European.			Non-European.		
		Male.	Female.	Total.	Male.	Female.	Total.
In sanatorium on 1st July, 1926.	80	26	27	53	15	12	27
Admitted during year.....	249	98	80	178	35	36	71
TOTAL.....	329	124	107	231	50	48	98
Died during year.....	14	6	5	11	2	1	3
Discharged during year.....	239	92	75	167	32	40	72
TOTAL.....	253	98	80	178	34	41	75
In sanatorium on 30th June, 1927	76	26	27	53	16	7	23

Of the 239 patients discharged, 85 were noted as "much improved," 107 as "improved," 45 as "stationary," and 3 as "worse."

The hospital provides 76 beds for European and 36 for coloured patients in equal ratio of the sexes in each case. Two solarium pavilions were completed during the year, each to accommodate 10 Europeans. The admissions for the year comprised 98 European males, 80 European females, 35 coloured males, and 36 coloured females. Of these, 198 were free, half being paid by the local authority and half from the Department's vote, 20 were part-paying or contributing, and 31 were full-paying patients.

The average stay of patients in the Institution was:—Europeans, 99 days; coloured, 123 days.

The general lines of modern sanatorium treatment have been followed. Artificial pneumothorax treatment was used with good results in nine cases first done in the sanatorium, and in one case sent in for continuation of the treatment. A further case was that of a patient received in a precarious condition for continuation of the treatment who died suddenly from hæmorrhage, apparently unconnected with the artificial pneumothorax. Sun treatment is given to a certain extent, and will be more extensively employed now that the new solariums are ready. A great difficulty all along has been that many local authorities are not sufficiently careful in the selection of cases. The patients admitted during the year were in the following stages of the disease:—

Race.	*Stage I.*	*Stage II.*	*Stage III.*
White	30·9 per cent.	36 per cent.	33·1 per cent.
Coloured...	27 ,,	38 ,,	35 ,,

Local authorities have again been reminded by circular that the utility of the sanatorium is being prejudiced by patients being sent there who are in an advanced and incurable stage of the disease, or who have serious and incurable complications, such patients occupying (sometimes for long periods) beds which should be available for curable or at least arrestable or improvable cases.

The sanatorium is intended for two classes of cases, namely:—

(*a*) Early cases which offer a reasonable hope of arrest or cure.

(*b*) Cases where there is reason to believe that the patient can be restored to working capacity.

The question of whether cases of tuberculosis of the bones, joints, glands or abdomen should be admitted to the sanatorium has been raised. The Department was urged to provide accommodation for such cases, but pointed out that it was only concerned with tuberculosis in so far as it is a public health matter, that under the Public Health Act, 1919, it is only entitled to incur expenditure on tuberculosis "in a communicable form," that if other cases were admitted special surgical staff and equipment would be necessary, and that cases of this type could be more conveniently and efficiently treated in general hospitals in or near large centres. The matter was submitted to the Council of Public Health, which resolved that, under

the present system of hospital administration in the Union, the provision of accommodation and treatment for cases of non-communicable tuberculosis should not be a responsibility of the Union Health Department.

By arrangement between the Department and the Capetown Municipality, one of the municipal health visitors was sent to the Sanatorium for a period of two months' training and experience. It is hoped that other local authorities will follow this example.

When the institution was opened the charges per patient per day were fixed as follows:—(*a*) Non-paying patients: White 10s., coloured 7s. 6d., native 5s., half of these rates being paid by Government, the remaining half by the local authority sending in the patient. (*b*) Full-paying patients: 12s. 6d. These figures were subject to revision after experience as to the cost of running the Sanatorium. The matter was fully discussed at a meeting of the Sanatorium Advisory Committee held at Nelspoort on 19th June, 1926, when it was decided—in view of the average daily cost of patients in the Institution and the fact that patients of all races receive identical treatment in all respects—to make a flat-rate charge of 10s. 6d. per patient per day for all patients, irrespective of race, sent in by local authorities, and subject to one-half refund by the Department, the charge of 12s. 6d. per diem for full-paying patients to remain. The new rates came into operation on 1st August, 1926.

(3) *Tuberculous Immigrants.*—During the last session of Parliament the "Immigration and Indian Relief (Further Provision) Act, No. 37 of 1927," was passed, Section 8 (4) of which deals with tuberculous immigrants. The position had arisen that tuberculous immigrants were arriving in the Union in considerable numbers, signing declarations under the Immigration Act that they were free from tuberculosis and being allowed to land. Within a few months a proportion of these applied for admission to the Nelspoort Sanatorium or otherwise sought relief at the public expense. The local authority as a rule refused to accept any liability in respect of such cases on the grounds that the patient was a recent arrival and not domiciled within its area. Sub-section (4) of Section 8 of Act No. 37 of 1927 was included in the Bill referred to above by the Department of the Interior at the pressing request of this Department. Its object is to prevent, as far as reasonably practicable, the immigration of persons suffering from tuberculosis who have not obtained special permits issued in accordance with the regulations made under the immigration laws. Under it responsibility for repatriation and for all costs entailed in dealing with tuberculous immigrants who have landed in contravention of the law in this respect will devolve on the master of the vessel or the shipping company for a period not exceeding six months from date of landing. It is anticipated that shipping companies will in their own interests take special precautions to guard against the conveyance to the Union of tuberculous immigrants by requiring them to submit to an effective medical examination either before embarkation or during the voyage. The port health officers have been instructed to act in close co-operation with the immigration officers at the ports and keep a specially sharp lookout for cases of tuberculosis, and call the attention of the immigration officers to any immigrant regarding whom there are grounds for suspicion. Such persons will

not be allowed to land unless or until the port health officer is satisfied, after medical examination, that they are not " suffering from tuberculosis " within the meaning of the section, that is, affected with the disease in a clinically recognisable form apart from reaction to the tuberculin test.

(4) *Viability of Tubercle Bacilli in Roll Tobacco.*—This question was raised during the year in connection with the inspection of tobacco factories in the Oudtshoorn District. The South African Institute for Medical Research kindly undertook to investigate the matter, and subsequently transmitted a useful report thereon by Dr. J. H. Harvey Pirie. Dr. Pirie's experiments showed that the bacilli dried off fairly quickly in roll tobacco, that only a few survived for seven days, and that after a fortnight all had died or at least completely lost virulence. He considers that this result was mainly or entirely due to drying or desiccation, and that organisms in the interior of a tobacco roll would not dry so quickly as in the experiments, and that any contained bacilli might consequently live a little longer.

15. *Typhus Fever.*—The following table shows the cases and deaths reported during the year:—

TABLE N.—TYPHUS FEVER: CASES AND DEATHS REPORTED DURING THE YEAR ENDED 30TH JUNE, 1927.

Province.	Number of Districts Affected.	Europeans.		Non-Europeans.		Total.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cape	45	13	1	625	113	638	114
Natal	13	21	1	51	5	72	6
Orange Free State	9	4	—	164	14	168	14
Transvaal	5	1	—	16	2	17	2
UNION	72	39	2	856	134	895	136

The table shows a reduction in the number of cases and deaths reported compared with last year, but there is reason to believe that many cases, especially in the native territories, are not reported. It seems clear, however, that in most of the native districts where the disease was a serious scourge and the cause of many deaths a few years ago it is now much less prevalent, much milder, and with a comparatively small case mortality rate.

16. *Venereal Diseases.*—The following table summarizes the work in connection with venereal diseases done by district surgeons, local authorities, and institutions during the year:—

TABLE O.—VENEREAL DISEASES: CASES TREATED AND ATTENDANCES. YEAR ENDED 30TH JUNE, 1927.

