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NEW ZEALAND.

DEPARTMENT OF HEALTH.

ANNUAL REPORT OF DIRECTOR-GENERAL OF HEALTH.

Presented in pursuance of Section 76 of the Hospitals and Charitable Institutions Act, 1909.

CONTENTS.

The DIRECTOR-GENERAL OF HEALTH to the Hon. the MINISTER OF HEALTH.

Health Department, Wellington, 22nd September, 1921.

I HAVE the honour to submit the annual report of the Department for the year 1920–21.

PART I.—GENERAL SURVEY.

SECTION 1.—GENERAL ADMINISTRATION.

The Department can now be congratulated on being possessed of a thoroughly workable Health Act, which I have reason to believe may be said of the Act of 1920. In fact, it is even said to be the best Act of its kind in the English language. That such an Act has been brought into existence is largely due to the energy and devotion of my colleague Dr. R. H. Makgill, who has given much time during his service to the construction of a workable Act—which is more than can be said of the Public Health Act under which the officers of this Department had been working until this year.

By this Act the Department is divided into the following divisions, under the control of the Director-General and the Deputy Director-General, who are responsible for the co-ordination of the work of the various divisions:—

Division of Public Hygiene	M. H. Watt, M.D., D.P.H.
Division of Hospitals	D. S. Wylie, C.M.G., C.B.E., F.R.C.S.
Division of Nursing	Miss Hester Maclean, R.R.C.
Division of School Hygiene	E. H. Wilkins, M.B.
Division of Dental Hygiene	T. A. Hunter, C.B.E.
Division of Child Welfare	F. Truby King, C.M.G., M.B., B.Sc. (P.H.).
Division of Maori Hygiene	Te Rangi Hiroa, D.S.O., M.B.

In this connection the Department specially welcomes the services of Dr. Truby King, Director of the Division of Child Welfare, who has a world-wide reputation for work in the special division to which he has been appointed.

It is to be hoped that when, after the struggles of years, the Department has been adequately staffed, and thus given every opportunity of making its influence felt, the financial necessities of the Dominion will not necessitate any curtailment of its activities. As the matter now stands we have not been able to obtain the staff necessary to carry out the various duties imposed upon the Department by the Health Act, and in that connection it is especially regrettable that, for the reasons mentioned, the Department has not been able to wholly fulfil its obligations to the local authorities as regards the appointment of Sanitary Inspectors. It is hoped that local authorities will recognize this.

It is also to be regretted that the Department has not been able to establish additional health districts at Invercargill, Nelson, and Hamilton, with a Medical Officer of Health in charge, as was originally intended.

PUBLIC HEALTH.

The past year has, on the whole, been a disappointing one, especially as regards notifiable diseases. In his report the Director, Division of Public Hygiene, states: "The outstanding features of the year under review were widespread epidemics of influenza, measles, and whooping-cough, an increased prevalence of poliomyelitis, and an outbreak of smallpox in the Otago Health District."

Though there is a considerable decrease in the number of notifications of scarlet fever, and a considerable decrease in the notifications of diphtheria, a great deal too many cases of diphtheria are

notified in this country to make one feel satisfied. We seem to know no more of the causes of diphtheria than was known thirty years ago. This is most disappointing, especially as the same may be said of some other infectious diseases, such as influenza, measles, whooping-cough, &c. It seems that our only hope as regards diphtheria is action based on the Schick reaction and toxin anti-toxin immunization. The Department has this treatment in hand in connection with the epidemics of diphtheria in Canterbury, and the results apparently justify the high expectations reported.

Enteric Fever.—The efforts of the Department are apparently having some effect as regards enteric fever. It will be seen by the report of the Director, Division of Public Hygiene, that there has been a considerable reduction in the number of notifications from this disease. Of the 389 cases notified, only sixty were notified from the South Island. This is undoubtedly due to the comparatively few Maoris living in our southern Island. Enteric is still endemic in the Maori districts in the north and east of the North Island, but even there the disease has been much diminished by means of nurses who work amongst the Maoris, and by anti-typhoid inoculation, which has been fairly extensively carried out amongst the Natives.

As regards the death-rate from *tuberculosis*—7·21 per 10,000, as against 6·30 in 1914—this increase is easily accounted for by the "adverse influences of the war and the disastrous effects of the epidemic of 1918."

Smallpox (Alastrim).—A mild epidemic of smallpox (alastrim) broke out, and was, fortunately, limited to the Otago Health District, ninety-five cases in all being notified of this mild form of the disease, known as alastrim. Its origin is unknown. Here again, as in the epidemic of 1913, the efficiency of vaccination was shown in a most striking manner.

Non-notifiable Diseases.—Of these the increase in the death-rate from cancer is most noticeable, though the year 1920 showed a slight drop, there being 8·72 deaths per 10,000 persons living, as against 9·07 in the previous year. Despite the exhaustive researches of the Cancer Commission, which have extended over a considerable period of years, there is very little more known as to the cause or causes of this dreadful disease. It has been suggested, and not without reason, that, as the deaths from cancer are increasing in this as well as in other civilized countries, this Department should undertake researches into the causes of this disease. But let it be considered what such research work would mean. In the first place, the worth of the data to be obtained in a comparatively small community such as ours is not to be compared with that of larger countries. Moreover, a very considerable increase in our staff would be necessary to make the exhaustive inquiries involved. We cannot do better, therefore, than solicit the co-operation of the practising members of the profession in the gathering of data relative to patients, and await the reports of the researches which are being conducted under the auspices of the Cancer Commission in the United Kingdom, in collaboration with other authorities in Europe and America.

Frequent inquiries have been from time to time made with regard to the efficacy of radium in the treatment of this disease, and as to the extent to which the Department would subsidize any sums raised for the purpose of providing this useful element for our public hospitals. Though I understand the results of the treatment are not as yet convincing, there is no doubt that radium is most useful in alleviating the pain of the disease, and its purchase is justifiable if only on that account. I understand, however, from members of the profession who have had considerable experience in the use of radium that to procure a sufficient quantity for the purpose of treating cancer approximately £50,000 worth would be required. Some £5,000 worth of radium was procured for the Dunedin Hospital, and as matters now stand it would be better to concentrate on the Dunedin Hospital for the carrying-out of this treatment, at any rate for the present—especially as radium emanations can be sent to any part of the country—than to try and supply all our chief hospitals with this very expensive and mysterious element.

SECTION 2.—DEPARTMENTAL FINANCE.

With the consequent increase in the Department's activities resulting from the establishment of the Divisions of Child Welfare, School Hygiene, and Dental Hygiene, the taking-over of the Pukeora Military Sanatorium, and the increase, due to the high price of all commodities, in the cost of the institutions administered by the Department, it might be reasonably anticipated that there would be an increase in the departmental expenditure; but by careful framing of the estimates, and the cutting-down of all but absolutely essential expenditure, there is an actual decrease of some thousands of pounds in the estimated requirements of the Department, and this without in any way curtailing such necessary activities as nursing or maternity services.

In regard to the appropriation for subsidies for Hospital Boards, an increase of about £20,000 is estimated this year. The reason for the increase is the large amount of outstanding claims that were not received until after the close of the financial year, which consequently require to be provided for on this year's estimates. As a matter of fact, there is no increase in the amount of subsidies required for maintenance purposes this year, it being the same as that of last year. This may be regarded as very satisfactory in view of the alarming increase in the two previous years. Owing to the rigid cutting-down of all but essential works, and the policy of raising the necessary money by loans, the amount required for capital subsidies is less by £10,000 than in the previous years.

HOSPITALS.

Owing to the increased use which is being made of hospitals by the community, and to the way in which the increased cost of living has affected the maintenance charges of all hospitals, no reduction can be expected at present so far as hospital maintenance charges are concerned. Details of hospital expenditure, however, are now being subjected to a much closer scrutiny than formerly, owing to the

appointment of an Inspecting Accountant and an Inspecting House Steward, and material good in the shape of increased efficiency and economy will certainly result from their work.

It is satisfactory to note, at all events, that for the first time in the history of the Department a halt is apparently being made in the cost of our hospitals; and though this expenditure must necessarily increase owing to the necessity of providing hospital accommodation adequate for the increasing population of the Dominion, yet it is hoped to a great extent to offset this by the more expert performance of the economical administration of the institutions.

SECTION 3.—MATERNAL MORTALITY.

Early in June your attention was directed to some figures in *Maternal Mortality*, published by the Children's Bureau, United States Department of Labour, 1917, which placed New Zealand second on the list of the eleven countries as regards this mortality. This naturally led you to direct inquiry as to (1) whether the figures were correct; (2) were they a fair comparison, and what was the cause; (3) what appropriate methods were recommended as a remedy for this state of things.

Attached is a copy of the interim report in answer to your questions. Since then, however, the matter has been very carefully considered by the Board of Health, and many medical men questioned by the Board, and a special committee set up to consider the matter.

Among the medical men examined was Dr. H. Jellett, now of Christchurch, but till comparatively recently Master of the Rotunda Hospital, Dublin, one of the largest maternity hospitals in the United Kingdom. The evidence of this well-known authority was much appreciated by the members of the Board of Health, and his recommendations will undoubtedly be given the consideration due to Dr. Jellett's experience and authority. It is expected that the special committee will shortly issue its report.

SECTION 4.—HOSPITALS.

Hospitals.

The report of the Director of the Division of Hospitals will be read with interest. Dr. Wylie has taken up his new duties with the enthusiasm based on the considerable experience he has obtained in the administration of military as well as civil hospitals. He comes on the hospital field, as it were, at a critical time. There was a danger that the benefits of experiences of hospital management gained during the war might to some extent be lost to the Department unless it could attract to its ranks an officer who obtained a reputation for hospital management during the war, and one possessing the imagination necessary for the improvement of hospital matters in a comparatively young country with limitations as regards finance and control.

We have a good hospital system, but, as Dr. Wylie says, there should be better co-ordination of hospitals, so that more efficient medical and surgical treatment may be given the patient. Hospitals should therefore be grouped for that purpose, and better arrangements made for the transfer of patients from one hospital to another according to the treatment needed, despite the fact that the hospitals concerned may be in different hospital districts. There is no doubt that the special departments must be developed to their fullest extent, and certainly in the base hospitals of the larger centres, and that to ensure these special departments being developed to their fullest efficiency special subsidies should be given. These base hospitals should be available for patients from other hospital districts—at any rate, until such time as these special departments can be instituted in other hospitals. This, of course, is impossible just now, and it is feared the development of our hospitals must be necessarily somewhat slow for the next few years.

Dr. Wylie very rightly stresses the necessity for evolving better record and stores systems. The necessity especially for the latter has been obvious to the departmental officers concerned for some time, but the staff necessary for this development could not be obtained. It is fortunate, however, that as regards our stores system the matter was deferred, as the Department has been able to secure the services of officers who gained special experience in these matters during the war.

The need for the employment of dietitians in our larger hospitals is quite apparent to those who have had the advantage of visiting those hospitals in the United Kingdom, Canada, and the United States of America where such officers have been appointed. Increased cleanliness in the preparation of food, as well as a better use of foodstuffs, and the resulting economy, should, as is usually the case, follow the appointment of these officers, for whom I hope a better title than "dietitian" may yet be devised.

Of special interest are Dr. Wylie's remarks on the treatment of crippled children in our military hospitals. Altogether there are 130 children receiving treatment at the present time, and eighty have actually received treatment and been discharged. As Dr. Wylie points out, operative treatment of children will be of little avail unless backed up by the subsequent close supervision and treatment by a skilled staff. This should be possible in the largest centres, at any rate.

Hospitals Commission.

The findings of the Hospitals Commission—primarily set up to consider the question of subsidies to Hospital Boards—are, on the whole, gratifying to the Department. The Commission certainly covered a very wide field of hospital questions during its twenty-seven days of sitting. That the members should recommend a sliding scale of subsidy as against a flat rate was only to be anticipated of persons who had seriously studied the subject. We have every hope that as a result of this Commission the staff of the Department will be strengthened, and the necessary legislation brought about to deal with the many recommendations of this important Commission.

Division of Nursing.

Miss Maclean's report as the Director of the Division of Nursing is always interesting. Indeed, she may be proud of the results achieved during the past fourteen years. The New Zealand nurse ranks high in many lands, and that New Zealand nurses have achieved such distinction is largely due to the efforts of their devoted Matron-in-Chief.

Nor, despite the recent criticisms in connection with maternal mortality, do New Zealand midwives rank low in their profession. Before being eligible for State registration they have to undergo twelve months' training, which is certainly double, if not treble, the training necessary for eligibility to the examination of the Central Midwives Board of the United Kingdom.

St. Helens Hospitals.

In view of the recent criticisms in connection with maternal mortality, the reports of the St. Helens Hospitals and other maternity homes will be read with interest.

As regards the mortality in private maternity hospitals, it will be noted that of 15,838 confinements there were only thirty-eight deaths over a period of two years, a mortality rate of approximately 2·4 per thousand. These returns, though undoubtedly they may be improved, do not justify the very strong criticism to which these private maternity hospitals have been subjected by some people. There is no doubt ample room, however, for improvement, and such will be effected.

Medical Inspection of Schools.

That 1,356 schools were visited by Medical Inspectors during the year and 78,980 children examined is not a bad record for the division under the control of Dr. E. H. Wilkins.

I have every reason to believe that the results of medical school inspection are already bearing good fruit, and all credit is due to those lady members of our profession who were the pioneers of this country in the medical inspection of schools. In fact, as to the value of the services of these officers, I have no hesitation in saying that very few officers of this Department get down to the actual bed-rock as to how families are living in this country as do the School Medical Officers; and Dr. Wilkins and his staff will, I am sure, play a great part in the development of this Department.

Division of Dental Hygiene.

Mr. T. A. Hunter, the Director of Dental Hygiene, has undoubtedly had a great many obstacles to overcome in connection with the development of his branch, and he is distinctly to be congratulated on the progress made despite considerable opposition from quarters where he might have expected support. However, I feel sure that Mr. Hunter is developing his division on right lines, and that he will in time bring about that improvement in the teeth of children that he so ardently believes is possible.

Division of Maori Hygiene.

The report of the Director of the Division of Maori Hygiene stresses his dissatisfaction in some respects with the subsidized medical services. It has been recognized for some years that in a few instances the services rendered have been of a very perfunctory nature. For this reason the services of some doctors were replaced with nurses, and the results have been exceedingly satisfactory. It is possible that this nursing system will have to be extended.

Charitable Aid.

No special report has been submitted on charitable aid, and the cost of the same for this year is not yet to hand, but will be shown in appendices to this report to be published at a later date.

The way in which charitable aid is distributed in this country, as mentioned in previous reports, makes me feel very uneasy; and but that the time is somewhat inopportune for asking for additional appointments I would suggest that an officer well versed in the administration of charitable relief be obtained from the United Kingdom, there being very few persons in this country, fortunately, who have had the opportunity of obtaining the experience necessary to deal with this very complex problem. That the question is an important one is evidenced not only from the increase in expenditure, but by the fact that we have already in this country people of the third (if not the fourth) generation seeking and obtaining alms.

SECTION 5.—BOARD OF HEALTH, ETC.

The new Board of Health, established under the Health Act, 1920, has held a number of sittings, and has dealt with various important matters, including applications from five local bodies for the Board's permission for the execution of certain sanitary works without a poll of the ratepayers being taken. In only one case, so far, has the Board seen fit to grant the application. Some of the cases, however, are still under consideration.

Among other matters considered by the Board have been two important subjects—viz., New Zealand's maternal mortality, and the control of surgical operations. A report on the former of these will shortly be made available by the Board.

Medical Practitioners Act, 1921.

During the year the Medical Board established under this Act continued its periodical meetings under the presidency of Dr. H. L. Ferguson, C.M.G., who is now Chairman. The following table,

covering the past five years, shows the number of cases dealt with by the Board so far as the registration of medical practitioners is concerned:—

—	1916.	1917.	1918.	1919.	1920.
Number on register on 1st January	948	962	969	985	1,015
Number added during year by registration ..	37	27	30	48	71*
Number added during year by restoration ..	5	1	3	3	5
Number removed during year on evidence of death	10	21	17	20	25
Number removed during year by direction of Medical Board	18	..	..	13	..
Number removed during year by direction of Supreme Court	..	..	..	..	2
Number on register on 31st December	962	969	985	1,015	1,064

* Includes 36 with New Zealand qualifications.

One very noticeable feature is the growing number of yearly additions to the register.

In addition to dealing with matters arising directly from the registration of medical men, the Board has also given the Department the benefit of its counsel on a multitude of matters relating to medical practice which have cropped up during the year, and for this help the Department is deeply grateful.

Masseurs Registration Act.