Locality.	In Hospital.						Outdoor Attendances.						Grand Total.
	Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.		Syphilis.		Gonorrhoea and Other Venereal Diseases.		Total.		
	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.	European.	Non-European.	
(1) *By District Surgeons*													
Cape	5	542	3	43	8	585	171	6,255	103	391	274*	6,646*	7,513
Natal	2	48	1	21	3	69	41	983	54	194	95*	1,177*	1,344
Transvaal	13	642	3	24	16	666	188	4,529	109	179	297*	4,708*	5,687
Orange Free State	6	5	2	—	8	5	193	2,852	104	267	297*	3,119*	3,429
(2) *At Institutions*													
Barberton	—	172	—	6	—	178	—	—	—	—	—	—	178
Bloemfontein	14	250	14	46	28	296	16	16	10	19	26	35	385
Bochem	—	1,168	—	11	—	1,179	—	10,220	—	—	—	10,220	11,399
Cape Town	3	143	7	75	10	218	4,546	5,562	6,151	4,471	10,697	10,033	20,958
Colesberg	—	12	—	—	—	12	—	—	—	—	—	—	12
Cradock	—	66	—	—	—	66	3	11	—	—	3	11	80
Durban	66	426	31	39	97	465	2,495	2,357	540	547	3,035	2,904	6,501
East London	—	—	—	—	—	—	318	523	368	195	686	718	1,404
Elim	49	621	—	2	49	623	293	—	—	—	293	—	965
Johannesburg	—	—	—	—	—	—	3,558	—	2,879	—	6,437	—	6,437
Kimberley	11	144	3	33	14	177	27	1,161	—	19	27	1,180	1,398
King William's Town	2	87	1	6	3	93	—	—	14	2	14	2	112
Kuruman and Olifants Hoek	—	20	—	—	—	20	26	549	—	—	26	549	595
Mpahlele (Pietersburg District)	—	25	—	—	—	25	—	454	—	—	—	454	479
Oudtshoorn	—	—	—	—	—	—	26	547	—	—	26	547	573
Pietermaritzburg	—	77	—	—	—	77	74	585	69	231	143	816	1,036
Port Elizabeth	—	1	4	1	4	2	90	346	245	303	335	649	990
Port St. Johns	—	—	—	—	—	—	—	80	—	13	—	93	93
Pretoria	—	—	—	—	—	—	642	3,379	115	91	757	3,470	4,227
Rietfontein	108	2,180	135	739	243	2,919	2,954	3,250	—	—	2,954	3,250	9,366
Secucuniland (Jane Furse Memorial)	—	170	—	—	—	170	—	8,510	1	4	1	8,514	8,685
Stellenbosch	—	21	—	—	—	21	33	245	—	4	33	249	303
Victoria West	—	1	—	—	—	1	—	10	—	—	—	10	11
Vryburg	—	74	—	—	—	74	—	986	—	—	—	986	1,060
TOTAL	279	6,895	204	1,046	483	7,941	15,694	53,410	10,762	6,930	26,456	60,340	95,220

* Individual patients, each of whom attends on an average three times.

Free issues of anti-syphilitic drugs to the value of £6,722 were made by the Department during the year, an increase of nearly £1,000 over the previous year.

The arrangements referred to in last year's report made with the Municipalities of Johannesburg and Pretoria—under which these local authorities pay at an agreed rate (Europeans 8s. 6d., natives 3s., per day each, plus rail transport) for cases sent in by them to the Rietfontein Hospital, the local authority subsequently obtaining a two-thirds refund under Section 66 of the Public Health Act—has been extended, with effect from 1st August, 1926, to include the following Reef local authorities:—Boksburg, Germiston, Krugersdorp, Brakpan, Benoni, Springs, Roodepoort-Maraisburg, Randfontein.

At one time all mine natives suffering from venereal diseases were admitted to the Rietfontein Hospital free of charge, but now the mines either provide their own hospital accommodation or pay the Department on a cost-price basis (3s. per day) for all their natives treated at Rietfontein.

The question of the supply of anti-venereal drugs to general hospitals was considered by the Council of Public Health, which agreed that under the present system of hospital administration in the Union it was not the duty of the Government to supply such drugs to general hospitals free of charge.

For some time past the branches of the Social Hygiene Council at Capetown and Johannesburg have been subsidized by the Government to the extent of £50 each per annum, but it is a question whether value is being given, as the work done by these bodies is somewhat spasmodic and a large proportion of their total income is expended on secretarial work and office expenses. It would probably be preferable for the Department to itself spend the money in propaganda and educative work, or alternatively give an increased grant to a Union body with a whole-time lecturer and organizer.

One of the great difficulties with the natives is that they will not come forward for treatment until they are disabled or disfigured, and as a rule they will not remain under treatment until completely cured.

The Rietfontein Hospital has been practically rebuilt during the past three years; the last instalment of the scheme will shortly be completed. A large and up-to-date isolation block for the treatment of cases of formidable epidemic and other infectious diseases has also been provided, and will serve the whole of the Rand area.

V.—GENERAL.

1. *Sanitation, Refuse Disposal, etc.*—In many local authority areas there continues to be an excessive prevalence of typhoid fever and other preventable intestinal diseases indicating insanitary conditions and inefficient sanitary arrangements and administration. Excessive prevalence of flies, improperly constructed sanitary conveniences, unsatisfactory disposal of night-soil and refuse, unlidded and often broken refuse bins, all contribute to the rapid spread of the organisms responsible for these diseases.

Disposal or treatment of manure, night-soil, refuse and slops so as to prevent fly-breeding; construction of a standard type of pail-closets with fly-proof seats, where a water-carried sewage system is as

yet impossible, and strict enforcement of cleanliness of house-yards and other premises, are imperative if these diseases are to be controlled and limited.

Approved methods of dealing with these matters are set out in detail in the Department's pamphlet No. 335 (Health) entitled "House-flies: Their Life History, Destruction and Prevention, and their Influence on Sanitation and Health."

At the request of this Department a useful investigation into the efficacy of fly-killing sprays was carried out by Dr. Ingram and Mr. de Meillon of the South African Institute for Medical Research; copies of their report, which was published in the *Journal of the Medical Association of South Africa* of 23.7.27, have been distributed by the Department to local authorities throughout the Union. Their experiments showed that kerosene emulsions are cheap and useful for this purpose; that their efficacy is increased by the addition of small proportions of cresol, thymol, naphthalene, or certain essential oils, and that a saturated solution of pyrethrum in kerosene (a comparatively inexpensive compound) proved most effective and gave results equal to the best of the expensive patented preparations.

2. *Housing.*—On the grounds of economy, it was decided not to print the report of the Central Housing Board for the calendar year 1926, which was laid on the Tables of Parliament during last session and gives full details of the working of the Housing Act, No 35 of 1920, since its inception. The position up to 30th June, 1927, is summarized in the following table:—

TABLE P.—HOUSING ACT NO. 35 OF 1920: WORKING FROM PROMULGATION (16TH AUGUST, 1920) TO 30TH JUNE, 1927.

Province.	Allotments Sanctioned.	Loan Applications Approved.			Loan Issues.	Number of Houses.					
		European.	Non-European.	Total.		Completed.	Under Construction.	Approved, but not yet commenced.	Total.	Total for European Occupation.	Total for Non-European Occupation.
	£	£	£	£	£						
Cape...	1,075,123	711,126	281,486	992,612	913,301	2,433	89	128	2,650	866*	1,784†
Natal..	497,535	436,054	45,066	481,120	428,363	412	21	10	443	380	63‡
Orange Free State..	402,258	365,816	12,725	378,541	365,389	673	341	27	1,041	371	670§
Transvaal...	822,275	616,817	164,143	780,960	726,588	1,654	15	308	1,977	724	1,253‖
UNION.	2,797,191	2,129,813	503,420	2,633,233	2,433,641	5,172	466	473	6,111	2,341	3,770

* Includes a hostel to accommodate 86 persons.
† Includes 475 single rooms in blocks.
‡ Includes three barracks—two accommodating 506 single natives each, and one accommodating 515 single natives.
§ Includes 24 single rooms in blocks, the balance of 646 representing the approximate number of dwellings to be built out of a total loan of £11,925 made to three Local Authorities for use exclusively in purchasing materials to be advanced to coloured persons and natives building their own homes.
‖ Includes 100 single rooms in blocks, 3 hostels and 3 compounds, accommodating 150, 120, and 80 single natives each.

From the commencement of the Act up to the 31st March, 1927, the repayments of capital received by Provincial Administrations and re-allotted totalled £189,616. Adding to the latter figure the sum of £66,950 estimated to be received during the current financial year

(1927-28) makes a total of £256,566 in respect of repaid capital available for re-allotment. The Government's total commitment to date stands at £2,581,000, to which must be added the repaid capital before mentioned of £256,566—thus making a total of £2,837,566, representing the sum available for allocation up to the end of the current financial year.

Out of the Government's total commitment of £2,581,000 the issues up to the 31st March, 1927, totalled £2,216,251, leaving a final instalment of £364,749, which is provided on the current year's Loan Estimates. In respect of the repaid capital totalling £189,616 received up to the 31st March, 1927, an amount of £176,890 had been re-issued as at that date, the unissued balance of £12,726 being in the hands of the Transvaal Provincial Administration.

Of the total sum of £2,837,566 available for allocation up to the end of the current financial year, a sum of £2,797,191 (as noted in Table P above) has been allotted to date, leaving an unallotted balance of £40,375. Practically the whole of this unallotted balance is out of moneys specifically provided for purely native housing, and is gradually being taken up by local authorities for the purpose of providing additional housing accommodation in locations, as a result of the gradual enforcement of the provisions of the Natives (Urban Areas) Act of 1923.

Apart from the unallotted balance of £40,375 mentioned in the preceding paragraph, the value of the loan applications still to come forward for examination and approval out of the allotments sanctioned to date, total £163,958. The bulk of this sum is ear-marked for carrying out contemplated schemes, and the local authorities concerned have been urged to expedite the transmission of the plans and detailed proposals for approval, in order that actual building operations may be commenced at the earliest possible date.

In September, 1920, when the Act came into operation, building costs were abnormally high, and with the knowledge and approval of the Minister it was decided to restrict financial assistance to houses costing not more than £2,500, exclusive of ground—no loan to be granted in excess of either £2,000 or 90 per cent. of the cost of house and ground. In July, 1921, owing to a fall in building costs, as also the curtailment of loan funds on account of the financial stringency, loans were limited to not exceeding either £1,500 or 90 per cent. of the cost of the house and ground—the limit in regard to cost of houses remaining unaltered. In July, 1923, for financial reasons, loans were limited to houses costing not more than £1,000, exclusive of ground, except in the case of certain areas where on account of higher building costs a slightly higher limit was fixed, namely, £1,250 in the case of the Reef municipalities, Bloemfontein and Pretoria, and £1,150 in the case of the Cape Peninsula, Port Elizabeth, East London, and Durban; the loans were limited to not exceeding 80 per cent. of the cost of the house and ground. The limits fixed in July, 1923, are at present in operation, except that as a result of special representations made, it was agreed in 1925 to increase the limit in respect of the cost of houses built at Pinelands Garden City from £1,150 to £1,250. exclusive of ground.

The value of the individual loan applications approved up to the 30th June, 1927, totalled £1,320,671, embracing the erection of 1,510 dwellings, which gives an average loan of £874 per dwelling.

When the Building Agreement made under the Industrial Conciliation Act of 1924 came into operation in September, 1925, the Labour Department was approached with a view to securing the exemption from the Agreement of location housing carried out by local authorities. The National Industrial Council of the Building Industry refused to give any general exemption, but indicated its willingness to deal with each application for exemption on its merits. As the Building Agreement remains in operation until February, 1928, the Labour Department intimated that it could do nothing further in the matter except that the proposal is being given consideration of introducing amending legislation giving the Minister of Labour power, after consultation with the Industrial Council concerned in any agreement, to grant exemption from the terms of such agreement. In a few small location housing schemes the necessary exemption has been granted by the Industrial Council, but in the case of any considerable scheme of native housing promoted by a local authority, the Industrial Council, despite the strongest representations from this Department and the Department of Native Affairs, has refused to grant any exemption—the view being taken that on any work of magnitude the efficient builder adhering to the conditions of the Building Agreement will be able to complete the work at a reasonable cost, and ensure a standard of quality which could not be obtained otherwise. The position, broadly, is that as a result of the operation of the Building Agreement, the cost of building has been increased by from 10 to 25 per cent., the increase being least in the Transvaal Province. Also, local authorities in whose areas the Building Agreement is in operation, desiring to comply with the requirements of the Natives (Urban Areas) Act of 1923, are compelled to carry out location housing schemes solely with civilized labour, at the rates laid down in the Building Agreement, unless the necessary exemption is obtained from the Industrial Council. This Department is of opinion that the existing position is definitely unfair to natives living in urban areas, and that the only equitable and workable arrangement is unreservedly to exempt location housing at all centres from the operation of the Agreement, and so encourage local authorities to carry out housing reform measures by making it possible to erect such dwellings at a cost which will permit of a rental being charged which is economic and at the same time within the paying capacity of the occupier.

Outstanding loan applications under the Housing Act for which no funds are available now amount to about £970,000, apart from applications made by some 25 local authorities who do not specify the amount desired, but are anxious to obtain an allotment of funds. In regard to the bulk of this amount, it is not stated whether the proposals involve schemes or individual loans, but it is believed that quite £500,000 is in respect of schemes.

This Department has again strongly urged the Government to provide a further £1,000,000 for financially assisting housing, to be spread over a period of four years, and that if deemed absolutely necessary, the rate of interest be increased from 5 per cent. to 5¼ per cent.. which should fully cover the cost to Government; further, that

priority be given to suitable schemes to be carried out by local authorities on mass production lines—for providing sanitary dwellings more particularly for members of the poorer classes of the community, many of whom at present live under deplorable conditions in slum areas.

At the same time it is not considered desirable to discontinue entirely loans in respect of individual dwellings. One of the points which was emphasised by the Housing Committee of 1919 was that in erecting houses the Government should aim at erecting a reasonably good class of house. There are many low-grade houses, and in 1919 the need was for a better class of house, and it was pointed out by the Committee that the construction and occupation of better-class houses would automatically release lower-grade accommodation. It is, moreover, an advantageous thing that a large percentage of the population should possess their own dwellings, and in that direction South Africa compares very favourably with other countries. There has been a notable increase of the percentage in recent years, due largely to the working of the Housing Act and the fact that no income tax is payable in respect of a house occupied by the owner. Most of the European dwellings built under schemes to date have been sold by the local authority to individuals at cost price and on easy repayment terms. In terms of Section 5 (*b*) of the Act, the conditions of sale are required to be approved by the Administrator, and local authorities are not allowed to make a profit on such sales.

3. *Town Planning.*—During the past year an " Ordinance to Regulate the Establishment of Townships and to Provide for the Approval of Town Planning Schemes " was passed by the Provincial Council of the Cape Province. Officers of this Department were associated with the drafting of the measure and gave evidence before the Select Committee to which it was referred. This very necessary and useful measure is long overdue and for many areas is too late, but its enforcement will prevent the establishment of new townships without due planning for future growth and development.