During the year, after exciting a good deal of public interest, the Masseurs Registration Act was placed upon the statute-book by Parliament. The measure is designed to protect the massage profession and the public. The administration of its provisions is placed in the hands of a Board of three, consisting of the Director-General of Health (who is Chairman), a person engaged in the practice of massage, and a registered medical practitioner. The Director-General of Health has deputed his position as Chairman to Dr. D. S. Wylie, C.M.G., C.B.E., F.R.C.S., Director, Division of Hospitals, who has, by reason of his experience in military orthopædic hospitals in the United Kingdom and New Zealand, considerable experience of the training of masseurs and masseuses, and of the application of massage and other branches of physio-therapy in the treatment of disease.

For the nominative positions on the Board the Government was exceedingly fortunate in securing the services of Miss L. E. Brandon, A.R.R.C., I.S.T.M., N.Z.R.N., of Wellington, and Dr. H. Hardwick Smith, F.R.C.S., also of Wellington.

Up to the 31st March the Board held three meetings and dealt with a total of 110 applications, of which two were refused registration.

Although the Act provides the right of appeal to applicants who may be dissatisfied with the Board's decisions, no one so far has taken advantage of this provision.

The work of the Board so far must be regarded as highly satisfactory.

Plumbers Registration Act, 1912.

Two meetings of the Plumbers Board constituted under the above Act were held during the year.

The Board held examinations under the Act in July and November, 1920. 239 candidates presented themselves, the result being as follows: Thirty-eight candidates qualified in the theoretical part, sixteen in the practical part, and fifty-eight qualified or completed in both parts of the examination and were duly granted registration. To date the names of 1,353 have been entered in the register. Out of this total thirty names have been removed through death. One name was removed from the register for a period of six months under section 21 of the Act. During the year 1,072 pocket certificates of registration have been issued.

SECTION 6.—THE PASSING OF TE WAIKATO SANATORIUM.

It is with very great regret that I considered it my duty to recommend the Minister to authorize the closing of Te Waikato Sanatorium. I well remember the enthusiasm with which this place was opened in 1902. Those who were present at the opening could hardly imagine a better place for a sanatorium for the treatment of consumption—situated on the wooded slopes of the Maungakawa Range, with a splendid view of the plains of the Waikato.

The purchase of this property has certainly been amply justified, but now, however, that the wooden buildings have fallen into such a state of disrepair it would indeed be shortsighted to recommend an expenditure of some £30,000 to put the place in repair and bring it up to date. Its distance from the railway also makes the institution very difficult to administer economically, and now that we have a sanatorium of modern design at Pukeora it would seem better to enlarge that institution and develop others in the South Island.

Te Waikato has fulfilled its part, and the place will ever be memorable as the first attempt in this Dominion to deal effectively with the "white plague."

In conclusion, I take this opportunity of thanking the heads of divisions and those officers of the Department who have so loyally supported me. As I write, the names of many occur to me for special mention; but, while I thank them collectively, I cannot refrain from specially thanking for their splendid and loyal service my old friends and colleagues Dr. J. P. Frengley, Deputy Director-General, and Dr. R. H. Makgill.

T. H. A. Valintine,
Director-General of Health.

PART II.—PUBLIC HYGIENE.

SECTION 1.—VITAL STATISTICS.

Population.

The population of New Zealand at the census of October, 1916, was 1,099,419. This total does not include Maoris, whose numbers were separately determined as 49,776. The estimated mean population (excluding Maoris) for 1920 is given by the Government Statistician as 1,179,619.

Births.

The births of 29,921 living children were registered in New Zealand during 1920, as against 24,483 in 1919, and a yearly average of 27,223 during the pre-war period 1910–14. The birth-rate for 1920 was thus 25·36 per 1,000 of the total population.

The general course of the birth-rate in the Dominion during the last ten years is shown in the following table :—

Year.	Total Number of Births registered.	Birth-rate per 1,000 of Population.
1911	26,354	25·97
1912	27,508	26·48
1913	27,935	26·14
1914	28,338	25·99
1915	27,850	25·33
1916	28,509	25·94
1917	28,239	25·69
1918	25,860	23·44
1919	24,483	21·54
1920	29,921	25·36

The abnormally low level of the figures for 1918 and 1919 and the satisfactory recovery for the year under review are noticeable.

This behaviour of the birth-rate, as was pointed out in last year's report, is the result of the war and the influenza epidemic. In England and Wales, for instance, the experience has been somewhat similar; the birth-rate for the years 1916–19 was much below normal, but showed such a marked improvement in 1920 as to make the figure for that year the highest for a decade. The corresponding rate for England and Wales for 1920 is 25·4.

Still-births, which have been defined by the Births and Deaths Registration Amendment Act of 1915 as "children which have issued from their mother after the expiration of the twenty-eighth week of pregnancy and which were not alive at the time of such issue," are compulsorily registrable in the Dominion. The next table shows the numbers of such births and their rate per 1,000 live births in individual years for the quinquennium 1916–20 :—

Year.	Total Number of Still-births registered.	Rate of Still-births per 1,000 Live Births.
1916	682	23·9
1917	694	24·6
1918	701	27·1
1919	680	27·8
1920	840	28·1

Still-births are not included either as births or deaths in the various numbers and rates given elsewhere in this report.

Deaths.

The number of deaths recorded during 1920 was 12,109, as compared with 10,808 in 1919, and a yearly average of 9,370 in the period 1910–14. The Government Statistician gives the index of mortality for New Zealand for 1920, taking the population of Sweden in 1890 as a standard, as 12·80 per 1,000 of the total population.

The following table gives the number of deaths and the death-rate in the Dominion for the decennium 1911–20 :—

Year.	Total Number of Deaths.	Crude (Actual) Death-rate.	Standardized Death-rate (Index of Mortality).
1911	9,534	9·39	11·83
1912	9,214	8·87	11·27
1913	10,119	9·47	11·92
1914	10,148	9·31	11·85
1915	9,965	9·06	11·38
1916	10,596	9·64	11·88
1917	10,528	9·58	11·66
1918	16,364	14·84	16·80
1919	10,808	9·51	11·75
1920	12,109	10·27	12·80

The principal causes of death in 1920 are set out below in detail :

Disease.	Number of Deaths.	Proportion of 1,000 Deaths from all Causes.
1. Measles	122	10·08
2. Whooping-cough	107	8·84
3. Scarlet fever	15	1·24
4. Diphtheria ; croup	95	7·84
5. Enteric fever	40	3·30
6. Influenza	480	39·64
7. Phthisis (pulmonary tuberculosis)	695	57·39
8. Other forms of tuberculosis	156	12·88
9. Cancer	1,029	84·98
10. Diseases of nervous system and special senses	1,153	95·22
11. Organic heart-disease	1,703	140·64
12. Other diseases of circulatory system	323	26·67
13. Bronchitis	389	32·12
14. Pneumonia	528	43·60
15. Other diseases of respiratory system	437	36·09
16. Diarrhœa and enteritis	188	15·52
17. Other diseases of digestive system	526	43·44
18. Diseases of genito-urinary system	504	41·63
19. Premature birth and diseases of early infancy	815	67·31
20. Old age	1,017	83·99
21. Injuries and accidents (violence)	696	57·48
22. Other causes	1,091	90·10
	12,109	1,000

It will be seen that the more common infectious diseases (Nos. 1–8 on the above list) were responsible in 1920 for 1,710 deaths, or some 14 per cent. of the total mortality for the year. Scarlet fever and enteric, which are regarded by the public generally as formidable diseases, accounted for only 110 deaths, while whooping-cough and measles, which make no similar appeal to the imagination, caused double the number of fatalities. The table shows clearly that there is still in New Zealand scope for a more earnest application of the principles of preventive medicine.

Infant Mortality.—The infant-mortality rate for 1920 was 50·57, as compared with the rate of 45·26 for the preceding year.

SECTION 2.—NOTIFIABLE INFECTIOUS DISEASES.

The outstanding features of the year under review were widespread epidemics of influenza, measles, and whooping-cough, an increased prevalence of poliomyelitis, and an outbreak of smallpox in the Otago Health District.

The following table is submitted as enabling a rapid comparison to be made of the incidence of the more important infectious diseases in the Dominion during the past five years :—

Cases of Principal Infectious Diseases notified during Past Five Years.

Disease.	1916.	1917.	1918.	1919.	1920.
Scarlet fever	4,278	2,755	1,654	1,521	1,248
Diphtheria	2,376	5,458	5,539	3,499	2,442
Enteric fever	806	653	423	477	389
Tuberculosis	950	1,521	1,072	984	1,305
Cerebro-spinal meningitis	135	42	159	96	79
Poliomyelitis	1,018	54	6	11	46
Totals	9,563	10,483	8,853	6,588	5,509

An examination of the table discloses the following points of interest :—

Scarlet Fever.

Scarlet fever is at a lower level than in any other year of the quinquennium. The disease, moreover, is characterized by its mildness ; only fifteen deaths, representing a case mortality of 1·2 per cent., were attributable to this cause in 1920.

Diphtheria.

Diphtheria again shows a substantial decline in comparison with recent years. The disease, however, still remains all too prevalent, the cases occurring in 1920 being more than double the number notified in 1914. The disease, fortunately, is relatively mild in type, and only ninety-five deaths were due to this cause in 1920. The same undue prevalence of diphtheria, it may be added, has been experienced in other parts of the world. The following table, giving the incidence rate of

the disease (notifications per million population) in New Zealand and in certain of the Australian States for the latest years for which figures are available, shows this clearly :—

Incidence Rate of Diphtheria in New Zealand and Australia.

Country.	Year.	Notifications per Million of Population.
New Zealand	1919	3,079
,, ...	1920	2,092
New South Wales	1919	1,412
Queensland	1919-20	3,917
Western Australia	1919	3,001
Tasmania	1920	4,130

ENTERIC FEVER.

Enteric fever shows a further marked decrease. If the present rate of progress is maintained it seems not unreasonable to hope that ere long this disease will cease to figure among the important causes of sickness and death in the Dominion. The position is extremely gratifying, and indicates the high and steadily improving standard of sanitation in New Zealand. The active policy of inoculation of the Maoris with anti-typhoid vaccine which has been carried out in recent years has doubtless had a considerable share in producing a reduction of enteric fever in that section of the population.

TUBERCULOSIS.

The notifications for 1920 show a considerable increase, although they do not equal the unsatisfactory record of 1917. In considering this disease, however, it must be remembered that information derived from returns of notifications alone is not accurate, as there is, unfortunately, a tendency on the part of the general practitioner to neglect to notify his cases. The returns of deaths are not so misleading, and the following table is therefore inserted as showing more accurately the course of the disease during the last decade :—

Deaths from Tubercular Diseases.—Decennial Table, 1911 to 1920, showing for each Year the Rate per 10,000 living, and the Percentage of Total Deaths.

Year.	Mean Population.	Number of Deaths from Tuberculosis.	Rate per 10,000.	Percentage of Total Deaths from all Causes.
1911	1,014,896	738	7·27	7·74
1912	1,039,016	716	6·89	7·77
1913	1,068,644	812	7·60	8·02
1914	1,090,328	728	6·67	7·17
1915	1,099,394	693	6·30	6·95
1916	1,099,449	742	6·74	7·00
1917	1,099,117	755	6·87	7·17
1918	1,103,022	832	7·54	5·08* 7·64†
1919	1,136,389	762	6·71	7·05
1920	1,179,619	851	7·21	7·03

* All deaths. † Excluding deaths from influenza, October–December, 1918.

It will be seen that the death-rate from tuberculosis reached its lowest point in 1915, but since then has shown a tendency towards increase. This is doubtless due to the adverse influences of the war and the disastrous pandemic of 1918. The New Zealand rate, it should be added, compares very favourably with that of other countries.

CEREBRO-SPINAL MENINGITIS.

This again shows an improvement; it will be seen that the notifications for 1920 are only one-half of the number received in 1918.

POLIOMYELITIS.

Poliomyelitis showed an unmistakable tendency towards increase during the year under review. The Auckland Health District suffered in the autumn, while the rest of New Zealand was affected mainly in the succeeding spring. Twelve of the cases occurred in the Cook Hospital District during the months of September, October, and November. In this small outbreak there were four deaths, and so far as is known three cases with varying degrees of permanent paralysis. It is a severe casualty list for so small an outbreak. Despite careful inquiry, no connection could be discovered between any two of these cases.

The allied disease—lethargic encephalitis—it is interesting to note, was not influenced in the same direction as poliomyelitis. Ninety cases of lethargic encephalitis were notified in 1919, and only forty-two in 1920.

The next two tables, showing the number of cases notified (A) by hospital districts, and (B) by months, are appended as furnishing more exact information concerning the incidence of infectious disease in the Dominion in 1920 :—

Table A.—Showing Infectious Diseases notified in Hospital Districts during the Year 1920.

Hospital District.	Estimated Population (excluding Maoris).	Estimated Maori Population.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	Cerebro-spinal Meningitis.	Poliomyelitis.	Puerperal Septicæmia.	Influenza.	Pneumonia.	Measles.	Pneumonic, Fulminant, and Septicæmic Influenza.	Variola.	Varicella.	Unclassified Septicæmia.	Lethargic Encephalitis.	Ophthalmia Neonatorum.	Erysipelas.	Tetanus.	Hydatids.	Trachoma.	Beriberi.	Anthrax.	Actinomycosis.	Totals.
North Auckland Health District.																										
Mangonui	4,020	2,555	1	..	..	1	..	..	..	46	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	49
Whangaroa	857	685	1	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
Bay of Islands ..	3,859	2,612	2	..	5	5	2	1	..	56	3	..	1	..	13	..	..	..	..	..	..	1	..	..	..	89
Hokianga	2,931	3,859	..	..	8	1	..	..	..	89	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	98
Kaipara	10,939	1,284	..	9	..	10	4	1	..	93	9	..	3	..	5	..	..	..	..	..	..	..	..	..	..	134
Whangarei	13,233	1,095	5	5	5	10	..	..	..	465	4	..	..	..	2	..	..	1	1	1	..	..	..	..	..	499
Auckland Health District.																										
Auckland	175,758	1,685	266	297	79	139	19	28	23	4,327	451	90	125	..	36	7	11	10	28	3	3	1	..	..	..	5,943
Waikato	59,032	8,139	59	139	27	52	8	3	3	1,285	135	40	72	..	31	2	..	2	10	..	2	2	..	..	..	1,872
Thames	14,722	1,365	7	45	21	13	4	6	2	524	25	1	30	..	5	..	1	..	2	1	..	..	..	1	..	688
Waihi	4,831	..	21	8	1	..	..	..	..	223	35	2	12	..	2	1	..	..	..	1	..	..	..	..	..	306
Coromandel ..	2,375	300	..	..	..	3	..	..	..	63	..	..	5	..	..	..	..	..	1	..	..	..	..	..	..	72
Tauranga	6,619	1,716	4	19	2	7	..	..	..	244	6	..	7	..	..	..	..	1	..	..	..	..	..	..	..	290
Bay of Plenty ..	6,493	4,201	1	20	35	8	..	..	..	95	4	..	5	..	5	..	..	..	1	..	2	..	..	..	..	176
Taumarunui ..	9,314	1,081	2	6	6	4	..	..	..	46	5	1	6	..	4	..	..	..	..	..	..	..	..	..	..	80
Hawke's Bay Health District.																										
Waiapu	2,209	2,714	..	..	27	10	1	..	..	116	8	..	..	..	1	..	..	..	..	..	..	..	..	..	..	163
Cook	22,495	1,755	2	22	22	12	..	12	..	392	22	4	3	..	4	1	1	1	5	1	..	..	..	..	..	504
Wairoa	4,104	2,555	..	5	17	29	1	..	2	320	45	..	2	..	..	..	2	1	..	..	3	..	..	..	..	427
Hawke's Bay ..	34,654	1,203	35	109	17	99	1	1	10	1,271	42	23	14	..	..	1	2	1	7	1	2	..	..	..	..	1,636
Wanganui and Taranaki Health District.																										
Taranaki	26,419	1,702	29	56	10	13	1	1	6	717	29	1	2	..	37	..	..	..	2	2	1	..	..	..	..	907
Stratford	10,205	19	10	20	..	2	..	1	1	393	22	20	11	..	3	..	..	1	..	..	..	..	..	..	..	484
Hawera	17,814	882	20	71	..	10	..	..	2	974	67	3	8	..	34	..	..	2	1	..	..	..	..	..	..	1,192
Patea	5,241	276	9	17	8	4	..	..	..	348	21	1	..	..	5	..	..	..	1	..	..	..	..	..	..	413
Wanganui	45,323	2,352	8	73	6	30	4	4	5	1,085	42	13	12	..	25	..	2	2	3	..	1	..	..	..	..	1,315
Wellington Health District.																										
Waipawa	20,490	727	26	84	2	10	2	..	2	223	19	4	5	..	5	..	..	2	4	..	3	..	..	..	..	391
Palmerston North ..	46,792	1,778	40	138	19	19	1	..	8	635	52	70	4	..	22	..	3	3	2	..	3	1	..	..	..	1,020
Wellington	109,344	458	66	234	10	117	10	3	5	2,753	206	280	19	..	46	1	6	7	12	..	2	2	1	..	..	3,780
Wairarapa	32,988	881	54	77	1	13	3	..	1	698	14	8	1	..	12	..	..	1	1	..	1	..	..	..	..	885
Wairau	11,819	86	3	16	..	2	..	..	..	280	1	..	1	..	..	..	..	..	..	1	..	..	..	..	..	304
Picton	3,284	287	..	1	..	..	..	..	..	49	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51
Nelson	25,913	138	20	153	1	6	1	1	..	1,146	6	1	5	..	20	..	1	2	2	..	..	..	..	..	..	1,365
Canterbury Health District.																										
Westland	7,600	56	..	11	3	2	..	..	..	13	1	..	8	..	1	1	..	..	..	..	..	..	..	..	..	40
Buller	10,113	25	1	11	..	3	1	..	..	134	..	..	6	..	1	..	..	..	..	..	..	..	..	..	..	157
Inangahua	4,287	..	..	16	2	10	1	1	2	150	12	..	..	..	2	..	2	..	..	..	1	..	..	..	..	199
Grey	12,727	..	1	24	2	11	..	..	..	253	3	1	1	..	..	..	..	..	1	..	1	..	..	..	..	298
North Canterbury ..	141,282	740	137	292	36	385	9	5	34	3,458	425	376	75	..	37	10	6	4	32	..	8	..	..	..	1	5,330
Ashburton	16,784	17	15	33	1	11	1	..	1	233	5	1	2	5	8	1	..	1	4	..	3	2	..	..	..	327
South Canterbury ..	39,046	217	109	90	6	23	..	1	3	1,316	27	78	..	..	18	1	..	1	1	1	..	..	..	..	..	1,675
Otago Health District.																										
Waitaki	15,967	37	50	6	1	22	2	..	2	546	22	21	2	..	4	1	2	..	9	..	2	..	..	..	..	692
Otago	111,568	123	136	156	6	148	2	3	8	3,977	109	1,549	21	60	75	2	2	5	19	..	7	..	..	..	..	6,285
Vincent	5,287	..	4	89	..	9	..	..	..	284	19	..	1	..	1	..	..	..	1	..	..	..	..	..	..	408
Maniototo	2,900	..	4	..	..	7	1	..	1	41	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	56
Southland	54,534	47	90	75	3	41	..	4	3	544	35	9	1	30	43	1	1	..	3	2	..	1	..	..	..	886
Wallace and Fiord ..	10,954	93	10	15	..	4	..	..	..	14	1	..	..	..	2	..	..	..	1	1	..	..	..	..	..	48
Totals ..	1,167,126	49,745	1,248	2,442	389	1,305	79	76	124	29,928	1,933	2,597	470	95	509	30	42	48	156	15	45	10	1	1	1	41,544