The Ordinance [No. 13 of 1927 (Cape)] provides that an owner of land who proposes to establish a township must apply for permission to the local authority, who forwards the application to the Administrator, who submits it to a Townships Board constituted under the Ordinance, for its consideration and recommendation. The owner of the land may be required to grant land for public purposes, e.g. sites for buildings for Government, education and local authority purposes, and land or money as an endowment for the future local authority. The applicant must supply the local authority with details as to proposed water supply, sanitary disposal sites, etc., and the general lay-out scheme of the township. The Board considers all aspects of the scheme and proposals, inspects the locality if deemed necessary, and recommends to the Administrator whether or not the application should be granted. Any local authority may submit to the Administrator a town planning scheme for any land under its jurisdiction. In the view of this Department it is regrettable that this provision was not made compulsory on all urban local authorities in respect of all undeveloped or partly developed parts of their areas. *Existing* lay-out schemes or sub-divisions of land may be revised by the local authority with approval of the Administrator. Compensation may be paid to persons prejudiced by any town planning scheme.

For several years past the Natal Provincial Administration has been considering the matter of town planning and preparing a draft Ordinance, but so far nothing definite has eventuated; some such measure is badly needed in Natal.

The existing Townships Ordinances of the Transvaal and Orange Free State might usefully be amended in several respects on the lines of the new Cape Ordinance.

4. *Child Welfare.*—Both local authorities and the public are showing increasing interest in this matter throughout the Union, and the number of workers employed has increased during the year.

During October, 1926, at Pretoria, the South African National Council for Child Welfare held its first Congress, which was opened by Her Royal Highness Princess Alice, President of the Council. At this Congress a number of interesting and important papers were read, addresses given and resolutions passed. On the same occasion H.R.H. Princess Alice launched an appeal for the institution of an annual "Children's Day" on which the welfare of the children of South Africa should be considered in every town and village throughout the Union. It was resolved to fix 1st November—or the nearest Saturday to 1st November—for the Children's Day.

Efforts were made during the year to federate or amalgamate the two bodies mainly concerned with child welfare in South Africa, viz., Die Federale Raad vir Moederkuns en Kindersorg and the South African National Council for Child Welfare, and a basis of federation and co-operation was provisionally agreed upon. This arrangement, if confirmed, will minimise the overlapping which has at times occurred in the past and co-ordinate the activities of the two bodies and their affiliated societies.

The Lady Buxton Home for Mothercraft Training at Claremont, Cape, continues to do excellent work in advising and helping local mothers and babies who need such help and in affording a special course of training, lasting from four to six months, in mothercraft and infant feeding to nurses already certificated in general or maternity nursing. If successful, the trainee receives an "Athlone" Mothercraft Certificate. "Athlone Nurses" find ready employment in municipal and other child welfare work, and it is gratifying to note that there is a growing demand for nurses so certificated. Hitherto the number of trainees has been small, but it is expected that as the existence and advantages of this course become more widely known, the numbers will grow steadily. The institution also has a course of training for "Nursery Nurses" who, on passing an examination laid down by the National Council, receive certificates as "Good Hope Nurses."

The grant-in-aid of £1,000 given by this Department to the South African National Council for Child Welfare in respect of this institution was continued during the year, and an initial grant of £100 was made to the Afrikaanse Moeders Bond Hospitaal, Pretoria.

The registrations of births and deaths and infantile mortality rates for European infants in each Province during the past year and the preceding ten years are shown in the following table:—

TABLE Q.—EUROPEAN INFANTS: BIRTHS AND DEATHS UNDER ONE YEAR REGISTERED AND INFANTILE MORTALITY RATE, I.E. DEATH-RATE PER 1,000 BIRTHS, 1916-1926.

Year.	Cape.			Natal.			Transvaal.			Orange Free State.			Union.		
	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.	Total European Births Registered.	Deaths of European Children under One Year.	Death-rate per 1,000 Births.
1916.....	17,333	1,512	87·23	2,773	177	63·83	16,010	1,467	91·63	5,080	389	76·57	41,196	3,545	86·05
1917.....	17,521	1,436	81·96	2,756	171	62·05	15,486	1,309	84·53	4,959	353	71·18	40,722	3,269	80·27
1918.....	17,775	1,496	84·16	2,924	176	60·19	15,977	1,383	86·56	4,906	357	72·77	41,582	3,412	82·05
1919.....	16,749	1,351	80·66	2,910	191	65·64	15,338	1,326	86·45	4,727	382	80·81	39,724	3,250	81·81
1920.....	18,425	1,654	89·77	3,256	235	72·17	16,768	1,576	93·99	4,996	448	89·67	43,445	3,913	90·07
1921.....	18,062	1,382	76·51	3,370	203	60·24	16,582	1,374	82·86	5,288	379	71·67	43,302	3,338	77·09
1922.....	18,248	1,294	70·91	3,294	180	54·64	16,370	1,292	78·92	4,920	357	72·56	42,832	3,123	72·91
1923.....	18,296	1,353	73·95	3,229	197	61·01	15,619	1,261	80·74	5,037	328	65·12	42,181	3,139	74·42
1924.....	18,730	1,296	69·19	3,410	273	80·06	15,287	1,171	76·60	4,919	382	77·66	42,346	3,122	73·73
1925.....	18,366	1,343	73·12	3,509	206	58·71	16,348	1,059	64·78	5,188	361	69·58	43,411	2,969	68·39
1926.....	18,675	1,196	64·04	3,588	189	52·68	16,304	1,186	72·74	5,309	273	51·42	43,876	2,844	64·82

5. *Opium and Habit-forming Drugs.*—In co-operation with the police and Commissioner of Customs and Excise, the enforcement of the regulations with regard to opium, dagga and other habit-forming drugs has been actively continued during the year. The following table shows the prosecutions and convictions:—

TABLE R.—SHOWING PROSECUTIONS AND CONVICTIONS UNDER LAWS RELATING TO HABIT-FORMING DRUGS DURING THE PERIOD 1ST JULY, 1926, TO 30TH JUNE, 1927.

Province.	European.		Native.		Asiatic.		Other Coloured.		Total.	
	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.	Prosecutions.	Convictions.
Cape.....	33	28	444	425	20	16	744	736	1,241	1,205
Natal.....	—	—	1,161	1,115	56	54	15	14	1,232	1,183
Transvaal.....	12	10	1,394	1,343	20	11	73	70	1,499	1,434
Orange Free State	7	6	378	367	—	—	50	46	435	419
UNION.....	52	44	3,377	3,250	96	81	882	866	4,407	4,241

Of the total of 4,407 prosecutions, 4,392 were in respect of dagga, and 15 of opium; 36 lb. 2 oz. 120 grs., also 7½ jars (weight not stated) of opium and large quantities of dagga were seized and confiscated.

The total quantities of these drugs authorised to be imported into the Union during the year ended 30th June, 1927, were: Opium, 714 lb. 11 ozs. 268 grs.; morphine, 84 lb. 13 ozs. 105 grs.; cocaine, 52 lb. 463 grs.; heroin, 1 lb. 13 ozs. 131 grs.; cannabis indica 18 lb. 6 ozs. 213 grs.

The following exports of habit-forming drugs from the Union were authorised during the year ended 30th June, 1927: Opium, 7 ozs. 465 grs.; morphine, 3 lb. 15 ozs. 191 grs.; cocaine, 9 ozs. 113 grs. Permits have also been issued for the export of 15,788 lb. of dagga to London.

A permit for the cultivation of dagga for export for medical purposes has been issued to a farmer in the Koster area, Rustenburg District, Transvaal, and a permit has been issued to import hemp seed and cultivate hemp for fibre purposes on the Hibberdene Estate, South Coast, Natal.

At the request of the Secretary-General of the League of Nations arrangements have been made with the Department of Customs and Excise to keep statistics of actual imports and exports of opium and other habit-forming drugs; it is hoped that these will be available for inclusion in next year's report.

6 *Slaughtering, Meat Inspection, etc.*—The regulations promulgated under Government Notice No. 2118 of 1924, as amended by Government Notice No. 656 of 1925, have worked quite smoothly except in regard to the disposal of "measly" meat. Strong representations were made against the requirement of either condemnation

or cold storage for twelve weeks of carcasses containing only a few "measles" and some modification was urged so as to reduce the loss to owners of infected animals.

The opinions of a large number of authorities in the Union were obtained and the matter was submitted to the Council of Public Health.

A sub-committee of this body, after consultation with the Director of Veterinary Research, submitted the following recommendations which were adopted by the Council, viz.:—

(1) That a further inquiry as to the viability of *Cysticercus bovis* in varying conditions be made, the inquiry to be carried out on lines agreed upon between the two Research Institutes. The inquiry should include the efficacy of brine treatment.

(2) That there is no objection to the Freibank system, i.e. the sale of infected meat by the local authority after thorough sterilization, as an alternative to cold storage as prescribed in the regulations. The Freibank system could probably be usefully run in conjunction with an insurance scheme. The committee favoured the encouragement of the Freibank system.

(3) That farmers in the affected districts be advised to inquire into the practibility of establishing an insurance scheme on lines similar to existing indemnity schemes.

The question as to the viability of the parasite in meat in cold storage and in "brine" is being further investigated by the South African Institute for Medical Research in consultation with the Director of Veterinary Research, but unless or until it is conclusively shown that the period required to devitalize the parasite is less than that indicated by the investigations already carried out at the South African Institute for Medical Research the Department cannot recommend modification of the regulations in that direction.

Local authorities have been circularised on the lines indicated in the recommendations, and it has been suggested that those having public abattoirs and the means for the sterilization of meat should give facilities for the sterilization and sale of "measly" meat under their sole control and supervision, suitable safeguards being taken to obviate any danger to public health. This system is in operation in Germany and other countries; it is thought that in some of the larger centres the cooked and sterilized meat, if sold at a cheap rate by the local authority, would be a boon to many of the poorer classes of the population.

All local authorities have been circularised and requested to furnish particulars of the working of the meat inspection regulations and the animals, carcasses and meat dealt with during the year. Four hundred and forty such returns have been received of which 255 were "nil." The following table summarizes the particulars furnished by the remaining 185 local authorities:—

Disease.	BOVINES.						SWINE.						SHEEP.						GOATS.					
	Total Number Slaughtered.	Number Infected.		Condemned.			Total Number Slaughtered.	Number Infected.		Condemned.			Total Number Slaughtered.	Number Infected.		Condemned.			Total Number Slaughtered.	Number Infected.		Condemned.		
		Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.		Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.		Carcasses.	Live Animals.	Whole Carcasses.	Portions of Carcasses: Approx. Weight in Pounds.	Live Animals.		Carcasses.	Live Animals.	Whose Carcasses.	Portions of Carcasses: Approx. Weight in Pound	Live Animals.
Actinomycosis	—	472	160	18	17,606	6	—	41	8	19	251	—	—	80	—	80	—	20	—	12	—	12	—	2
Anthrax	—	4	—	4	—	—	—	2	—	2	—	—	—	3	—	3	—	—	—	—	—	—	—	—
Blackleg (quarter-evil)	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bladderworm ("measles")	—	4,138	275	2,606	281,635	—	—	14,089	224	9,513	62,063	10	—	8	—	2	—	—	—	—	—	—	—	—
Blue-tongue	—	—	—	—	—	—	—	—	—	—	—	—	—	41	258	16	620	—	—	—	—	—	—	—
East Coast fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas (acute swine)	—	—	—	—	—	—	—	8	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Foot-and-mouth disease	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lamziekte	—	—	—	—	—	—	—	—	—	—	—	—	—	4	1	2	92	—	—	—	—	—	—	—
Lymphadenitis	—	4	—	—	90	—	—	4	—	4	—	—	—	1,733	1	218	5,970	—	—	7	—	4	1,610	—
Malignant tumours or new growths	—	19	—	2	1,865	—	—	—	—	—	100	—	—	28	—	22	484	—	—	6	—	6	—	—
Mammitis	—	6	—	2	600	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—
Metritis	—	2	—	—	—	—	—	1	—	1	10	—	—	—	—	—	—	—	—	—	—	—	—	—
Pericarditis	—	423	3	7	2,286	—	—	—	4	—	20	—	—	—	—	—	99	—	—	—	—	—	—	—
Pneumonia	—	5	—	5	516	—	—	51	4	48	345	—	—	248	—	46	650	—	—	7	—	7	50	—
Pyaemia, including joint-ill or umbilical pyaemia	—	23	7	19	3,005	—	—	16	—	11	—	—	—	10	—	10	365	—	—	—	—	—	60	—
Redwater	—	351	—	350	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	35	—	1	—	—
Rickets	—	—	—	—	—	—	—	4	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sarcocysts	—	75	4	61	5,715	—	—	27	20	10	278	—	—	5	—	1	1,045	—	—	—	—	—	80	—
Septicaemia	—	40	1	40	1,703	—	—	8	1	5	8	—	—	16	—	8	297	—	—	—	—	—	—	—
Swine Fever	—	—	—	—	—	—	—	10	—	5	310	—	—	—	—	—	—	—	—	—	—	—	—	—
Tetanus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trichinosis	—	5	—	1	1,115	—	—	14	—	13	1,050	—	—	75	—	75	—	—	—	—	—	—	—	—
Tuberculosis	—	753	23	753	28,733	—	—	1,783	13	612	16,499	—	—	23	—	23	—	—	—	3	—	2	—	—
Tumours	—	35	45	3	3,563	—	—	15	5	7	482	—	—	37	2	19	1,099	—	—	1	—	—	101	—
Anaemia	—	2	—	2	—	—	—	—	—	—	—	—	—	3	—	2	61	—	—	—	—	—	—	—
Bruising, decomposition, dropsy, emaciation, fever, immaturity, odour (urinous), jaundice, etc.	—	9,637	1,567	2,797	562,891	—	—	494	419	448	14,279	—	—	108,253	685	4,435	380,095	2	—	228	1	175	3,034	—
TOTAL	461,989	15,994	2,085	6,672	911,323	6	180,649	16,567	699	10,706	95,695	10	1,750,170	110,569	947	4,964	390,877	22	68,953	299	1	207	4,935	2

7. *Fruit Trade:* (a) *Sulphur Dioxide in Dried Fruit.*—In 1925 a question was raised by the health authorities in England as to the allowable quantity of SO_2 in dried fruit, with a view to reducing this to 1 per cent. in any type of dried fruit permitted to enter Great Britain. Subsequently the suggested limit was raised to 2 per cent. for dried fruit such as apricots, peaches, nectarines, apples, etc., but lowered for raisins to 700 parts per million or 0·075 per cent. This figure is considered reasonable and attainable for ordinary raisins, but is impossible to secure in high-grade light sultanas. Such raisins are mainly used for cake-making and similar purposes, in which they are consumed only in small quantities. The matter has received the careful consideration of the Departments of Agriculture and Public Health, and the conclusion come to that the SO_2 content in sultanas could with safety be raised to that allowed for dried apricots and other fruits. Representations on the subject are being made to the British Government.