TABLE B.—SHOWING THE MONTHLY INCIDENCE OF INFECTIOUS DISEASES DURING THE YEAR 1920.

Month.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	C.S. Meningitis.	Poliomyelitis.	Puerperal Septicæmia.	Influenza.	Pneumonic, Fulminant, and Septicæmic Influenza.	Pneumonia.	Measles.	Variola.	Varicella.	Unclassified Septicæmia.	Lethargic Encephalitis.	Ophthalmia Neonatorum.	Erysipelas.	Tetanus.	Hydatids.	Trachoma.	Beriberi.	Anthrax.	Actinomycosis.	Totals.
Jan.	115	186	36	104	5	2	6	1,606	..	143	68	..	..	..	3	4	9	..	4	1	..	..	..	2,292
Feb.	84	186	22	77	1	1	4	6,074	..	76	59	..	..	1	7	7	6	1	1	..	..	..	..	6,607
Mar.	93	249	40	146	6	..	10	3,930	..	98	24	..	..	..	3	3	11	..	3	4	..	..	1	4,621
April	135	289	25	84	5	17	9	5,621	..	126	23	..	5	2	5	..	24	2	3	1	..	..	..	6,376
May	152	283	33	101	6	14	10	10,013	..	137	52	19	128	11	..	9	20	2	4	..	..	..	..	10,994
June	151	277	35	96	10	7	13	2,684	..	125	115	22	88	4	2	3	19	4	3	1	..	1	..	3,660
July	131	283	45	120	5	5	14	..	138	213	729	22	103	4	2	4	16	2	5	..	..	..	..	1,841
Aug.	107	159	34	120	9	2	10	..	119	284	1,527	15	48	2	8	2	8	..	3	..	1	..	..	2,458
Sept.	88	151	36	121	11	5	12	..	101	262	..	14	47	2	4	4	16	..	1	..	..	..	..	875
Oct.	55	145	26	122	7	10	14	..	52	175	..	3	40	1	1	4	10	1	4	1	..	..	..	671
Nov.	68	118	28	97	6	4	14	..	41	158	..	..	29	2	5	4	9	..	5	..	..	..	..	588
Dec.	69	116	29	117	8	9	8	..	19	136	..	..	21	1	2	4	8	3	9	2	..	..	..	561
Totals	1,248	2,442	389	1,305	79	76	124	29,928	470	1,933	2,597	95	509	30	42	48	156	15	45	10	1	1	1	41,544

The following additional comments may be made upon these tables :—

PUERPERAL SEPTICÆMIA.

Puerperal septicæmia shows an increase in comparison with recent years. The following table gives the numbers of notifications and deaths due to this condition, and their rates per 1,000 live births, for the period 1917–20 :—

Puerperal Septicæmia in New Zealand, 1917–20.

Year.	Notifications.		Deaths.	
	Number.	Rate per 1,000 Live Births.	Number.	Rate per 1,000 Live Births.
1917	62	2·19	59	2·09
1918	76	2·94	48	1·86
1919	79	3·23	52	2·12
1920	124	4·14	67	2·24

An important feature of the year under review, and one exemplifying the increased virulence of the micro-organisms producing this disease, was the number of outbreaks in maternity hospitals. Amongst others, serious institutional epidemics in Napier, Blenheim, Palmerston North, and Christchurch were investigated by the Department, and appropriate action taken to limit the spread of the disease.

Erysipelas.—It is interesting to record that the notifications for erysipelas also show a marked increase for 1920, 156 cases of this disease being reported in the latter year, as against 73 in 1919. Various medical writers have pointed out that puerperal septicæmia, erysipelas, and rheumatic fever exhibit a similar periodicity. Certainly the New Zealand experience of 1920 confirms this statement, so far at least as puerperal septicæmia and erysipelas are concerned.

INFLUENZA.

Influenza again came into prominence in 1920, but fortunately the disease did not exhibit any marked tendency towards malignancy. An attempt was made in the early stages of the outbreak to limit its spread by means of notification, isolation, &c., but this proved useless. As a result, notification of simple influenza was discontinued in June, and the only types of the disease over which administrative control was exercised were the pneumonic, septicæmic, and fulminant varieties. As the tables show, the prevalence of these forms of influenza rapidly diminished towards the end of the year.

MEASLES.

Measles first became epidemic in Dunedin about the middle of the year, and, despite earnest attempts to limit its spread by means of notification, isolation, &c., soon spread north. When it was apparent that the disease had broken bounds, notification, &c., was discontinued.

Variola.

The source of the Otago outbreak is unknown, the first notification the Department received being that of a case at Gore on the 12th April. On investigation, however, it was discovered that cases had been occurring in Dunedin for some two months before this date. Ninety-five cases in all were notified—sixty from Otago, thirty from Southland, and five from Ashburton. The latter group of cases were attributable to infection from a school-teacher, who had been in contact with a case in Invercargill before its notification, and who had then returned to Ashburton unknown to the Department.

The disease was the type of smallpox known as "alastrim," and was apparently identical with the disease which was prevalent in New Zealand and Australia in 1913.

The precautions taken included the removal of cases and suspects to isolation hospital; the vaccination of contacts, with daily surveillance for fifteen days thereafter; the removal to isolation hospital of contacts who refused vaccination or who were otherwise deemed better in isolation; the very complete disinfection of all personal belongings of cases and of the contents of infected houses; and, lastly, a very active campaign of vaccination.

The efficiency of vaccination was shown in a most striking manner. Of the cases notified from Otago only eighteen had been vaccinated at any time in their lives, and in not one of these cases, owing to the lapse of time, could it be regarded that any protection was present. Again, only two contacts who were vaccinated developed smallpox, and their history suggests that they were incubating the disease at the time of the procedure. The disease was very mild in type and no fatalities resulted.

Anthrax.

One case of this disease, with fatal issue, was reported in 1920, but as no bacteriological examination was made the diagnosis remains in doubt.

Action was taken during the year to prohibit the importation of Japanese shaving-brushes, which, as the experience of other countries has shown, constitute so potent a source of danger.

SECTION 3—NON-NOTIFIABLE DISEASES.

Whooping-cough.

Whooping-cough was epidemic during the year in close association with mumps and measles. The formidable nature of whooping-cough, especially in infancy, is shown by the fact that a total of 107 deaths, fifty-seven of which occurred in children under one year, were attributable to this cause in 1920.

Cancer.

The following table, taken from the New Zealand Official Year-book, shows the cancer death-rate in the Dominion for the last ten years:—

Number of Persons who died from Cancer, the Proportion per 10,000 Persons living, and the Percentage of all Deaths, 1911–20.

Year.	Deaths from Cancer.	Total Deaths: All Causes.	Deaths from Cancer per 10,000 of Living Persons.	Deaths from Cancer per 100 of all Deaths.
1911	809	9,534	7·97	8·49
1912	812	9,214	7·82	8·81
1913	856	10,119	8·01	8·46
1914	904	10,148	8·29	8·91
1915	900	9,965	8·19	9·03
1916	909	10,596	8·27	8·50
1917	957	10,528	8·71	9·09
1918	936	16,364	8·49	5·72
1919	1,031	10,808	9·07	9·54
1920	1,029	12,109	8·72	8·50

In a special article published in the Year-book for 1917, the Chief Compiler, Census and Statistics Office, points out that the rising cancer death-rate in the Dominion is very largely accounted for by alterations in the age and sex constitution of the population, and by increased accuracy in diagnosis and in certification of the cause of death.

Venereal Disease.

Early in 1919 a scheme was brought into operation for the dual purposes of providing for the "carry-on" treatment of men who had contracted syphilis on active service, and also generally of fulfilling the objects of the Social Hygiene Act, 1917.

The treatment of soldier syphilitics was regarded as a matter of prime importance, inasmuch as it was recognized that these men, although having had their initial course, could by no means be classed as free from contagion. Accordingly the medical history of every man who was known to have been infected while overseas was obtained and recorded. Clinics were established in each of the four centres under the control of full-time medical officers who had acquired special knowledge and experience in England of the treatment of venereal disease. Trained orderlies, ex N.Z.M.C. men, were also attached to each clinic. Soldiers known to have been infected with syphilis were instructed to report at these clinics for examination and treatment. Where, on account of remoteness, &c., the patient could not readily attend, other arrangements were made. Thus an agreement was entered into with the various Hospital Boards throughout the Dominion for the treatment of these men in the district hospitals, while in the absence of local institutions of this nature the patient was authorized to apply to the nearest medical practitioner.

That the scheme justified itself is proved by the fact that three hundred men have been certified as cured, and as many more are at present having no treatment but observations and blood-tests prior to discharge. From the beginning civilian cases have been encouraged to attend the clinics, and now the percentage of men attending these institutions who contracted their disease on active service is very small. It is particularly satisfactory to note that female patients are displaying no diffidence about coming forward for treatment.

Some time ago posters were placed in the railway lavatories, &c., containing advice to sufferers from venereal disease, and instructing them to report to the nearest clinic. These have done so much to bring about publicity that the same posters have been supplied to the civic authorities with a view to their being exhibited in the lavatories of the main centres.

Indigent cases in any part of New Zealand, other than the four main centres, it should be noted, may also obtain free treatment either at the local hospital, or, where there is no such institution within reasonable radius, from the nearest practitioner. The vast majority of the cases, however, are to be found in the four centres.

The following table shows in concise form the details of the work carried out in the main clinics during the past year:—

Work carried out in the Venereal Clinics during 1920.

—	Auckland.		Wellington.		Christchurch.		Dunedin.		Total.	
Number of persons dealt with at or in connection with the out-patient clinic for the first time and found to be suffering from—	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Syphilis	174	30	93	34	60	25	54	13	381	102
Soft sore	10	..	1	..	8	..	..	..	19	..
Gonorrhœa	81	8	190	18	120	32	37	..	428	58
No V.D.	59	10	40	10	20	10	6	2	125	32
Total attendances of all persons at the out-patient clinic who were suffering from—										
Syphilis	1,875	462	1,388	448	786	450	816	143	4,865	1,503
Soft sore	100	..	6	..	110	..	..	..	216	..
Gonorrhœa	4,072	95	13,436	180	2,132	245	465	..	20,105	520
No V.D.	134	26	40	10	186	98	6	2	366	136
Aggregate number of persons of "in-patients' days" of treatment given to persons suffering from										
Syphilis	Nil	..	1,624	..	232	80	74	55	1,930	35
Gonorrhœa	Nil	..	3,024	77	460	216	66	..	3,550	293
Number of doses of salvarsan substitutes given	1,246	295	664	228	406	248	429	104	2,745	875
Examination of pathological material: Specimens from persons attending at treatment centre which were examined at this centre for—										
Detection of spirochætes	5	..	16	..	10	..	..	..	31	..
Detection of gonococci	400	50	390	122	300	60	37	..	1,127	232
Wassermann reaction	394	70	337	92	326	101	130	13	1,187	276
Others	10	..	12	..	30	25	..	..	52	25

Wellington, it should be added, has a special ward which will accommodate some twenty in-patients, and it is hoped to have similar wards in each of the remaining centres at no distant date. Attached to each clinic, however, are examination-rooms and irrigation-rooms. The special ward in Wellington accounts to a certain extent for the greater number of cases that are treated here in comparison with other centres, although the principal reason is doubtless the large floating population, composed especially of seamen.

SECTION 4.—BACTERIOLOGICAL LABORATORIES.

The following table shows the work of a public-health nature performed in the Bacteriological Laboratories at Auckland, Napier, Wellington, Christchurch, Dunedin, and Invercargill during the year ended 31st December, 1920 :—

Disease.	Number of Examinations.											
	Positive.						Negative.					
	Auckland.	Napier.	Wellington.	Christchurch.	Dunedin.	Invercargill.	Auckland.	Napier.	Wellington.	Christchurch.	Dunedin.	Invercargill.
Diphtheria diagnosis	311	47	564	225	231	39	823	190	2,466	922	1,355	143
,, clearance	121	81	..	703	316	176	192	108	..	2,612	672	138
,, contacts	..	..	..	52	..	28	..	..	..	650	..	89
Tuberculosis, pulmonary	133	85	260	65	146	40	768	236	932	473	595	174
,, cerebro-spinal	2	4	1	..	2	2	32	8	7	13	38	7
,, genito-urinary	4	18	10	14	7	2	36	71	57	219	52	18
,, other lesions	2	10	9	3	4	..	13	17	41	40	13	4
Typhoid-fever diagnosis: Agglutination reaction	43	23	45	24	10	2	122	96	175	67	22	10
Typhoid-fever diagnosis. Blood culture	..	..	..	6	3	..	26	..	1	7	2	2
,, clearance	..	..	..	1	..	..	2	..	..	22	3	..
,, fæces	2	12	..	3	1	..	74	26	36	82	25	1
,, urine	3	3	..	7	2	..	24	9	48	56	10	1
Pneumococcal meningitis	3	2	4	2	..	..	25	2	2	1	..	..
Meningococcal ,,	6	..	21	6	8	..	30	15	50	32	6	10
Influenzal ,,	1	..	..	..	..	..	..	..	..	..	..	..
Meningococcal carriers (diagnosis)	..	..	..	..	..	..	..	3	14	7	7	2
,, ,, (clearance)	..	..	..	..	..	..	..	..	..	..	..	..
,, contacts	..	..	..	..	..	..	..	..	..	20	..	1
Gonorrhœa	89	41	332	129	15	11	280	116	368	271	40	21
Gonococcal ophthalmia	3	1	6	1	1	1	2	5	5	8	..	1
Syphilis, spirochæte	2	2	3	..	1	..	7	6	12	3	6	..
,, Wassermann reaction	461*	..	757†	238‡	163§	..	928	..	1,142	589	351	..
Hydatid disease—												
Pulmonary	..	..	1	..	..	..	..	2	..	7	2	1
Liver	..	..	..	..	..	..	..	1	..	..	..	..
Sputum and pus	..	..	..	5	..	..	..	1	..	25	..	..
Pleural	..	..	..	..	..	..	..	4	..	..	..	..
Lung	..	3	..	..	..	..	..	4	..	..	..	..
Others	..	..	..	..	..	1	..	2	2	..	..	1
Other diseases—												
Vincent's angina	2	7	46	7	..	1	..	1	43	9	..	2
Influenza sputum	2	13	..	45	27	2	..	6	..	27	2	..
Anœbic dysentery	..	..	..	..	..	..	..	2	5	..	..	..
Malaria	..	..	..	..	..	..	..	6	2	..	..	..
Puerperal septicæmia	..	2	..	..	..	..	..	15	..	..	..	..
Leprosy	1	..	..	..	..	..	2	2	1	2	..	..
Anthrax	..	..	..	..	..	..	..	2	1	..	..	..
Ringworm	..	..	1	..	..	..	..	..	1	1	..	1
Cysticercus celluosæ (rabbit)	1	..	..	..	..	..	..	..	..	..	..	..
Bilharzia hæmatobium	..	..	..	..	..	..	..	..	1	..	..	..
Lethargic encephalitis	..	1	..	..	..	..	..	..	..	..	..	..
Pneumococcus sputa	1	6	..	..	..	2	3	..	..	..	..	..
Malignant œdema	..	..	..	..	..	..	..	..	1	..	..	..
Tetanus	..	..	..	..	..	1	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	1	..	..	..
Conjunctival diphtheria	..	..	1	..	..	..	..	..	..	..	..	..
Empyæmia	..	3	..	..	..	..	..	..	..	..	..	..
Actinomycosis	..	..	..	..	..	..	..	1	..	..	..	..
Ærongenes capsulatis	..	..	..	..	..	..	..	1	..	..	..	..
Fæces for parasites and ova	..	..	..	..	..	..	..	..	2	..	..	..
Cerebro-spinal fluid	..	1	..	..	..	..	..	..	..	..	..	1
Plague (smears from rats)	..	..	..	..	..	..	4,781	..	..	..	..	..