(b) *Arsenic in Pears and Apples.*—During the year an effective system of inspection and, where necessary, analysis of consignments of pears and apples intended for export was carried out by the Department of Agriculture, acting in consultation and co-operation with this Department and the Fruit Exchange, so as to prevent the export of fruit containing traces of arsenic derived from the use of arsenical sprays. Inspections and analyses of apples and pears intended for consumption in the Union were made by this Department under the food adulteration laws. A few samples found to contain definite traces of arsenic were suitably dealt with. No case of illness following the eating of pears or apples and suspected to be due to the presence of arsenic therein was reported, but it is nevertheless desirable before eating such fruit to peel it and cut out the calyx scar or " eye " and the place of insertion of the stalk.

8. *Medical, Dental, Pharmacy, and Midwifery Matters.*—The Medical, Dental, and Pharmacy Bill was considered by Parliament during the 1927 Session, and was dealt with in Committee by the House of Assembly up to and including clause 75; the Minister proposes to proceed with the measure during the coming Session. It is to be hoped that the measure will be passed and come into effect at an early date, as the administration of the existing medical, dental, and pharmacy laws of the four Provinces is a complicated and difficult matter.

At the end of June the medical students in the Universities of Capetown and the Witwatersrand numbered 468, the dental students 18, and students studying for the diploma in public health 5. The following table shows the registration under the medical, dental, and pharmacy laws during the year ended 30th June, 1927, and the total number of registrations as on that date:—

TABLE T.—REGISTRATIONS UNDER THE MEDICAL, DENTAL, AND PHARMACY LAWS DURING THE PERIOD 1ST JULY, 1926, TO 30TH JUNE, 1927.

Province.	Medical Practitioners.	Dentists.	Chemists and Druggists.	Midwives.	Trained Nurses.	Mental Nurses.	Total.
Cape	73	28	21	107	115	36	380
Natal	29	6	8	31	41	—	115
Transvaal	74	23	33	60	*115	—	305
Orange Free State	26	5	8	9	3	—	51
UNION	202	62	70	207	274	36	851
Total on register on 30th June, 1927	3,092	853	1,490	3,196	4,148	362	13,141

* Including 4 male nurses.

It should be noted that, as the same person may be registered in more than one Province, the foregoing figures for the Union and the total on the register include many persons enumerated more than once. It is estimated that the total number of individual medical practitioners is about 1,900 and of dentists about 600. The first South African dental degrees (University of the Witwatersrand) were conferred in March, 1926, there being two recipients.

9. *Sanitary Inspectors, Health Visitors, etc.*—The joint scheme of training, examination, and certification by the Union Government (Departments of Public Health and Education) and the Royal Sanitary Institute, described in last annual report, was brought into operation during the year. It has worked well and fruitfully; a total of thirty-three sanitary inspectors, three meat and food inspectors, and twelve health visitors gained the joint certificate during the year.

10. *Nursing and Maternity Homes.*—The system of registration and inspection described in previous reports has been continued. The following table summarizes the work done during the year:—

TABLE U.—NURSING AND MATERNITY HOMES: INSPECTIONS DURING THE YEAR ENDED 30TH JUNE, 1927.

Place.	Total Number.	Number Inspected.	
		By Medical Officer of Local Authority.	By Government Health Officer.
Cape Province—			
Cape Town	23	22	—
East London	9	9	—
Port Elizabeth	10	10	—
Elsewhere	79	—	20
Natal Province—			
Durban	19	—	—
Pietermaritzburg	9	9	—
Elsewhere	23	—	—
Transvaal Province—			
Witwatersrand	44	—	4
Pretoria	4	4	—
Elsewhere	37	—	3
Orange Free State Province—			
Bloemfontein	5	—	5
Elsewhere	19	—	2
UNION	281	54	34

The statutory powers under which the regulations are made remain unchanged. It is hoped, however, that the amending Public Health Bill, which contains clauses empowering the Minister to refuse to register, or to suspend the registration of, any home which is unsatisfactory as regards construction, equipment, staff, or otherwise, and to prohibit any person carrying on a nursing or maternity home unless registered, will be passed during next session of Parliament. Provisions empowering local authorities to supervise midwives and, with the concurrence of the Minister, to prohibit from practising as a midwife any person whose so practising would be prejudicial or dangerous to the public health, are included in the same Bill.

11. *General Hospitals.*—The Hospital Inquiry Committee of 1925 reported that the hospital position in the Union was very unsatisfactory. Throughout the Union it found urban hospitals, with very few exceptions, overcrowded, inadequate, ill-built, and ill-equipped or out of date. It found the rural districts with utterly inadequate hospital accommodation and practically without nursing services, while the health and sanitary administration of many of the smaller local, and even some of the larger municipalities and local authorities, was very inadequate and inefficient. It found an entire absence of co-ordination in the agencies for the prevention and cure of disease, and came to the conclusion that the matter could only be put on a permanent and satisfactory basis by transferring hospital and nursing matters from the Provincial Administrations and vesting them and the entire control of all health and kindred matters in the Union Government.

As stated in last annual report, the Government decided, under all the circumstances, not to act on the recommendations of the committee, and at a conference between the Minister of Public Health and Administrators of the four Provinces held in Capetown in January, 1926, the Minister undertook, at the request of the Administrators, that the Department would organize and carry out a hospital survey of the Union for the information and guidance of Provincial Administrations and all concerned. A Hospital Survey Committee was appointed accordingly, under Government Notice No. 242 of 11th February, 1927, its terms of reference being to inquire into and report upon the existing public hospital and district nursing accommodation and facilities in the Union; their adequacy and suitability or otherwise; their linking up and co-ordination by the utilization of modern facilities for transporting the sick and by other means—with each other and with institutions for dealing with cases of infectious or communicable diseases; their future organization, control, and development under the Provincial Administrations; and, if deemed advisable by the committee and with due regard to the existing hospital position and arrangements, to submit recommendations as to the division of each Province into hospital areas and the organization and administration (including financial arrangements) of the hospital areas so defined—each such area to have at least one adequately equipped central hospital linked up with such subsidiary institutions (cottage hospitals, public dispensaries or clinics, stations for district nurses, etc.) as the committee might consider necessary for providing an efficient and economical hospital and sick-nursing service for both urban and rural areas in the Union.

The following is a summary of the findings of the committee:—

(1) There can be no solution of the problem of the co-ordination between preventive and curative agencies until they are all under one control. To quote the report:—"Your committee does not consider that the present unworkable tangle of conflicting interests and jurisdiction can be satisfactorily adjusted unless and until one authority is made responsible for dealing with all diseases."

(2) In other countries a ratio of one hospital bed for every 200 inhabitants is the ideal to be aimed at, and in practice a community is not ill-served if it has one hospital bed for every 250 inhabitants.

(3) The existing ratio of hospital beds for community use is as follows:—

Province.	Beds.		
	European.	Non-European.	Total.
Cape of Good Hope	409	2,308	1,096
Transvaal	294	2,831	808
Natal	160	1,469	793
Orange Free State	846	7,603	2,273
ALL PROVINCES	334	2,231	963

(4) It is recommended that the several Provinces be divided into twelve central hospital areas as shown hereunder, and that the following minimum ratios of bed accommodation to population be aimed at:—

Province.	Name of Hospital Central Area.	Ratio of Bed Accommodation Proposed for.	
		Europeans.	Non-Europeans.
Cape of Good Hope	Cape Western	275	375
	Midlands	300	700
	Eastern	250	
	North-Western	300	
	Native Territories	250	
	East Griqualand	250	
Transvaal	Johannesburg	250	700
	Pretoria		
Natal	Durban	200	700
	Pietermaritzburg		
Orange Free State	Bloemfontein	350	700
	Kroonstad		

(5) The provision for sick natives, particularly for those not employed on the mines, is shown to be gravely insufficient, while for natives living in the reserves and locations it is practically non-existent.