* 65 weakly positive or doubtful. † 349 weakly positive or doubtful. ‡ 45 weakly positive or doubtful. § 33 weakly positive or doubtful.

NOTE.—This report represents only part of the work performed at the above laboratories. It does not include instructional work, investigations, or reports on specimens other than those of a public-health nature.

SECTION 5.—SALE OF FOOD AND DRUGS ACT, 1908.

The following tables enable a rapid survey to be made of the activities of the Department in the direction of ensuring compliance with the above Act. The corresponding figures for 1919 are supplied for the purposes of comparison :—

SAMPLES OF MILK TAKEN AND DEALT WITH DURING THE YEAR ENDED 31ST DECEMBER, 1920.

[The column "Number of Prosecutions" means the number approved, whether legal proceedings have been taken or not. It will thus not necessarily agree with the number in the return of legal proceedings.]

Hospital District.	Samples taken.		Samples complying.		Samples not complying.			
	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Warnings issued.	Number of Prosecutions recommended.
Kaipara	2	2	2	2	..	..	..	..
Whangarei	37	27	32	23	5	4	..	4
Auckland	245	142	238	138	7	4	1	3
Waikato	28	28	27	27	1	1	..	1
Bay of Plenty ..	7	7	6	6	1	1	..	1
Taumarunui ..	11	11	10	10	1	1	..	1
Waiapu	2	2	2	2	..	..	..	..
Cook	53	53	49	49	4	4	1	3
Wairoa	3	3	3	3	..	..	..	..
Hawke's Bay ..	114	113	104	104	10	9	2	7
Taranaki	22	21	19	19	3	2	..	2
Stratford	3	3	2	2	1	1	..	1
Hawera	15	14	12	11	3	3	..	3
Patea	3	3	3	3	..	..	..	..
Wanganui	29	28	25	24	4	4	..	4
Waipawa	21	21	15	15	6	6	2	4
Palmerston North ..	32	31	27	27	5	5	1	4
Wellington	1,589	1,313	1,541	1,279	48	40	24	16
Wairarapa	12	11	12	11	..	..	..	..
Wairau	6	6	6	6	..	..	..	..
Nelson	21	17	14	12	7	5	..	5
Westland	5	4	4	3	1	1	..	1
Buller	5	3	5	3	..	..	..	..
North Canterbury ..	172	130	134	98	38	34	18	16
Ashburton	12	10	8	7	4	3	3	..
South Canterbury ..	3	3	3	3	..	..	..	..
Waitaki	32	32	28	28	4	4	2	2
Otago	93	93	87	87	6	6	3	3
Vincent	4	4	4	4	..	..	..	..
Southland	15	15	14	14	1	1	1	..
Totals, 1920	2,596	2,150	2,436	2,017	160	139	58	81
„ 1919	2,135	1,873	1,980	1,684	152	126	52	63

SAMPLES OF OTHER FOODSTUFS TAKEN AND DEALT WITH DURING THE YEAR ENDED 31ST DECEMBER, 1920.

[The column "Number of Prosecutions" means the number approved, whether legal proceedings have bee taken or not. It will thus not necessarily agree with the number in the return of legal proceedings.]

Hospital District.	Samples taken.		Samples complying.		Samples not complying.			
	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Warnings issued.	Number of Prosecutions recommended.
Kaipara	3	3	1	1	2	2	1	1
Whangarei	15	14	3	3	12	11	4	7
Auckland	43	43	35	35	8	8	2	6
Waikato	3	3	2	2	1	1	..	1
Thames	13	13	11	11	2	2	..	2
Tauranga	17	5	17	5	..	..	..	..
Taumarunui ..	10	10	10	10	..	..	..	..
Waiapu	51	12	51	14	..	..	..	..
Cook	72	9	69	7	3	2	2	..
Wairoa	35	7	35	7	..	..	..	..
Hawke's Bay ..	38	37	34	33	4	4	4	..
Taranaki	2	2	2	2	..	..	..	..
Hawera	17	17	13	13	4	4	..	4
Patea	2	2	2	2	..	..	..	..
Wanganui	13	13	9	9	4	4	..	4
Waipawa	3	3	3	3	..	..	..	..
Palmerston North ..	3	3	3	3	..	..	..	..
Wellington	34	34	28	28	6	6	3	3
Wairau	8	8	5	5	3	3	2	1
Westland	4	4	3	3	1	1	..	1
Buller	2	2	2	2	..	..	..	..
North Canterbury ..	145	67	102	55	43	18	10	8
Ashburton	5	4	5	4	..	..	..	..
South Canterbury ..	3	3	3	3	..	..	..	..
Waitaki	26	26	21	21	5	5	5	..
Otago	48	48	48	48	..	..	..	..
Vincent	5	5	5	5	..	..	..	..
Maniototo	12	9	12	9	..	..	..	..
Southland	27	27	27	27	..	..	..	..
Totals, 1920	659	435	561	370	98	71	33	38
„ 1919	354	314	239	216	115	100	67	31

WEIGHING OF FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1920.

Hospital District.	Bread.							
	Samples weighed.		Samples complying.		Samples not complying.			
	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Warnings issued.	Number of Prosecutions recommended.
Kaipara	85	16	61	14	24	3	..	2
Whangarei	187	25	122	21	65	14	6	5
Auckland	733	75	499	59	234	47	3	18
Waikato	310	35	247	34	63	11	..	2
Thames	183	18	152	17	31	6	..	4
Tauranga	123	12	65	10	58	11	4	2
Bay of Plenty ..	172	15	116	15	56	8	2	2
Taumarunui ..	223	24	214	24	9	2	..	1
Waiapu	30	3	30	3	..	..	..	..
Cook	193	25	181	22	12	5	3	..
Wairoa	67	10	67	10	..	..	..	..
Hawke's Bay ..	284	39	265	38	19	5	3	2
Taranaki	19	19	18	18	1	1	..	1
Stratford	6	6	6	6	..	..	..	..
Hawera	74	30	64	29	10	1	1	..
Patea	1	1	1	1	..	..	..	..
Wanganui	34	34	28	28	6	6	1	5
Waipawa	12	12	12	12	..	..	..	..
Palmerston North ..	18	18	13	13	5	5	2	3
Wellington	50	41	40	31	10	10	6	4
Wairarapa	59	43	54	38	5	5	3	2
Wairau	3	3	3	3	..	..	..	..
Nelson	43	30	42	29	1	1	1	..
Westland	143	13	127	12	16	4	3	1
North Canterbury ..	308	30	220	25	88	18	12	6
Ashburton	1	1	..	..	1	1	1	..
South Canterbury ..	38	2	38	2	..	..	..	..
Waitaki	202	21	167	21	35	7	7	..
Otago	478	54	472	53	5	3	3	..
Vincent	13	3	11	3	2	2	2	..
Maniototo	9	1	9	1	..	..	..	..
Southland	36	4	36	4	..	..	..	..
Totals, 1920	4,136	663	3,380	596	756	176	63	60
,, 1919	3,197	505	2,817	474	380	100	33	22

WEIGHING OF FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1920.

Hospital District.	Butter.							
	Samples weighed.		Samples complying.		Samples not complying.			
	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Warnings issued.	Number of Prosecutions recommended.
Kaipara	16	6	16	6	..	..	..	..
Whangarei	18	7	16	7	2	1	..	..
Auckland	201	19	169	17	32	6	..	..
Waikato	1,010	56	920	55	90	11	2	1
Tauranga	280	19	211	19	69	10	3	3
Bay of Plenty ..	31	3	20	3	11	3	2	..
Taumarunui	255	18	191	14	64	9	..	..
Waiapu	223	19	223	19	..	..	..	..
Cook	108	17	108	17	..	..	..	..
Wairoa	17	2	17	2	..	..	..	..
Hawke's Bay ..	479	61	410	58	69	3	2	1
Taranaki	11	11	11	11	..	..	..	..
Stratford	10	7	8	6	2	1	1	..
Hawera	97	32	78	29	19	3	1	2
Patea	1	1	1	1	..	..	..	..
Wanganui	28	28	26	26	2	2	1	1
Waipawa	10	10	9	9	1	1	..	1
Palmerston North ..	5	5	5	5	..	..	..	..
Wellington	77	25	76	24	1	1	1	..
Wairarapa	95	47	93	45	2	2	..	2
Wairau	5	5	5	5	..	..	..	..
Nelson	6	6	5	5	1	1	1	..
Westland	114	30	101	27	13	6	5	1
North Canterbury ..	23	18	17	14	6	6	3	3
South Canterbury ..	213	10	196	9	17	1	1	..
Waitaki	68	8	68	8	..	..	..	..
Otago	98	14	98	14	..	..	..	..
Totals, 1920	3,499	484	3,098	455	401	67	23	15
,, 1919	1,579	273	1,544	266	35	11	7	1

WEIGHING OF FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1920.

Hospital District.	Other Foodstuffs.							
	Samples weighed.		Samples complying.		Samples not complying.			
	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Samples.	Number of Vendors.	Number of Warnings issued.	Number of Prosecutions recommended.
Kaipara	6	1	6	1	..	..	..	..
Whangarei	94	11	91	11	3	2	2	..
Auckland	108	12	86	10	22	4	3	1
Waikato	127	15	127	15	..	..	..	..
Tauranga	108	10	99	10	9	3	3	..
Bay of Plenty ..	1	1	1	1	..	..	..	..
Taumarunui ..	18	3	12	2	6	1	1	..
Waiapu	76	21	76	21	..	..	..	..
Cook	13	5	13	5	..	..	..	..
Hawke's Bay ..	176	31	168	28	8	3	2	1
Palmerston North ..	1	1	..	..	1	1	..	1
Waitaki	2	2	2	2	..	..	..	..
Otago	66	5	66	5	..	..	..	..
Vincent	10	1	10	1	..	..	..	..
Totals, 1920	806	119	757	112	49	14	11	3
„ 1919	527	133	492	127	35	9	9	..

INSPECTIONS DURING THE YEAR ENDED 31ST DECEMBER, 1920.

Hospital District.	Number of Instances Articles were "seized" or "destroyed."	Number of Premises* inspected engaged in manufacturing or selling Foodstuffs.	Number of such Premises requiring Action *re* Sanitary Defects.	Hospital District.	Number of Instances Articles were "seized" or "destroyed."	Number of Premises* inspected engaged in manufacturing or selling Foodstuffs.	Number of such Premises requiring Action *re* Sanitary Defects.
Bay of Islands ..	1	21	10	Wellington	25	299	11
Kaipara	..	225	90	Wairarapa	11	498	39
Whangarei	7	650	129	Wairau	5	268	15
Auckland	36	490	76	Picton	..	56	1
Waikato	24	1,591	88	Nelson	13	181	5
Thames	1	886	171	Westland	35	97	10
Tauranga	8	486	12	Buller	..	314	13
Bay of Plenty ..	..	163	13	Grey	3	268	4
Taumarunui ..	1	488	40	North Canterbury ..	152	578	35
Waiapu	..	264	3	Ashburton	12	190	10
Cook	7	193	9	South Canterbury ..	..	81	2
Wairoa	5	110	14	Waitaki	14	154	4
Hawke's Bay ..	19	427	31	Otago	15	314	34
Taranaki	2	680	..	Vincent	..	40	1
Stratford	..	26	3	Maniototo	..	12	2
Hawera	6	106	10	Southland	1	206	10
Patea	..	19	1	Wallace and Fiord ..	..	18	..
Wanganui	18	274	7				
Waipawa	50	140	11	Totals, 1920	506	11,077	933
Palmerston North ..	35	264	29	„ 1919	125	11,890	657

* Not number of inspections.

SECTION 6.—ADMINISTRATION.

During the year two new health districts were formed—(1) the Hawke's Bay District, opened on the 1st January, 1920, under the charge of Dr. Mercer, with headquarters at Napier; and (2) the Wanganui-Taranaki District, opened on the 1st July, 1920, under the control of Dr. Monk, with headquarters at Wanganui. Both these areas had formerly been included in the Wellington Health District. Two additional bacteriological laboratories were also established—one at the Gisborne, the other at the Palmerston North Public Hospital. The effect of these changes will undoubtedly be in the direction of vastly improved efficiency.

An important venture was embarked upon during the year by the Head Office of the Department undertaking the storage and distribution of biological products. The object in view was to provide fresh serum at a reasonable cost for the public hospitals of the Dominion. The scheme has proved most successful; the Department by buying in large quantities obtains liberal discounts, and is able, moreover, to reduce to a minimum the accumulation of time-expired serum, with its consequent loss. The great majority of the Hospital Boards have been glad to avail themselves of the Department's operations, and, judging by the absence of complaints, are well satisfied with the system. Certainly a very real economy has been effected by this means.

The usual routine work of the Department was carried out during the year in the direction of supervision of water-supplies and drainage-disposal schemes, inspection of buildings with a view to serving notices for demolition or repairs, inspection of hotels, abatement of nuisances, &c. It is satisfactory to record that steady progress is being made in the general sanitation of the Dominion.

M. H. WATT,
Director, Division of Public Hygiene.

PART III.—HOSPITALS.

SECTION 1.—CO-ORDINATION.

I commenced my duties as Inspector of Hospitals on the 2nd February, 1920, and since then have inspected all the larger and (with few exceptions) all the smaller hospitals in New Zealand. As a result of this survey certain aspects of hospital work stand out as requiring special mention and consideration, in order that existing weaknesses and defects may be remedied and the many excellent features of hospital work generally in this country strengthened.

(1.) Importance of better co-ordination of hospitals in order that more efficient treatment may be secured for certain classes of case, both medical and surgical.

At the present time many of the smaller and medium-sized hospitals are too self-contained, and many difficulties exist regarding the transference of certain classes of case to the larger hospitals for treatment. This should be a recognized procedure, and hospitals ought to be properly grouped together for this purpose. The existing multiplicity of Hospital Boards tends to prevent proper grouping, but I think that a well-carried-out scheme of affiliation would overcome many present difficulties.

To procure thoroughly efficient medical, surgical, and other treatment calls for a trained organized staff to deal with the problem, such as can only be developed and maintained in the larger centres. The following opinion has been expressed by a competent authority:—

"No single person can any longer hope to attain to equal skill in the use of the many instruments and procedures of diagnosis. And the same may be said of the complexity of modern therapeutic technique. No general practitioner, no surgeon, no physician, can any longer unaided give to patients the benefits that they can in the more obscure cases derive, and have a right to expect, from his efforts when combined with the properly co-ordinated (and subordinated) activities of a group of adequately trained medical and surgical specialists."

To secure to the community the benefits of treatment as described must be one of our aims. To enable it to be accomplished certain hospitals must be classed as base hospitals, their special departments strengthened, and the affiliated hospitals given the right to arrange for the transfer of cases of certain classes of disease to these base hospitals.

To enable this essential undertaking to be accomplished two matters must be arranged, the first being that approved base hospitals must be given an additional subsidy to enable them to develop and maintain their special departments at the highest possible pitch of perfection, and the second being the creation of machinery whereby the transference of patients to base hospitals can be easily and expeditiously carried out. In this connection the various classes of case for whom transference is advisable or necessary should be definitely outlined, this being a matter which might be dealt with at a conference of Medical Superintendents of Hospitals, which I trust will be held in the near future.

SECTION 2.—HOSPITAL STANDARDS.

(2.) Necessity for better organization of honorary and other staffs of hospitals on the lines of the minimum standard.

It cannot be said at the present time that the honorary staffs of our hospitals, with rare exceptions, are organized as effectively as they should be, and the lessons which have been learnt in Canada and America as the result of the adoption of the policy of the minimum standard should be applied in this country.

"The minimum standard is a constructive plan for hospital betterment. Its adoption safeguards the care of every patient admitted to the hospitals by insistence upon competence upon the part of the medical practitioner, upon through study of cases, upon efficient laboratory and special department work, and upon periodic monthly revision of the work of the hospital by the staff. It fixes responsibility throughout the hospital. It encourages and even compels research. It costs effort rather than money. It defines the minimum service to the patient, which beyond all debate is essential."

At the present time the "minimum standard" has not been definitely adopted in any New Zealand hospital. Of its results in North America there can be no doubt, and I feel sure that New Zealand would benefit equally well by its introduction. Apart from its value to hospitals with honorary staffs, it should be equally useful to hospitals with full-time staffs only, who would inevitably derive benefit from regular monthly meetings at which the work of the hospital in all departments would come up for revision and criticism. Even now in this country the honorary staffs of one or two hospitals are not sufficiently well organized to provide for the separation of the work of the physician from that of the surgeon.

SECTION 3.—DEPARTMENTS.

(3.) Need for strengthening and developing the special departments of hospitals.

This necessity is a very real one, not only in our largest but also in many of our smaller hospitals. Some special departments are as necessary in our medium-sized hospitals as they are in the large base hospitals, but, of course, need not be of the same size or as fully developed. Taking these departments seriatim—

(*a.*) Records Department.

The records kept of individual patients throughout New Zealand, with few exceptions, are at present unsatisfactory, and much remains to be done to place this matter on a sound basis. The importance of these records to patients and staff alike cannot be overestimated. Upon their nature can be based a very accurate opinion of the thoroughness of the professional work of any hospital.

Records, however, when kept, should be used if their value is to be made evident, and it is only by the institution of regular monthly meetings of the staffs of hospitals at which the professional work of the hospital is revised and considered, when the production of information compiled from accurate records takes place, that advance and reform in the desired direction will take place. Hospital Boards should realize that clerical assistance and the provision of a record-room are alike essential to help in the work, for it is only by the production of what may be termed periodic professional balance-sheets that the exact nature of the professional work done in a hospital can be realized, its degree of efficiency ascertained, and progrees made towards that degree of perfection which it is hoped to obtain. It is in association with the hospitals record department that a " follow-up " system can be instituted by which patients are kept in touch with, the real or eventual results of treatment ascertained, and proper progress made. Thousands of operations are being done yearly in our hospitals with, thanks to advances in surgical and nursing technique, a low mortality rate. The patients leave hospital and are in very many cases lost sight of. The ultimate results of certain classes of operation — *e.g.*, radical cure of inguinal hernia, appendicectomy, operations for cancer of breast, colon, uterus, and removal of enlarged prostate, &c.—are not systematically and accurately ascertained, as they should be, six months, one year, two and three years subsequent to operation, and until information of this kind is forthcoming and made periodically available it is difficult to see how we can ascertain properly the value of the work which is being done.

(*b.*) Clinical Laboratory.

On the importance of the work done in this department of the professional life of a hospital there is no need to dwell, and one of the best moves made by the Health Department in recent years has been the establishment of clinical laboratories with specially trained men in charge at hospitals such as those at Invercargill, Napier, Gisborne, and Palmerston North. Of the stimulating effects of these laboratories there can be no doubt, and steps are being taken to establish them at the Waikato and Whangarei Hospitals. The following hospitals will, I consider, require them as well: New Plymouth, Wanganui, Thames, Greymouth, Timaru, and Nelson. It is difficult to overestimate the value of these laboratories, not only in the maintenance of a high standard of work, particularly on the medical side of a hospital, but also to the medical men engaged in private practice in hospital districts where laboratories have been established.

(*c.*) X-ray Departments.

The general standard of X-ray work is poor in the majority of our hospitals, and in my opinion this is due to the following causes:—

(1.) The initial equipment installed has not been kept up to date by suitable additions of fresh apparatus. Many Boards must be made to realize that an X-ray department once established must necessarily be the cause of regularly recurring annual expenditure if results worth having are to be obtained.

(2.) In many cases the apparatus is looked after and worked by a busy Medical Superintendent who, with the best will in the world, cannot devote the time to the work which it requires. In other cases too many people have access to the apparatus, the responsibility for which should be a one-man job. X-ray work, like many other branches of medical activity, is a special branch of work, and to procure first-class and reliable results requires the services of personnel with special training and experience.

(3.) Insufficient number of X-ray technicians.

I consider that what is required very urgently in all New Zealand hospitals in which satisfactory X-ray plants have been installed is the services of trained laymen, such as is the case in many hospitals in Great Britain, where these men are known as " radiographers," to distinguish them from the trained medical specialist who is known as a " radiologist." I suggest that efforts be made to secure and train a number of suitable men as radiographers to occupy positions in hospitals analogous to that occupied by assistant bacteriologists. It should be possible to train these men at some of our largest hospitals, and at the same time provide for necessary theoretical training in physics, electricity, &c., at the local University college. The services of these men would also be required at hospitals where radiologists are on the staff. Even if only half a dozen were trained to commence with, I am satisfied that a very definite advance would be made towards achieving a higher general level of X-ray work than is the case at present.

(*d.*) Physio-therapeutic Department.

The value of the work accomplished in this department of a hospital is to be felt in every aspect of the institution's professional work, and more especially in the treatment of injuries of all kinds. Even yet, however, the value of the work of a physio-therapeutic department in securing efficient restoration of function after injuries is not appreciated sufficiently, and much remains to be done to place this matter on a sound basis.

To secure the best results the physio-therapeutic departments in our largest hospitals will require the services of a trained medical man, who will be able to co-ordinate the whole of the work of his department with the rest of the activities of the hospital in question. This is being done at present with excellent results at both Dunedin and Christchurch, Fortunately the services of many masseurs and masseuses who were trained during the late war are now available for our hospitals, and they are gradually being utilized for this purpose.

(*e.*) Orthopædic Departments.

These departments, on account of the special equipment and trained staff they require, will be difficult to establish save in our largest hospitals. They are, in comparison with other special professional departments in a hospital, expensive, and also require a constant supply of cases to enable them to keep in efficient running-order. Under these circumstances it is difficult at present to see how they can be established save at the four centres. This will take time, and to enable an efficient orthopædic service to be placed at the disposal of the smaller Hospital Boards it is hoped that King George V Military Hospital, Rotorua, at which hospital efficient special departments exist, will be made available for this purpose as its military activities diminish. At the present time upwards of seventy crippled children, suffering chiefly from the effects of infantile paralysis, are receiving treatment at Rotorua, with excellent results. Allusion, however, is made to this work elsewhere.

SECTION 4.—SUPPLIES AND CONSTRUCTION.

(4.) Necessity for developing better stores systems, more economical purchasing of supplies, and in general for procuring hospital economies.

More systematized attention will in future be necessary in connection with the stores systems of many of our hospitals. At present the following are some of the main defects:—

(*a.*) The stores are not centralized enough, and different sections are accommodated in widely separated portions of the building.

(*b.*) Issue stores are not separated sufficiently from bulk stores.

(*c.*) Trained house stewards are not at present available in sufficient numbers for the work in hand.

(*d.*) Insufficient use is being made of buying in bulk.

(*e.*) Too much buying from local retailers is indulged in.

(*f.*) So far as medical stores are concerned, not enough use is made by some hospitals of their opportunities of buying from Defence Medical Stores.

No hospital in New Zealand makes systematic use of what are known as comparative returns, whereby information concerning the quantities and costs of the main articles consumed or used in a hospital are regularly supplied to all the staff responsible for their consumption or use in such a way that every one responsible is made to realize his or her position so far as either extravagance or economy is concerned. In many hospitals co-operation between the purchasing and the consuming departments is not nearly close enough, and without very close and real co-operative activities on the part of these departments real and permanent economies will be difficult to obtain.

From what I have seen I am satisfied that the appointment of an Inspecting House Steward recently made should be productive of much good and of permanent economies in the stores systems of our hospitals.

(5.) Need for employment of "dietitians."

That there is room in many New Zealand hospitals for the employment of what the American authorities term a "dietitian" there can be no doubt. The introduction of exact knowledge and scientific methods into many of our hospital kitchens will certainly minimize waste, increase variety of diet, and conduce to economy. In this connection it is to be hoped that the School of Domestic Science in Dunedin will be able to afford facilities not only for training dietitians, but, by arranging courses of lecture demonstrations for Matrons of hospitals and others interested in the work, cause as wide an appreciation as possible of the importance of the reforms which can be effected.

(6.) Necessity in hospital-planning for having always available first-class engineering advice.

The predicaments in which certain hospitals have found themselves during the past year emphasizes the necessity for closer co-operation in the future between architect and engineer when hospitals are to be built or added to. The appointment of a Consulting Engineer to the Department has proved itself, especially during the past year, to have been one of the utmost value, and his work will have the effect of preventing in the future the errors of the past from which, unfortunately, many hospitals are suffering at present.

SECTION 5.—CRIPPLED CHILDREN.

Treatment of Crippled Children.

During the past year the Department, with the co-operation of the Defence Department, made a start with the treatment of crippled children, for whom in the past it has not been possible to do much effective work. The children have been admitted to the Military Hospitals at Rotorua and Trentham, where at present 120 are receiving treatment, and where, in addition to orthopædic treatment, they are also provided with educational facilities in special schools, which have been commenced by the Education Department at both places.

The children affected have been got in touch with by means principally of the various School Medical Officers. Many of the children had had no effective treatment for years, others none at all, and a great number were suffering not only from physical defects but from lack of education. At present it is impossible for the vast majority of hospitals in New Zealand to undertake this treatment effectively, for two chief reasons:—

(*a.*) Lack of the necessary special departments and trained personnel for these departments—the departments in question being (1) physio-therapeutic, (2) plaster, (3) special splint and apparatus making:

(*b.*) Inability to provide the necessary number of beds to deal with cases which from the nature of their treatment require to be in hospital for very lengthy periods of time.

At present the Christchurch and Dunedin Hospitals are dealing with the crippled children of their own districts, and effectively so, and it is hoped that in the near future it will be possible for Auckland and Wellington to follow suit. To enable affected children from other districts to procure effective treatment it is intended to concentrate on King George V Hospital, Rotorua, and make it mainly an orthopædic hospital to which admission can be secured from any district in New Zealand. The results of the treatment so far have been most encouraging, and of the value of the work done by the staffs of the hospitals at Rotorua and Trentham there can be no doubt. It must be emphasized that operative measures alone for the treatment of deformities are futile in very many cases unless they can be followed by effective after-treatment and close supervision of that treatment by a skilled staff. In other words, group or team work is essential for success. This can now be provided, thanks to the development of special orthopædic work during the late war, and we are fortunate in being able to avail ourselves of the services thus provided.

SECTION 6.—INSTITUTIONS.

Health Department's Institutions.

(i.) *Sanatoria.*

The Otaki Sanatorium, accommodating women only, has been well utilized during the past year, and has now an average number of thirty-eight patients under treatment. The presence of a whole-time Medical Superintendent has been of the utmost value in securing results and in improving the nature of the work done at this institution.

Te Waikato Sanatorium has been kept reasonably well occupied. In accordance, however, with the decision arrived at during the past year, the patients at this sanatorium will be transferred to the Pukeora Sanatorium, Waipukurau, as soon as the extra accommodation which has been authorized there is available for occupation. As soon as this can be done Te Waikato Sanatorium will be closed.

(ii.) *Hospitals.*

Otaki Hospital: This has been well occupied during the past year, and has done useful work.

Isolation and Cottage Hospitals, Rotorua: Visited on several occasions. Many improvements have been carried out at the Isolation Hospital, and both hospitals have done good service.

St. Helens Hospitals: The statistics relating to these hospitals are published elsewhere. The erection of the new St. Helens Hospital at Auckland has been commenced, and during the year a new St. Helens Hospital at Wanganui has been opened, thanks to a gift of house and site by Mr. Hope Gibbons. The building of the new St. Helens Hospital, Christchurch, has unfortunately been postponed, though badly required.

The sterilizing plants at these hospitals require adding to in order to bring them up to present-day requirements, and this is being done.

D. S. Wylie,
Director, Division of Hospitals.

PART IV.—NURSING.

SECTION 1.—NURSES REGISTRATION ACT.

Examinations were held under the Nurses Registration Act in June, 1920, and December, 1920. 241 candidates presented themselves for the examination, 212 of whom were successful, and their names are now on the State register. Sixty-six nurses from overseas have been registered.

The regulations for the registration of nurses under the three Acts for England, Wales, Scotland, and Ireland passed in December, 1919, are still awaited, and therefore applications from nurses arriving from various parts of Great Britian have to be considered apart from reciprocal registration. It is not desirable that nurses unable to register at Home should be accepted in the Dominion. It has not been found from experience that the nurses coming out have been in any way superior to those trained in New Zealand hospitals.

There is no actual shortage of nurses in the Dominion at present, though there may not be a sufficient number of those who are willing to go to the backblocks and work under the difficult conditions obtaining in places where no suitable accommodation is provided. There has been little difficulty in finding nurses where a comfortable cottage is built and furnished for their use, in spite of the isolation and lonely life. Owing possibly to the increased cost of living and consequently higher fees, or possibly to the better health of the community owing to preventive medicine, private nurses have not been so continuously employed as in the past, many having been for weeks at a time waiting for cases. Probably the work of private nurses has been largely affected by the difficulties of house accommodation and domestic help, which cause many invalids to go to private hospitals, or to avail themselves of the more open doors of the public hospitals, who would otherwise have been nursed in their homes. It is difficult to see what can be done in this matter. It is a great hardship for a nurse to be for any lengthened period out of work, and consequently earning nothing, but living-expenses going on. The only remedy appears to be for private nurses to be State servants on a regular salary, all fees to be paid to the Public Account. This would bring more nurses under the benefits of superannuation, and thus provide for the old age of a class of workers who can otherwise

never hope to make more than a hand-to-mouth living. Nurses conducting private hospitals, in which, if successful, they can usually make a fair income and provide for the future, need not be considered, although, as more and more the public hospitals are used, these will be reduced in number.

The whole problem of private nursing hinges on the fact that in order to have anything at all approximating to the number of nurses required during times of much sickness or epidemic there must be numbers out of work in normal times.

Nurses in Government Departments.

The number of these nurses in increasing. This Department has added to its Nurse Inspectors Miss Broad, late Matron of the Hawera Hospital, to be attached to the office of the Medical Officer of Health, Dunedin, and Miss Buckley, A.R.R.C., late Matron, N.Z. Expeditionary Force, to that of the Medical Officer of Health, Christchurch. The work of these officers is chiefly in connection with private hospitals, midwives, and district nurses.

Under the Education Department school nurses were appointed, who from the 1st March were transferred to this Department, and more are being appointed from time to time. In the Education Department also are boarding-out officers and district agents under the Infant-life Act, and these are now almost entirely recruited from the ranks of professional nurses. These positions, which command a regular salary with superannuation and no night-work—the bugbear of nursing—appeal to many nurses, and there is no lack of applicants. They require to be carefully selected with a view to the difficulty of dealing with parents, and the necessity of tactful and sympathetic treatment of children. Nurses of good education, some administrative ability, and sufficient experience are needed.

District Health Nursing.

Still the Department is not able to fill all the demands from country districts. As pointed out above, this is frequently because no proper arrangements are made, by the people who ask for her, for the accommodation and comfort of the nurse. The Department is reproached for delay in complying with the demands of the people, but it must be remembered that nurses generally are not under its control, and cannot, whether they will or no, be sent where they are asked for. It is for the people who want them to offer some attractions to call forth applicants for these positions.

The Department has been gradually adding to its staff of nurses for district work, either for Natives or Europeans, and of nurses who can be sent at short notice to relieve other Government nurses or midwives, or even to relieve the Matrons of country hospitals at the request of a Board. All these nurses are to be styled "Health nurses," and will be detailed to any duty required by the Health Department.

If sent to a Hospital Board district whose duty it is to supply the needs of the district the nurse is appointed a member of the Public Service, thus retaining the benefits of superannuation, and her salary, paid by the Department, should be refunded to the Public Account. Nurses being appointed to the Public Service by various Departments has led to certain anomalies and inequalities in salary which have caused some comment. A scale of pay for Government nurses in different positions has been submitted to the Public Service Commissioner, and now that the great majority of these nurses will be members of the different divisions of the Health Department a more equable method of payment and allowances and increments may be arranged.