(6) To meet the deplorable and scandalous lack of hospital beds, the committee consider that as a beginning a building programme providing for 2,852 additional beds should be undertaken at once. This will still leave a very considerable shortage of hospital beds in the Union.

(7) A classification of existing hospitals has been made so as to link together the hospitals in each central hospital area with a view to getting the most effective work out of each hospital. The grades suggested are:—

(*a*) *General Hospital* for acute medical and surgical treatment, fully staffed and equipped in all departments for general and special treatment.

(*b*) *First Grade Hospital.*—A similar hospital on a smaller scale, but not equipped for all forms of special treatment.

(*c*) *Second Grade Hospital.*—A similar institution to the last-named, but on a still smaller scale to deal with ordinary medical or surgical cases with the intention that cases of special difficulty should be sent on to a larger institution.

(*d*) *Clearing Hospital.*—A small institution staffed and equipped for furnishing first-aid and dealing with simple cases, major surgical and serious medical cases being, where possible, transferred to a larger institution. Clearing hospitals are further classified into—first-class, with two or more trained nurses; second class, with one trained nurse; and third class, without a trained nurse.

(8) Attention is invited by the committee to the excellent system of bringing European medicine to the native races in French West Africa by means of an auxiliary native service, and it thinks that a similar system should be considered for South Africa. The committee expressed the opinion that the needs of natives would not be met in South Africa by providing for an influx of natives into the medical profession, and it preferred the French system, where natives trained in a medical school, under European supervision, are given posts as auxiliary medical assistants in the bush and are able to carry out minor medical, surgical, and public health work as far as possible under European supervision *only while holding such posts*. The committee was not in favour of granting "inferior qualifications," but of course under the French system no diplomas whatever are granted. The men work under European supervision and are posted to areas where they cannot interfere with the practices of fully qualified medical men.

(9) But before everything else, the provision of a large auxiliary service of native nurses and midwives is urged, and the cessation of the system of officially licensing in Natal and Zululand native "isinyangas" or herbalists, who as a rule are, or are little better than, witch-doctors. Regret is expressed by the committee that the policy initiated by Sir George Grey in British Kaffraria in 1858—of systematically building hospitals and establishing clinics and nursing centres in native districts, using the medical officers and nurses as a civilizing agency and to break down the power and influence of the witch-doctor—has not been continued and developed.

(10) The closure of the Indian Immigration Bureau hospitals in Natal is recommended on the grounds that they are now mainly used for natives, and that they are dilapidated and unsatisfactory institutions.

(11) The estimated capital expenditure required within the next four or five years to carry out the recommendations of the committee is £2,160,000.

(12) The committee is doubtful whether some of the Provincial Administrations are able without extra financial assistance from the Government to do their duty by the hospitals, even if willing to do so.

(13) The adoption of its proposals will not, in the opinion of the committee, make existing confusion in public health and hospital administration worse confounded, but it will greatly simplify the problem of the Government when it ultimately takes over the control, which the committee, in view of all the circumstances and the trend of public opinion, believes to be inevitable.

(14) To enable injured and sick people to be readily transported by rail, the committee recommends that the Railway Department take over from Defence the Brechot-Desprez-Ameline apparatus, which would enable emergency ambulance trains to be mobilized at short notice.

It is earnestly to be hoped that the Government will in the near future reconsider its decision to leave hospitals under the administration of the Provinces, but if not, the constructive suggestions of the Hospital Survey Committee should be carried into effect without avoidable delay, as the committee's report discloses a state of affairs which, in the interests of the health and general welfare of the people of the Union, calls urgently for reform.

The committee's report was completed and signed on 12th April, 1927—a very expeditious piece of work—and was subsequently printed (U.G.–'25–'27), presented to Parliament, and copies distributed to all concerned. The Provincial Administrations and other bodies involved have been asked to submit their views and remarks thereon; their replies are being abstracted and scheduled as received, and the papers when complete will be submitted to the Government for consideration and decision.

At his conference with Administrators in January, 1926, the Minister also, at their request, undertook that the Union Health Department would inquire into and advise Provincial Administrations regarding hospital construction and extension schemes, and would also periodically inspect and report on hospitals, a medical officer of suitable experience and qualifications being added to the Department's staff mainly and primarily for these purposes. Considerable difficulty has been experienced in suitably filling this post, but a decision has now been reached, and it is hoped to arrange that the officer appointed will assume duty on 1st December, 1927. Meanwhile, and as far as practicable, the work is being done by the other medical officers of the Department.

12. *Vaccines, Sera. Pathogenic Cultures, etc.*—Eleven permits under the regulations (G.N. No. 2306 of 1920) were issued during the year, all being to bacteriologists conducting laboratories.

It was decided not to renew permits for the importation of calf vaccine lymph and applicants were advised that this decision would operate as from 1st January, 1927. In administering the regulations the Department acts in consultation with the Director of Veterinary Research. The risk of introduction of diseases of animals has to be borne in mind; a disastrous epidemic of foot-and-mouth disease occurred in the United States of America some years ago, the infection having been introduced by a consignment of smallpox vaccine lymph from the Continent of Europe.

The Department has a smallpox vaccine institute at Rosebank, Capetown, where all requirements of the Union can be fully and satisfactorily met and as the vaccine is distributed free there can be no hardship in cutting off oversea supplies.

13. *Dental Caries and "Deficiency" Diseases.*—A simply-worded pamphlet on "Food and Health" [No. 194 (Health)] giving practical information regarding proper feeding and the framing of economical and well-balanced diets was published and widely distributed during the year. Cheap and wholesome dietaries for infants and growing children are also given in the pamphlet.

A pamphlet on the prevention of dental disease and decay of the teeth has also been drawn up and will be published shortly. Unfortunately it has not yet been found possible to set on foot any systematic biochemical research into possible dietetic causes of dental caries and deficiency diseases in the Union. The preliminary investigation instituted by the Department last year has revealed that in certain districts of the Union, and especially in the coastal districts and the low veld or malarial areas of the Transvaal, dental disease and decay is very common amongst children and is a serious handicap to health and development. Statistics collected by school medical officers of the different Provinces bear this out. Even in the inland, high veld and thornveld districts the amount of dental caries found amongst school children is far higher than it should be. Parents generally are woefully ignorant and careless in this matter. Enlightenment of the public is very necessary, by means of lectures, pamphlets and demonstrations (such as "tooth-brush drill") in primary schools. The appointment of school dentists and dental nurses and the provision of free dental services for children whose parents are not reasonably able to pay for them are crying needs.

14. *Hotels.*—When making general health inspections of local authority areas the medical officers of the Department inspect also the local hotels. Many of these, especially in the smaller towns and villages, are still of a very poor type, being carried on primarily for the bar trade and only secondarily for the accommodation of travellers. At many the bar is the only place where business can be transacted—the traveller, on arrival, sees the proprietor in the bar about his room; if he has to arrange about his clothes' washing or some other matter he must go into the bar to do it; when he leaves he settles his bill in the bar; clean drinking water is often not provided, and is sometimes difficult to get at table; and everything possible is done to induce visitors to patronise the bar.