Plunket Nursing.

There are now fifty Plunket nurses scattered throughout the country, and the society desires to place a large number more.

Nurses have been sent over from Australia to be trained in this special work at Karitane. A supervisor of Plunket nursing is now appointed by the society in the person of Miss Pattrick, who has for years been associated with Dr. Truby King's work, and who assisted him in London in the establishment of the School of Mothercraft in London. This is a step long recommended by the Department, and should tend to greatly increase the efficiency of Plunket nurses.

Dental Nurses.

The creation of a new branch of nursing is due to the need of dental care for children during their school age. A division of the Department has charge of this work, and a course of instruction has been arranged on very favourable terms for young women who desire to take it up. Trained nurses are to have preference in appointments, but beyond the knowledge of asepsis there is not a great need for the full training of a qualified nurse. The course is to be for two years, with a possible reduction in the case of registered nurses, and during that time an intelligent woman should be able to master the technical details of the class of dental work she will have to undertake. Dentists' assistants would be very suitable for this further training.

Superannuation for Nurses.

The Bill prepared last year as an amendment to the National Provident Fund unfortunately was not brought forward last session. It is hoped that it will be passed this year. A clause in the amendment to the Hospital and Charitable Institutions Act, 1909, makes a partial provision for superannua-

tion, in empowering the Hospital Boards to pay a pension after retirement after ten years' continuous service of any officer or servant of the Board. I am glad to record the action of the Waikato Hospital Board in taking advantage of this clause and awarding the full pension allowed to the Matron, Miss Rothwell, who retired in May after almost thirty years' service.

The Nurses' Memorial Fund has served a very useful purpose in assisting nurses who from ill health or age are unable to earn a living and have insufficient or no income. There are now nine annuitants under this fund who receive an equivalent Government subsidy. The amount on the estimates for this purpose should be at least double what is now granted; and it may be pointed out that, in the absence of a superannuation scheme for the nurses other than those who are Civil servants, the subsidies to this fund merely meet in a small measure the demand which has been made, both in Parliament and outside, for some years past for this provision for nurses. The Memorial Fund now amounts to £9,000, and when the Mackay bequest of about £8,000 is paid over it will be in a position to do more in assisting the many other nurses needing help. The income only of the fund is used for grants or annuities.

Home-nursing Lectures.

These lectures have been carried on during the year chiefly under the auspices of the Women's National Reserve. The classes have been numerous and well attended in some centres; but the call for this class of teaching, which originally started after the influenza epidemic in 1918, has not been maintained with the enthusiasm with which it started. It is intended to include such teaching in the activities of the Red Cross organization, and probably with the ordinary lectures and demonstrations given for years by the St. John Ambulance Society the need of home-nursing instructions will be filled.

SECTION 2.—MIDWIVES ACT.

During the year two examinations have been held under the Midwives Act, at which 114 candidates presented themselves and 107 passed. Thirty-three midwives were registered from overseas.

The Cromwell Maternity Hospital was recognized as a training-school under certain conditions. The Wairau Maternity Hospital, Blenheim, was also recognized as a training-school, the first term commencing in December, 1920.

The lack of midwifery nurses in the country is still a hardship to settlers, who either have to do with the unskilled help of a neighbour or go long distances to a maternity home. Many country districts are making efforts to have a cottage hospital primarily for maternity cases, and with a room for emergency cases of sickness or accident.

The St. Helens district midwives are also doing good work, and are much appreciated. There are now ten of these nurses—stationed at Ashburton, Lumsden, Patea, Greymouth, Westport, Hokitika, Lyttelton, Petone, Rotorua, Otautau (combined general nursing). It is hoped in the near future to add to these midwifery nurses in town districts where medical aid is available. In more remote districts the full qualifications of nurse and midwife are needed. To bring midwifery trainees into line with those training for general nursing the regulations under the Midwifery Act were amended during the year, and only a nominal fee is now charged pending the proposed amendment of the Act. In other countries the fee for midwifery training is still high, ranging from £30 to £50. There has never been any lack of applicants for the vacancies at the St. Helens hospitals.

State Maternity Hospitals.

A new State maternity hospital has been established at Wanganui. The building prepared by the Red Cross for convalescent soldiers, no longer being required for that purpose, was purchased by Mr. Hope-Gibbons at Wanganui, and handed over to the Department for a St. Helens Hospital. It has been added to and altered, and is now an excellent maternity hospital for its size, containing ten beds. Comfortable quarters are provided for the staff. The house stands in fine grounds; a garden in which sufficient fruit and vegetables can be grown is already laid out. Miss Elliot (sub-matron, St. Helens Hospital, Wellington) has been appointed Matron; Dr. Douglas Wilson, Medical Officer.

The long-deferred new building at St. Helens Hospital, Auckland, has at last been commenced. The Hospital has many times during the year exceeded its proper number of cases, and many applicants for admission have had to be refused. The accommodation is also badly needed for antenatal treatment.

At Christchurch St. Helens, as the projected new building at Addington must still be deferred, some necessary additions for staff accommodation are now commenced.

At each of these institutions, owing to the new system of supplies, it is necessary to build new store-rooms large enough to contain a six-months supply.

There have been few important changes in the personnel of staffs of these hospitals. Miss Inglis, Matron, St. Helens, Wellington, who was granted six months' leave and an additional two months on account of ill health, returned at the beginning of April. Miss Newman, St. Helens, Christchurch, was granted three months' leave on account of ill health. Dr. William Irving was granted indefinite leave to go to England, and Dr. Anderson has taken his place. Dr. Tracy Inglis resumed his charge of St. Helens, Auckland, in January, 1921, Dr. Stride, who had filled that position most satisfactorily during Dr. Inglis's absence on military service, retiring after five years.

In the St. Helens hospitals 1,246 cases were confined during the year; 1,255 children were born alive, and there were forty-one still-births. Deaths of mothers were six; infants, twenty-five. The number of confinements of women in their own homes was 579, with no maternal and no infant deaths. one set of triplets was born at Auckland, but only two survived.

Confinements in different Centres.

	Indoor.	Outdoor.	Deaths.	
			Mothers.	Infants.
Auckland	353	247	..	4
Wellington	260	97	2	7
Christchurch	285	153	1	9*
Dunedin	139	78	1	2
Gisborne	78	1	1	2
Invercargill	131	3	1	1

* Including one monstrosity, which lived ten minutes.

OTHER MATERNITY HOSPITALS.

Statistics for Year ended 31st March, 1921.

	Confinements.	Children born alive.	Deaths.	
			Mothers.	Infants.
Batchelor Maternity Hospital, Dunedin	181	168	1	1
McHardy Maternity Home, Napier	185	176	1	9
Wairau Maternity Hospital, Blenheim	116	115	..	5
Maternity Home, Picton	44	42	..	1
Alexandra Home, Wellington*	140	142	1	3
Essex Maternity Home, Christchurch	55	48	..	7
Cromwell Hospital Maternity Ward, Cromwell ..	46	44	..	5
Mangonui Hospital Maternity Ward, Mangonui ..	36	34	..	1
Hokianga Hospital Maternity Ward, Rawene ..	40	39	..	1
Whangarei Hospital Maternity Ward, Whangarei ..	148	144	1	5
Kawakawa Hospital Maternity Ward, Kawakawa ..	59	61	1	2
Salvation Army Maternity Home, Wellington ..	58	56	..	4
Salvation Army Maternity Home, Auckland ..	60	59	..	6
Salvation Army Maternity Home, Dunedin	61	60	..	4
Salvation Army Maternity Home, Gisborne ..	53	51	..	1
Salvation Army Maternity Home, Napier	57	53	..	1
Salvation Army Maternity Home, Christchurch ..	39	37	..	2
The Hospital, Kaikoura	53	54	1	..
The Hospital, Oxford	24	24	1	..
The Hospital, Waikari	19	18	..	..

* In addition to indoor cases the Alexandra Home staff attended 134 cases outside.

SECTION 3.—PRIVATE HOSPITALS.

During the year there have been many changes among the licensees of private hospitals throughout the Dominion. Nurses who felt obliged to carry on during the war years have retired, and their places have been taken by returned sisters. Ex military nurses have also opened new hospitals. There have been sixty new licenses issued, twenty-two transferred, and only twenty given up.

With the appointment of additional Nurse Inspectors it is hoped to exercise a closer supervision over the management of private hospitals. Better equipment will be expected, what had to serve during the shortage caused by the war not being considered sufficient now. It is realized that the high cost of living must be taken into consideration, but against this must be placed the increased fees charged. Those who are prepared to pay these fees are entitled to skilled attention in up-to-date hygienic surroundings.

Recent returns from private maternity hospitals show that in 178 of these institutions 15,838 confinements took place during the period 1st July, 1919, to June, 1921, and there were only thirty-eight maternal deaths, a mortality of approximately 2·4 per thousand. Of these deaths six were from septicæmia.

In conclusion I must express my thanks for loyal assistance in the various branches of my division to Miss Bicknell, Miss Willis (of Wellington), Miss Bagley and Miss Mirams (in Auckland), and Miss Wright, with my military-hospital work. The two recently appointed officers at Dunedin and Christchurch will also be of great assistance. I wish also to express my appreciation of the loyal and valuable service of the Matron and staffs of the various St. Helens hospitals, Otaki Hospital, and Te Waikato Sanatorium.

H. MACLEAN,
Director, Division of Nursing.

PART V.—SCHOOL HYGIENE

SECTION 1.—CONTROL AND ADMINISTRATION.

Transfer of Control.

The most notable event of the year directly concerning the school medical service has been its transfer from the control of the Education Department to that of the Department of Health. The school medical service is primarily a health service, and, viewed in this light, more properly comes under the control of the Department of Health. For practical purposes the linking-up of the school medical service with the other Health services of the Dominion will undoubtedly prove to be of great advantage, especially in providing readier access to treatment by utilizing more widely the existing public-health system.

Fears have been expressed by some lest the transfer to the Department of Health would result in a lack of co-ordination between this branch of the Health service and the schools in which its work is necessarily carried on. The need for close co-operation between school medical officers and school nurses on the one hand, and Education Boards, School Inspectors, and school-teachers on the other, is, however, well recognized, and the cordial relations which have hitherto contributed so much to the success and efficiency of the work will doubtless be maintained. It cannot be too strongly emphasized that the mission of the school medical service is largely educational, and in this respect the school medical work is to a great extent dependent upon the sympathy and co-operation of school-teachers, School Inspectors, and Education Boards.

Physical-training Branch.

The physical-training branch, with its staff of fifteen itinerant instructors and a Chief Physical Instructor, continues under the control of the Education Department. Although it may be said that physical training deals essentially with the health of the school-child, and should therefore be grouped with the school medical branch, yet in actuality the physical instructors much more definitely belong to the teaching staff of the schools; in fact, a scheme is under consideration by which the marks allotted to teachers by physical instructors for their efficiency in conducting physical-training classes would be taken into account in the grading of teachers. These considerations make it impossible that the physical-training staff should be under other control than that of the Education Department. It is nevertheless of very great importance that there should be a generous co-operation between the school medical and physical training staffs, and this co-operation needs all the more to be emphasized since the two branches have ceased to be under the same control.

Returns of Medical Inspection.

During the year a total of 1,356 schools were visited, and the result of the examination (partial or complete) of 78,980 children recorded. Of those who were examined in the routine way an average of 79 per cent. was returned as having physical or mental defect of some kind. In interpreting this percentage it should be understood that under the heading of "dental decay" are recorded only those cases with carious permanent teeth, or more than three carious temporary teeth —*i.e.*, an average of 54·6 per cent. for all districts. The number of children with perfect sets of teeth is probably not more than 2 or 3 per cent.

During the past year effort was concentrated particularly upon the routine examination of the entrant and primer classes, to which the following figures largely refer. Some of the percentages of defect are therefore not so high as those obtained in previous years, when Standard II was examined for statistical purposes.

Impaired nutrition was found present in 7·25 per cent. I should emphasize that these figures represent only such cases as are not referable to any other heading. For instance, deformity of the chest and dental caries are well-recognized indications of faulty nutrition. Others, again, are included under less definite headings, such as "anæmia" and "suspected tuberculosis."

Deformity of trunk and chest was found present in 23·8 per cent. This figure includes not only cases of such definite deformity as pigeon-breast, spinal curvation, and so on, but also cases of faulty posture associated with round shoulders and flat chest. These habitual faults of posture, unless corrected, develop in time into fixed deformities. It is for this type especially that the "corrective class" with its special physical exercises is devised.

Defective vision was detected in 4 per cent. of those examined. This figure is probably below that of the actual defect existing, as the test was applied by some officers only where defect was suspected. The result of previous examination of children in Standard II gives 10 per cent. suffering from defective vision.

Obstructed breathing occurs to some extent in 19·0 per cent. of children, in the following proportions: Adenoids, 2·8 per cent.; enlarged tonsils, 13·4 per cent.; adenoids and enlarged tonsils, 2·8 per cent. Many of these cases show obstructed breathing to slight degree, and, by well-regulated breathing-exercises and physical drill, improve without operation.

STAFF.

At the end of the year the staff of this division consisted of thirteen school medical officers and twenty-seven school nurses, distributed throughout the Dominion as follows :—

	Medical Officers.	Nurses.
North Auckland	1	2
Auckland Central	2	4
South Auckland	1	2
Wanganui and Taranaki	1	2
Hawke's Bay	1	2
Wellington	1	3
Nelson and Marlborough	1	2
Canterbury	2	6
Otago	2	3
Southland	1	1
	13	27

In a general way the work of these officers may be described under two headings—(1) inspectional, and (2) educational.

SECTION 2.—NATURE OF MEDICAL INSPECTION.

MEDICAL INSPECTION.

School medical officers are empowered by the Health Act, 1920, to inspect any or all of the children attending the State primary schools of the Dominion.

The school medical officer assisted by the school nurse medically examines the children at a school. The results of the examination are recorded upon a separate record-card for each child. On this record-card is also entered information relating to the child's former and present health, obtained from the parents in reply to an inquiry-card issued in advance. The parents of those children found to be in need of medical or dental treatment or advice are notified, and recommended to have the matter attended to ; and the names, addresses, &c., of these children are entered by the school nurse in a register. At a later date the " notified " children are reinspected at the school by the nurse, and notes as to whether treatment has been obtained are entered in the register. The parents of those children who have not received treatment are then called on by the nurse, who persuades, advises, or assists the parents in whatever way circumstances may indicate. The dates, numbers, and results of such reinspections and visits to homes are entered in the register. From this and other forms the proportion of the notifications which are responded to by treatment is worked out. The data entered upon the record-cards are also tabulated on summary forms for statistical purposes.

As the effectiveness of the inspection depends almost entirely upon the sympathy and co-operation of parents, it is of very great value for the school medical officer to get into personal touch with the parents ; and this can be best done either by meeting them individually or collectively in connection with the medical examination of their children. Some officers invite the parents to be present during the inspection, and discuss with individual parents matters relating to the health of their children. This method has been found to result in a distinctly increased response from the parents, and to a great extent lessens the amount of home visiting by the nurses. It, however, involves additional time and energy on the part of the school medical officer, and it has not been found practicable in all districts. Other officers invite parents to meet them collectively at the school ; a short address is given on salient matters, discussion invited, and questions answered. In arranging such meetings it has been found valuable, especially in country districts, to enlist the co-operation of the local School Committees. By the help of the head teacher and the Committee in rural communities the amount of interest taken in the work is often most gratifying. One officer says : " Wherever possible I have met the parents and the School Committee at an evening meeting, and have been agreeably surprised at the numbers who will walk or ride for miles in the rain and through mud to listen." The subject of lecturing will be further referred to under the heading of " Educational propaganda."

Work of School Nurses.—This is described by one medical officer as follows : " In addition to assisting the medical officer in the medical examination of the school-children, the school nurse is an important factor in the social work of her district, and is a most valuable asset in propaganda. In the city districts the school nurses pay several thousands of visits to homes in the year and give much useful advice. They keep under constant supervision the dirty, ill-nourished, and neglected child. They superintend the arrangements for necessary hospital and dental treatment, and personally escort many children to and from the hospital or convalescent home."

Another officer states : " School nurses get to know by sight almost every child in their schools, and to know a good deal of each one's home circumstances and relationships." Generally speaking, the school nurse performs much laborious and very valuable work ; she is a very essential part of the service.

Such is, in very brief and without any pretence of completeness, an outline of the inspectional side of the work. There is no cast-iron scheme, and each medical officer develops or varies the method according to what is best felt to meet the conditions presenting in each district.

TREATMENT.

It is perhaps well to make clear that the school medical officer does not in all cases claim to make an exact diagnosis or to prescribe specific treatment, but rather recommends when it is advisable that a medical or dental practitioner be consulted. The school medical officer is seldom in a position to consult with the parents as to the child's history and symptoms, or to keep a case under observation. This belongs to the sphere of the practitioner. No treatment is undertaken by school medical officers.

In connection with the subject of treatment I will quote from my report for the year 1919: "A matter upon which the school medical officers are generally agreed is the need for further provision for specialist treatment of *defects of the nose, throat, ear, and eye.* Next to dental disease these defects are the commonest, and there is often great difficulty in obtaining the necessary treatment. In many country districts this treatment is practically unprocurable, and even in some of the large centres the hospital facilities are inadequate. This lack of opportunity for treatment is the greatest barrier in the way of further progress and greater effectiveness of the medical inspection of school-children."

Until recently this difficulty has not been very great, as according to past reports an average of over 70 per cent. of the reported cases have received treatment; but the problem has been accentuated during the past two years owing to the fact that increase in the school medical staff has enabled the work to be extended to the smaller schools of the more sparsely populated districts, where necessarily there is more difficulty in obtaining treatment. For instance, one district which had previously received little medical inspection, and which does not include any of the more populous centres, furnishes the following figures:—

Received treatment in the backblocks	15 per cent.
Received treatment in the intermediate country	33 ,,
Received treatment in the borough town of the district	57 ,,

As an indication of the progress which has been made the following figures are given for comparison from a district in which a school medical officer has been at work for a number of years in the intermediate country and borough towns:—

Received treatment for dental defect	58 per cent.
Received treatment for other defects	72 ,,
Total number receiving treatment	61 ,,

Another medical officer gives the following figures for one of the four main centres:—

Received treatment for dental defect	76·5 per cent.
Received treatment for other defects	80 ,,
Total number receiving treatment	77·5 ,,

The whole subject of elaborating facilities for treatment and co-ordinating it with the work of school medical inspection can now, under the control of the Department of Health, be more easily dealt with than has heretofore been possible.

It remains to mention a scheme which has been set in operation in parts of the Auckland Province for the treatment of cases of *defective vision* in country schools. Practically the eye specialists, situated as they are in the larger towns, have been quite out of reach of these children. It was therefore arranged for an Auckland specialist to visit the country schools, examine the eyes, and prescribe glasses for those children selected by the school medical officer. A total of ninety children had up to the end of the year been so treated. The possibility of an extension of such a scheme to other districts is under consideration.

SECTION 3.—HEALTH OF SCHOOL-CHILDREN.

With reference to the state of the health of the school-children of New Zealand, this most certainly must be regarded as very much below what it ought to be in a country having such advantages in climate, prosperity, and general welfare. It is true that the average height and weight in relation to age is higher in New Zealand than in England, but more pertinent indices of health are to be found in the state of the teeth, the presence or absence of chest-deformity, anæmia, adenoids, and unhealthy tonsils.

Dental disease is practically universal, though a steadily increasing number of children now receive dental treatment. One medical officer states: "As compared with conditions found some years ago there is evidence of gradual but distinct improvement in the care taken of the teeth. Schools not previously visited by medical officers compare unfavourably with those regularly inspected. Undoubtedly there is yet a vast field for reform, but the fact remains that parents as a whole are more alive to the importance of a clean mouth than they were."

Concerning *chest-deformity*, one of the chief manifestations of rickets in New Zealand, one medical officer states: "In my opinion the percentage of chest-deformity reflects most accurately the general health and conditions of the children, and is therefore of the utmost value in estimating the relative importance of the different factors which go to cause ill health and physical defects." Another officer says: "It is interesting to compare the result of the examination of children of the entrant class with that of older children. The proportion of malnutrition is approximately the same as in children of Standard II: physical deformity is rather more frequent. Rickety manifestations appear much too often, especially in a few schools of the poorer areas. Thus, in one city school thirty-three out of fifty-eight young children showed physical deformity, with rickets as the chief underlying factor. Better supervision of the child in the pre-school period; better education

of the mother in matters of feeding, clothing, &c.; better housing-conditions, with baths, proper sanitation, and accessible fresh-air spaces, are among the things urgently needed."

In connection with the subject of the *home conditions* of children a report from one district states: "In New Zealand the necessity of giving relief to the mothers of large families is very great. The children of women who are overworked continuously before and after birth cannot have the vitality necessary for robust growth. Local organizations—as the residential nurseries of the Women's National Reserve, the Mothers' Help Organization, and so on—are of great benefit in cases of urgency, but their activities are necessarily inadequate for the great need."

The *overworking of children out of school-hours*, especially amongst share milkers, not only continues to prove a serious impediment to their school-work, but also is associated with a high degree of physical defect and impaired nutrition. In this connection the following conclusions, arrived at by a head teacher during five years of observation of the same set of children, are of special interest:—

"Standards V and VI (eight girls, two boys): Four milkers—average work poor. One defective sight—work poor. Five non-milkers—work good; neat, clean, and active.

"Standards III and IV (four girls, two boys): Four milkers—work poor, unreliable, untidy, and showing signs of fatigue. Two non-milkers—work quite satisfactory.

"Standards I and II (five girls, two boys): Three milkers—progress small. Four non-milkers—progress normal.

"In nearly every case the mother, in addition to performing house duties, does milking and other hard work outside. Normal children cannot hold their own even if only milking three hours a day. I have proved this during five years of 'starting the season.'"

In a preliminary inquiry into the home conditions and diet in twenty-five cases of city children suffering from *malnutrition* and severe physical defects the following predominating factors were elicited: (1) A large incidence of infectious disease, especially measles and whooping-cough; (2) want of adequate ventilation in the home; (3) crowded and dirty sleeping-conditions; (4) in many cases discordant parental relationship and indifference towards the welfare of their children; (5) in some cases drink is a serious disturbing element; (6) an insufficiency of fresh milk, dairy-products, and eggs, milk often being taken only as condensed milk; (7) meat is often of the small-goods variety or tinned; (8) an insufficiency of fresh vegetables, especially greens; (9) an insufficiency of fruit; (10) in spite of comparative poverty, in many cases a good deal is spent on sweets.

The diet of these children thus consists mainly of white bread, sugar, meat, root vegetables, and preserved food—a combination known to be seriously deficient in several important respects. The superior nourishing-value of wheatmeal bread in place of white bread; the importance of green vegetables and fresh fruit as regular constituents of the diet; the value of a certain amount of fresh milk, of butter, cheese, and eggs; and the harm done by the indiscriminate consumption of sugar, sweets, and confectionery—these are some of the matters which are receiving special emphasis in the propaganda of the Division.

SECTION 4.—EDUCATIONAL OR PREVENTIVE WORK.

As a comprehensive scheme medical inspection and the reporting of defects, even were they combined with the most complete provision for treatment, must fall short of the requirement. No real progress can be made towards the better health of children until fundamental causes are dealt with. The value of the prevention of disease as opposed to its treatment is now receiving increasing recognition in all civilized countries. Evidence and proof are steadily accumulating in support of the fact that the common diseases and defects of childhood are not only preventable, but are easily and simply preventable. The cause of dental disease, for instance, is as definitely established as the cause of any disease; it is at the same time the most prevalent of all diseases. Its treatment is troublesome, costly, frequently painful, and in many cases mutilating. The problem of the health of the child resolves itself largely into the problem of dental disease, not merely because dental disease is the most serious disease—it is the most serious, in view of its prevalence—but because by correcting the errors which give rise to it we at the same time correct important causes of other common defects such as adenoids, unhealthy tonsils, rickets, anæmia, poor nutrition, and backwardness. It cannot be too strongly emphasized that the problem of the health of the child is primarily a simple problem. It is, however, intimately bound up with domestic, social, industrial, and economic problems in their far-reaching ramifications. To make the work effective public opinion and habit must be influenced, and with this object uniform and concerted action is required.

The most important duty of the school medical officer therefore is *educative propaganda with a view to the prevention of disease.* In connection with the medical inspection of school-children leaflets are issued to parents containing information of both general and particular application. These leaflets were revised early in the year, and their number slightly augmented. Those at present in use are: "Suggestions to Parents" (relating to general matters of diet, clothing, and so on); "Care of the Teeth"; "School Lunch"; "Adenoids and Enlarged Tonsils"; "Defective Vision"; "Common Skin-diseases of Childhood"; and "Care of the Hair."

At the meetings with parents in connection with the medical inspection of their children school medical officers have excellent opportunity for propaganda work. However hopeless may be the task of altering the long-established habits of adults, it can be confidently stated that parents generally are both willing and anxious to receive guidance concerning the upbringing of their children. One medical officer states: "Meetings of parents and School Committees were held in all the more important centres and many of the smaller towns. There is a widespread and encouraging public interest in all matters connected with the welfare of children, and a desire for information and guid-

ance in schemes for their benefit." At the recent conference of school medical officers it was urged that more attention should be devoted to this matter of propaganda as being the essential growing-point of the work. As Sir George Newman, in his report on school medical work in England, has said, "What are school medical officers doing to prevent dental decay? What are they doing to prevent adenoids?" and so on. So long as these diseases are widespread in school-children the task of the school medical officer is unfinished. The prevalence of these diseases is proof positive that the subject of preventive propaganda has not received the attention which its importance imperatively demands.

For effective propaganda something more in the nature of a publicity campaign is required. The circulars for parents do not command public attention as a whole. Early in the year it was consequently felt that the time was ripe for *newspaper propaganda*. The editors of all newspapers of the Dominion were circularized and their sympathy and co-operation solicited in this truly national and patriotic work. At varying intervals copies of articles were subsequently issued for publication on specified dates. During the year thirteen articles were issued to nearly ninety newspapers, and I have to express the Department's appreciation of the public-spirited action of the Press in publishing these articles. The generous co-operation of the Press is of indispensable value in work of this kind.

In a task of such magnitude as the moulding of the habits of parents in regard to their children every means of approach must be used. School medical officers have been encouraged to do more lecturing-work. Lectures are of special value in bringing the medical officer into closer touch with the people and in giving opportunity for questioning and discussion. In the hands of the capable lecturer this is a most potent means of influencing public opinion and feeling. In order to make lecturing easier and more attractive some lantern-slides and diagrams have been prepared, presenting salient facts in impressive and graphic manner. With the aid of magic-lanterns and effective methods of illustration the subject can be made interesting even to the most unappreciative. Further development in this direction is required, and in this country, at any rate, the most powerful instrument of all—the cinema—has not yet been enlisted.

The school medical propagandist recognizes that his work divides itself naturally into two parts. There are on the one hand matters which are under the control of the parents, and on the other those which require action on the part of the child. Moreover, sooner or later the child supersedes the parent, and, as Professor Emmet Holt has pointed out, one of the best ways of influencing the parent is through the child. Consequently what must be largely depended upon to effect a progressive influence upon public opinion and habit is *the teaching to the children in the schools*. The school medical officer may give considerable stimulus to this work. There is undoubted value in the medical officer giving talks to school-children on the care of their health in addition to the regular lessons by the teacher. In this way, where needed, a lead may be given to the teacher. The children also are naturally inclined to be impressed by what is said by the school doctor. The medical officer, moreover, should aim at making every teacher a propagandist. It is necessary that teachers should be well informed on this subject (and with this object a booklet for teachers on the health of the child is in preparation), but it is equally important that the teachers should, as far as possible, be inspired with enthusiasm. In this the personal influence of the school medical officers with the teachers is of paramount importance. There is great value in meeting the teachers collectively at the branch meetings of the Educational Institute; medical officers should endeavour to enter into the teachers' point of view and gain their sympathy and co-operation.

As a means of further interesting the children some articles on simple matters of health were compiled for the *School Journal* (a monthly periodical which is read by the children as part of their school-work). It is understood that these articles were appreciated by both children and teachers. Illustrations were furnished in some cases. The scheme was quite an experiment, and certainly calls for further development.

In addition to the propagation of such knowledge as we already possess concerning the cultivation of health and prevention of disease, it is important for school medical officers to pursue *special inquiries* into the many problems of disease and inefficiency in relation to the school-child. In this connection Sir George Newman has said: "It should be borne in mind that the physical examination of children affords opportunity for valuable scientific work. Mere mechanical inspection may readily degenerate into a form of drudgery, and the school doctor should be watchful that his work is constructive and, as far as practicable, is applied to the advancement of knowledge. The opportunity is exceptional."

The collecting of information as to the relation of errors of infant-feeding to chest-deformity in school years; the diets of the 2 or 3 per cent. of school-children who have perfect sets of teeth; the relation of adenoids to faulty diet and catarrh; the effect of open air and sunshine upon nutrition and on the hæmoglobin content of the blood; the relation of dental disease and malformation of the chest to backwardness and general ill health; and so on, would be of considerable value and interest. There are numbers of matters about which further information is required. Moreover, the local demonstration of a particular truth in relation to the school-children of the Dominion is of exceptional value in bringing these truths home to the people. At the conference of school medical officers held early in the year the importance of this class of work was particularly stressed. At this conference papers were read and discussed by members of the staff on the following subjects: "Backward Children"; "Psychological and Intelligence Tests"; "The Country School"; "Report on a Goitre Clinic"; "Tooth-brush Drill"; "A Statistical Study of the Incidence of Goitre"; and "Child Labour."

Divisions of Child Welfare and Dental Hygiene.

Being intimately connected with the work and aims of this division, the establishment of the Divisions of Child Welfare and of Dental Hygiene must be briefly referred to as developments of the

very greatest moment. As stated in my report for 1919, "As most of the defects and poor health in school-children are due to causes operating in the pre-school period, no system which concerns itself only with children of school age can effectively deal with the problems of child-health. . . . In the building of a child's physique the first six years are of much greater importance than those of the school-going period. The effect of errors of nutrition in these earlier years can never in later life be wholly remedied."

Reference has already been made to the importance and widespread need of dental treatment.

SECTION 5.—SYLLABUS OF PHYSICAL TRAINING FOR SCHOOLS.

Early in 1920 it was decided that the Education Department should issue to teachers its own edition of a "Syllabus of Physical Training for Schools." The following is an extract from the prefatory memorandum of this edition:—

"The 1909 Syllabus of Physical Training issued by the London Education Board, which has up to the present been in use in the New Zealand schools, is now superseded by a revised and modified edition published by the Education Department of New Zealand. Permission has been granted by the Controller of His Majesty's Stationery Office, London, to use the text of both the old and new London syllabuses. These form the basis of this edition, which has been produced to meet the somewhat different conditions obtaining in New Zealand. This edition embodies the results of the experience gained in the seven years during which the system has been in operation in New Zealand, and also all that has been considered desirable to adopt of the fresh material in the new London Education Board's syllabus issued in 1919. It is based broadly on the Swedish system of physical-education exercises, which has been widely adopted on the Continent as well as in the British Navy and Army, and is here modified and graduated to suit the special requirements of growing children."

In producing this syllabus brevity in the text has been specially aimed at, and important words and sentences printed in bold type. A certain number of fresh illustrations has been prepared, the tables of exercises revised, and their number slightly increased.

Briefly stated, the aim of the system is to secure the careful and well-balanced cultivation of the physical powers of each individual child, and special emphasis is given to the essential importance of a spirit of recreation and enjoyment in physical training. "These exercises, if rightly conducted, develop in the child a cheerful and joyous spirit, as well as the qualities of alertness, decision, concentration, and perfect control of mind over body." In addition to the general educative value of this system of physical training, it serves a very definite *remedial and preventive purpose* not only in relation to such deformities as pigeon-breast, flat chest, and faulty posture, but also as an important therapeutic factor in such conditions as anæmia, poor nutrition, and adenoids. The special corrective classes held at the larger schools have proved an institution of very great value. For further information on the subject the booklet itself must be referred to, and the report of the Chief Physical Instructor under the Education Department.

Tooth-brush Drill.

Tooth-brush drill has been still further developed. There is no doubt that the careful and systematic use of the tooth-brush can mitigate to a considerable extent the unhealthy state of the mouth commonly present in children suffering from extensive dental decay. Débris and decaying matter are removed, and not allowed to accumulate in and about the teeth. It requires to be specially emphasized, however, that the use of the tooth-brush does not remove the need for reform in diet as being the essential factor in the prevention of dental decay. The medical officer for one district states, "Tooth-brush drill is carried out daily in almost all the schools"; that the teachers are as enthusiastic about it as the children, and that teachers who have once given it a fair trial say that they will never give it up. A remarkable diminution of cases of enlarged and inflamed tonsils is stated to have resulted from this organized tooth-brushing, and in some cases an improved mental capacity and alertness in school-work. There is no doubt also that the atmosphere of the class-room is distinctly improved. Such results are not in the least to be wondered at, and those teachers who have in this way entered so whole-heartedly into the spirit of the school medical work deserve high commendation.

School Lunch.