This concentration of attention and activities in the bar is usually and naturally associated with inefficiency elsewhere. While the food as it appears on the table may be fairly well cooked and palatable, conditions behind the scenes—where the Health Officer penetrates but the ordinary traveller does not—are often very unsatisfactory and unappetising. Frequently kitchens are primitive as regards both equipment and construction and are kept in a dirty state; sinks, basins, and cloths for washing and drying eating utensils are frequently dirty; the same remark often applies to the clothing and persons of the cook and kitchen staff; often neither kitchen nor pantry is protected from flies by gauzing of doors and windows, and food is often seen lying about freely exposed to contamination by the numerous flies. The bedroom, bedding and equipment often leave much to be desired. In many hotels of the older type the rooms are mere closed boxes with little or no ventilation, perhaps only a fanlight above the glass-panelled door,

with the rooms constructed back to back. The bedstead often has a badly sagged wire mattress and the bedding is not always fresh and clean. The cleansing of bedrooms and utensils is often left to native servants of primitive type with little or no supervision. Bathrooms are often at a distance, across a littered yard; frequently they are of primitive construction and without hot water. Closets are often the most neglected part of the establishment. Though matters appear to be improving in this respect and most hotels now have closets with impervious floors, yet conditions are seldom really satisfactory and are sometimes actually revolting. Since the pail system is the rule, the prevalence of flies becomes a real menace to health where, as is usually the case, these have free access to the pail contents. Fly-proofing of closets is exceptional. In most villages flies are abundant in summer, owing largely to the keeping of horses, cattle and other animals under primitive conditions. Fermenting masses of manure and rubbish provide ample breeding places. Hotel premises often include badly-constructed stables with pervious or roughly-paved floors in which, during most of the year, fly-breeding goes on. Where horses or cows are kept on hotel premises there should be properly constructed stables with impervious floors sloped to a channel, so that they can be kept thoroughly clean; manure should be kept in fly-proof receptacles and removed daily.

It is not surprising that many people, after a visit to South Africa which takes them beyond the chief centres, leave the country disappointed, and sometimes disgusted, with the hotel conditions found. The High Commissioner for the Union in London, in a recent letter to this Department regarding the development of tourist traffic, remarks: "The question of hotel accommodation in South Africa is having an increasingly important bearing upon the development of the propaganda work conducted through this office for encouraging tourists and business men in Great Britain and Europe to visit South Africa. Since the inception of this work the tourist traffic has shown a progressive increase, but there can be no doubt that the unsatisfactory hotel accommodation in certain towns of the Union, particularly the smaller centres, is acting as a deterrent in many ways to the wider exploitation of this traffic to South Africa. Within the past few weeks a number of visitors have returned from a tour of the Union and many of them have called in at this office to express appreciation of the arrangements made for their tour. With few exceptions, however, these tourists have all made adverse comments upon the style of hotel accommodation in the smaller towns, stressing particularly the insanitary conditions such as lack of cleanliness, indifferent meals, primitive lavatory arrangements and slovenly service on the part of coloured attendants, especially in the matter of catering and waiting at tables. The general impression of tourists is that in the smaller centres certain of the hotels seem to be conducted primarily for the benefit of the bar trade, and the criticisms in this respect have been distinctly unfavourable."

The Department is endeavouring to secure improvements by means of inspections, reports to hotel proprietors and managers, local authorities, magistrates and licensing boards, circulars, press notices and other publicity methods—and is always pleased to advise and assist hotel proprietors in connection with defects and improvements.

It should be recognised that since hotels are licensed by the public authorities to provide accommodation and food, as well as drink, to the public, they are in a sense public buildings, and their

proprietors have special responsibilities to the public. A poor-class hotel in a town or village seriously prejudices its attractiveness, popularity and prosperity. Publicity organisations and local authorities should therefore pay special attention to the construction and management of all hostelries within their areas. The renewal of every hotel licence is considered annually by the Licensing Board, and a complaint of uncleanliness or insanitation brought against an hotel by the municipality or the police would weigh heavily with the Board against such renewal. A great deal has also been and is being done by motoring organisations, commercial travellers' associations and other bodies to secure improvements.

Much personal experience of hotels in South Africa and a study of the whole general position convince me that this matter will never be placed on a permanently satisfactory footing until radical changes are effected in the system of licensing and control of hotels. At the present time—as a result of a gradual process of " squeezing out " of the independent proprietor which has been going on for many years past, the great majority of the hotels throughout the Union are owned or controlled by a few large brewery and liquor-selling firms, and are managed under what is commonly called the " tied-house system." Under this system the manager or ostensible proprietor is merely the servant of the big company, or its tenant under an agreement which can be terminated on six months', three months', or often merely one month's notice. The main object of the owning or controlling company is to make money, and the easiest way of doing so is by the sale of liquor supplied by it. If the manager or " proprietor " fails to produce satisfactory results in this respect, whatever may be his success in other directions, he runs the risk of being turned out and superseded. Whether the manager or " proprietor " is a man of suitable type, training and experience to manage an hotel—as distinct from a bar—matters little to the controlling firm, and is a question to which licensing boards apparently give little attention. It is sincerely to be hoped that the Liquor Bill now before Parliament will be enacted with provisions which will put a stop to a system which, from the viewpoint of the welfare and prosperity of the country, is pernicious and prejudicial.

15. *Public Mortuaries.*—Up to date of Union, and for several years thereafter, the position and arrangements regarding the provision and management of Government mortuaries differed in the four Provinces. In the Transvaal they were administered by the police; in the Cape and Natal by the Department of Interior. In 1914 all were consolidated under the police branch of the Department of Justice, and a set of regulations regarding them published under Government Notice No. 1622 of that year.

In 1915 a proposal was put forward to transfer all Government mortuaries to what was then the Health Branch of the Department of the Interior, but this proposal was negatived by the Treasury on the ground that it would entail increased expense.

Since then the Government mortuaries throughout the Union have been carried on by the police, but under protest, so to speak, their contention being that under the Public Health Act local authorities and the Health Department were responsible. This Department repeatedly pointed out that the relative clauses in the Public Health Act, 1919, refer only to the provision of mortuary facilities *for public*

health purposes, and that there is nothing in the Act or any other law under which a local authority could be required to provide such facilities for police and other Government purposes; also that it was clearly a case for co-operation between all the authorities concerned.

These views were not acceptable to the Department of Justice and a kind of deadlock resulted; that Department continued to carry on the existing mortuaries, but refused to incur any expenditure for improvements or for new mortuaries, although such were badly needed in many places.

The whole question was recently reviewed and reconsidered by the two Departments concerned, with the result that the Department of Justice has now definitely accepted responsibility for the provision and administration of Government mortuaries and necessary adjuncts, this Department using its good offices to promote co-operation with local authorities, hospital boards, etc., with a view to avoiding duplication or over-lapping and consequent unnecessary expense.

16. *First-Aid in Railway Accidents.*—No adequate provision either for casual removals or for dealing with injured on a large scale as a result of a bad railway accident is at present made by the Railways and Harbours Administration, though it encourages its employees to qualify in ambulance work. There is, however, a number of divisions in the Railway Service of St. John's Ambulance Brigade, some of which are reported to be highly efficient.

Useful suggestions regarding this matter are made in the report of the Hospital Survey Committee, but there is need for special inquiry by a committee consisting of representatives of the Administration, the hospitals at the large centres, and this Department with a view to the making and providing of suitable arrangements and facilities for removing and dealing with the injured in the event of railway disasters.

17. *Safety in Mines.*—During the past few years valuable work has been done by the South African Red Cross in organizing, with the co-operation of mine managements, ambulance and first-aid work on the mines.

Safety apparatus has been devised and provided, and a large number of men has been trained in rescue work. Even amongst mine native labourers ambulance workers have been trained, and in time of disaster it is possible for all mines to obtain at short notice the service of trained men equipped with rescue apparatus of modern and approved type.

18. *Prevention of Seaside Bathing Accidents.*—With the increasing popularity of seaside holiday resorts an undue number of bathing fatalities takes place every year, and it seems desirable that the precautions taken thereat to prevent drowning should be reviewed and overhauled.

Beaches set aside as safe for bathing at the more popular resorts should be supervised by attendants trained in life-saving and first-aid and provided with all necessary apparatus and facilities. The public should be warned of dangers through the Press and otherwise, and warning notice-boards should be erected and maintained at all dangerous spots.

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