The organized school lunch has been further developed during the year, and in one or two districts, at any rate, a large proportion of the schools have a sit-down lunch with hot cocoa. This lunch is an excellent opportunity for training in citizenship, and an important socializing factor in the school. The institution of a beverage such as cocoa is mentioned by one medical officer as a factor in preventing the waste of much good food which otherwise takes place owing to the dryness of the meal.

School-cleaning.

In small country schools where labour is often unprocurable some system of school-cleaning by the children is a necessity. Several such systems have been in operation (two of which were reported in *National Education*) in which the children under their own voluntary organization, and with the help of the teachers, undertake this work. As an educational factor of great value such a scheme cannot be too highly commended. When the task is approached in the right spirit it is invaluable in inculcating in the children a sense of communal service and responsibility, and a regard for the school as an institution for their common good and in which they can take a pride.

SECTION 6.—TEMPERANCE AND SEX EDUCATION.

Teaching of Temperance.

In response to the wish of the Hon. the Minister of Health and Education that the teaching in the schools relating to temperance should be placed on a more definite footing, it was recommended that a pamphlet be prepared in which the present position of scientific opinion concerning the effect of alcohol on the human body and mind should be briefly set forth. Such a pamphlet, after receiving the sanction of the Health Department, has been published as a "Special Report" of the Education Department, and issued to all school-teachers as a basis for their teaching in the schools. Without question, the facts concerning the effects of alcohol must be included in propaganda aiming at the better health of the children of the community. In its influence through heredity, in its influence on the parental care of children, as well as in its effect on the children themselves as they reach adult age, alcohol must be regarded as a factor to be seriously reckoned with.

Sex Education.

For some years this subject has recurred for discussion at the conferences of educationists in New Zealand, without a course of action being decided upon. In response to the Hon. the Minister's wish the matter was brought before the conference of School Inspectors, Training-college Principals and Vice-principals, and representative teachers held in February, 1921. The discussion, which followed an address by the Director of the Division of School Hygiene in which the salient points were briefly reviewed, showed that there was a large measure of agreement on the main points at issue.

The practical difficulties in setting in operation a general scheme of sex education are well recognized. It is a subject in which the greatest care and discrimination are needed; precipitate action must be guarded against. The choice before us, however, is between parents and trained teachers on the one hand and playmates and other unreliable persons on the other as the instructors of children. Although under ideal conditions this is admittedly the function and privilege of parents, yet the vast majority do not, will not, and cannot undertake it. It must therefore form a part of the public system of education. One step to which there are no objections, and which is essential as a sound basis for future work, is the inclusion of a general survey of the subject in the training-college course for students qualifying for the teaching profession.

As regards the treatment of the subject, it should be emphasized that sex education is only in a minor part a matter of hygiene: it is mainly and primarily a moral matter, a matter of general education in the broadest and truest sense. It is primarily not a technical subject requiring special knowledge, but a general one requiring specially careful treatment. It consists much less of formal instruction than of fostering in young people a wholesome, frank, and dignified attitude to questions of sex. As regards class education, it has been urged that there is special value in this, as we are not here concerned with an individual problem, but with a social one for which a social or collective conscience is required. Difficulties in class teaching can be largely overcome by commencing the instruction sufficiently early, and especially in the hands of a sympathetic and broadly intelligent teacher. Finally, we have here to do essentially with an educational problem of a moral and social nature, and in this the teacher is the one best fitted for the task. The duty of the school in relation to sex education is incontrovertible.

In conclusion I wish to emphasize that it is in childhood—especially in early childhood—that the greater problems of health are to be solved. They are fundamentally problems of nutrition, and their solution lies well within our power. As Sir George Newman has said: "The fundamental requirement to make us masters of our fate is a universal improvement in the standard of health and the conditions of life. No technical device, no narrow or specific remedy for pestilence, can ultimately triumph apart from a sanitary environment for the community and the sound nutrition of the individual. They are the bed-rock. Out of them spring the sources of national vitality."

E. H. Wilkins,
Director, Division of School Hygiene.

PART VI.—DENTAL HYGIENE.

In connection with the work of my division I beg to submit a report for the year ended 31st March, 1921.

SECTION 1.—STAFF, ACCOMMODATION, AND EQUIPMENT.

Staff.

So far six dental surgeons have been appointed on the usual six-months probation, and are allocated as follows: One in Auckland City, one North of Auckland (stationed at Warkworth, and to include surrounding districts), one at Wellington, one at Nelson, one at Christchurch, and one at Dunedin.

The following is a summary of the operations performed and treatment carried out from approximately October to the end of March: Fillings, 5,619; extractions, 3,798; minor operations, 1,328: total, 10,745.

Besides the above, a considerable number of children have been examined and teeth charted, and duplicate charts have been sent to parents. This has resulted in the treatment of many cases by private practitioners or at hospitals.

Accommodation.

Initial difficulties have to a great extent been overcome as a result of personal interviews with local bodies, who have always been found willing to assist the Department when the position is clearly put before them; and their generous co-operation affords most encouraging evidence of the public's desire to materially aid in the campaign against dental disease among our school-children.

At Auckland, Wellington, and Christchurch, for a small expenditure for fittings, we have good though small surgeries. At Warkworth and Dunedin there is no expense. At Wanganui we recently have had fitted up at small cost a very good surgery, and I hope to have at an early date a dental surgeon in charge at this clinic. All the above are rent-free to the Department. At Nelson the Department rents two rooms at a cost of 10s. per week.

Equipment.

Whilst acting as Director of Dental Services, New Zealand Forces, anticipating requirements for the above service I arranged that all Defence dental equipment both from abroad and in the Dominion should be collected in New Zealand, and none of it disposed of until my return from abroad. I am glad to be able to say that this has resulted in a considerable saving to the Government, as prices for such are at least 75 to 100 per cent. higher than before the war. I have inspected and selected from the above all that would be suitable for our Department, and arranged for such to be stored at Defence medical stores. Satisfactory prices have been fixed, our Department to be charged from time to time as goods are requisitioned for.

Motor Ambulances.

I regret to have to report that there have been many difficulties to overcome with regard to the placing on the road of the motor ambulances which were obtained for New Zealand after the armistice. However, I am now glad to state that we have one ambulance in commission in the Warkworth district, and thus a foundation is laid for this excellent and much-appreciated form of dental service for our country districts.

SECTION 2.—DENTAL NURSES.

Training of Dental Nurses.

A school for dental nurses has been housed by the Department in the old war-records building in Whitmore Street, and is now at work. The Supervisor, Mr. Dunn, expresses himself as more than pleased with the progress made. Thirty-five young women have been accepted as probationers, and in appointing them special care has been taken to select those of good education and general suitability for the work. An excellent lecture-room has been fitted up with the necessary appliances for teaching.

The work so far has been theoretical, and everything possible is being done to give the probationers a thorough grounding in those branches of science which will help to make them intelligent helpers instead of mere "hewers of wood and drawers of water." Realizing as it does the importance of the propaganda work that these ladies will be required to take their part in, the Department cannot emphasize too strongly the necessity for this teaching of fundamentals. The probationers so far have proved themselves keen to learn, anxious to get to the bottom of things, and willing to work; and they give every promise of becoming keen and efficient officers of the Department. The theoretical work will be varied in the coming months with practical work on real teeth set up in mechanical dummies, by which means skill in the use of the mouth-mirror and dental engine will be acquired. After this the large clinic-room, which is well lighted and admirably suited for the work, will be fitted up; and the nurses will first be utilized as oral hygienists for cleansing up the mouths of the children, and carrying out simple preventive measures, gradually leading up to more extensive operative treatment, all of which it is hoped will do much good in the way of saving work later both for the dentist and the doctor.

Library.

In addition to text-books purchased I have to acknowledge a very generous gift from Mr. Cecil Gray, who has donated a considerable number of dental journals, and has also placed his very fine dental library on loan to the Department. I have also to acknowledge a very handsome contribution in the way of chemical equipment, material, and books from Mr. Dunn, Supervisor, this latter donation especially saving the Department a considerable expenditure.

Thos. A. Hunter,
Director, Division of Dental Hygiene.

PART VII.—MAORI HYGIENE.

Sir,—

I have the honour to submit a brief annual report for the year ended 31st March, 1921.

SECTION 1.—NATIVE HEALTH.

Native Health Councils.

In terms of the passing of the Public Health Act, 1920, the reorganization of the old Maori Councils which existed under the Maori Councils Act, 1900, has been undertaken, and some twenty districts created throughout the North Island, the personnel of these Councils determined and gazetted.

New by-laws have been framed to meet the requirements of the Health Act and Maori Councils Act, and have been adopted so far by seven of these bodies; a further eight Councils have received them, and I only await their return to permit of proceeding with the gazetting. I had hoped to have had the whole of the by-laws distributed by the end of March, but, owing to Mr. Menzies' absence on leave, and the huge amount of typing and clerical work involved, will not be able to have these all distributed until the end of the current month, and by the end of May these should be in the hands of the Native Department for purposes of gazetting. I am making every effort to expedite this matter, but, again, in many instances the Natives must have their own particular methods of dealing with these by-laws and instructions, and a certain amount of delay in this direction is therefore unavoidable. I am pleased to state that the new work to be done is welcomed by these Councils, and the whole trend amongst them so far is to get to work and exercise authority over their own people in the interests of health and sanitary matters generally. When the whole of the Councils are in actual working-order I am convinced that with the co-ordination of our nurses and Inspectors a very great improvement in all matters incidental to Native health may be looked for. There are three Councils only in the South Island, and as these Natives are living under very fair conditions I shall not deal with them other than in a formal manner until I have completed the whole of the North Island.

Native Health.

The health of the Natives throughout the whole of the North Island, and the sanitary conditions generally, still show improvement over last year, these circumstances being brought about by the supervision exercised by our Native nurses and Sanitary Inspectors, together with the distribution of pamphlets incidental to Maori ailments and personal visits of myself amongst them. I expect still greater improvement when the various Health Councils are fully established. Thus the keynote in connection with the success of Native health matters may be summed up in the words "strict supervision" administered with firmness, yet kindness. We have had, of course, outbreaks of disease amongst them, typhoid fever being the most serious, but the spread has been more confined than in former years, and this fact can well be attributed to my former remarks.

The nurses and Inspectors are doing good work amongst these people, and are really the "watch-dogs" of the Department, and accordingly the buffers also between the Native people when ill and the public generally, owing to their watching and preventing the spread of disease by confining same to the particular settlements affected.

The sacrifices these officers make are many, the means of travelling in the backblock settlements during winter months being dreadful. However, they carry on and render most efficient service indeed. I cannot express fully my appreciation of their devoted services in the interests of health and otherwise of the Native people. I am also greatly indebted to all Native-school teachers, who deal with cases of sickness not only to the children within their schools, but to any and every Native requiring their services, and they are many. Stocks of medicine supplied gratis by the Department are held by the teachers and administered by them. The services of these good people are indeed a great comfort to the Natives and a most valuable asset to our Department.

SECTION 2.—MEDICAL ATTENDANCE AND SUPPLIES.

Subsidized Medical Officers.

As stated in my previous reports, I am not in a position to report favourably upon the work of some of these officers; and the time has arrived to review the whole question, as by what I gather the Natives are not receiving the attention they should, and accordingly the Department not getting value for the money so expended. Since writing the above I am in receipt of your memo. regarding the whole question, so will deal in detail with this matter in my reply to your communication.

Medical Supplies to Native Schools.

This service, as far as I can gather, is now going on satisfactorily, and, although I complained previously of the celerity compared with the old system, I find that in many cases the despatch of the supplies was delayed owing to transport arrangements or labour troubles over which the Assistant Director of Medical Services in Auckland had no control. On inquiry I am satisfied that the despatch of supplies is expedited all that is possible.

Staff.

I have had every assistance from my officers, and the success of my work for the year just closed could not have been such had it not been for the loyal service rendered.

General.

I could have gone more into detail in connection with this report, but acting under your instruction to economize I have made same as brief as possible. However, my monthly reports show you progress from time to time, so that you are advised regarding the position in so far as Native health matters in the Dominion are concerned.

Te Rangi Hiroa,
Director of Maori Hygiene.

TE WAIKATO SANATORIUM.

SIR,— Te Waikato Sanatorium, Cambridge, 20th May, 1921.

I have the honour to submit a report of the work of Te Waikato Sanatorium, Cambridge, for the year ended the 31st March, 1921 :—

During the year fifty-four patients were discharged and three died. Of those discharged forty-three were relieved and eleven unrelieved. The average daily number of patients increased during the year from twenty-eight to thirty-six.

The long dry summer has been favourable to the patients, and most of them have made marked improvement. On the other hand, we have had a certain number of advanced cases sent in, who are in marked contrast to the others.

The patients have taken over all the work in the flower-gardens under my direction, in addition to doing much useful work in the kitchen-gardens. They have raised all plants from seed, planted them out, and attended to the flower-beds, with very satisfactory results. They have also taken over about ¼ acre in the Russell kitchen-garden, where they have planted many bulbs kindly given us by Sir R. Heaton Rhodes and other friends, and they hope to be able to make a beginning in selling cut flowers and seedlings next spring.

The work of the farm has been progressing steadily, thanks to the energy of our one farm hand. Some 20 acres of land has been put down in permanent grass, and 6 or 8 acres of the swamp has been brought in and is now feeding a number of cattle on permanent grass ; more of the swamp is to be ploughed shortly. The drainage of the swamp is going on steadily, and promises to add very largely to the productivity of the only piece of level ground on the farm. Two small paddocks in which the grass had run out have been ploughed and put down in oats. We hope to be able to cut some of our own oaten chaff next season. A second hand could be profitably employed on the farm. However, I fear the farm will show very little profit this year owing to the phenomenal fall in the price of all farm-produce.

My visits to Thames, Hamilton, and Auckland as tuberculosis officer have been discontinued, with your approval, as they showed little result for the time and money expended. I do not think that much result can be expected unless a whole-time officer is appointed.

The nursing, clerical, and grounds staff have performed their duties cheerfully and efficiently, but we have had much difficulty in securing domestics and have had many changes. At present we have an efficient cook and an efficient laundress, who seem inclined to stop with us. On more than one occasion the Matron has had to act as cook for weeks at a time.

The grounds about the institution are in very good order, with the exception of the paths, the repairs to which are not completed.

G. M. SCOTT,
Medical Superintendent and Tuberculosis Officer.

APPENDIX.—IMPRESSIONS OF SANATORIUM TREATMENT.

It is now three and a half years since I first came to Te Waikato Sanatorium, and in submitting the annual report herewith I should like to put before you a few of the impressions at which I have arrived as the result of my experience.

In the first place, the present sanatorium system only touches the fringe of the matter. Patients get a few months of treatment and derive benefit or not, as the case may be. If improved—I would never say that a case is "cured"—the patient returns to his old work and, in many cases, breaks down again ; while the more advanced cases, being unable to earn a living wage, fall into lower and lower circumstances, and even the best of these cases may be infectious to others.

In my opinion, the effort and the large sums expended on sanatorium treatment result only in temporary improvement to a large number of cases, and in more or less permanent improvement in a small minority, while the spread of infection among the public is hardly checked at all.

If an effort is to be made to stamp out tuberculosis two points must be aimed at—firstly, to get the patients to come for treatment in an early stage ; and, secondly, to make provision for them until they die, or have sufficiently recovered to be able to earn full wages in the open market.

(1.) There are two chief reasons why patients do not come for treatment sufficiently early : one is the difficulty of early diagnosis, and the other, and more important one, the question of how the wife and family are to be supported while the breadwinner is undergoing treatment. Early diagnosis can be more generally achieved by the appointment of whole-time tuberculosis officers assisted by tuberculosis nurses. The officer should be stationed and have his consulting-rooms in a convenient centre, and should make periodical visits to other parts of the province. In more populated centres a whole-time nurse should visit patients in their homes, and also look out for suspicious symptoms among "contacts" and others and bring them to see the tuberculosis officer. In the smaller centres the district nurses and nurses for Maoris should be instructed to assist the tuberculosis officer. The question as to how the family is to be supported during his absence from work is a most important one to the breadwinner. Something equivalent to the military pension should be given to the inmates of a sanatorium as a right. At present the wife and family often depend on what the wife herself can earn, supplemented by a dole from the Charitable-aid Board. In marked contrast is the treatment of military patients. The moment a military patient enters a sanatorium he receives £15 *per mensem* if single and £21 if a married man with one child—and this in addition to free board, lodging, and treatment, and clothing for himself. When the two cases are contrasted it is easy to see why the

military patients can be got hold of in an early stage and kept under treatment until really fit for work and until there is no danger of passing on the infection to others.

(2.) An open-air sanatorium is no place for a man who is seriously ill or dying. A special ward should be provided in which they can die in comfort, and in order that the serious cases may be kept from their own homes where they are sure to be sources of infection to others. Under present conditions a man on leaving the sanatorium usually has to return to his old job—for which he is probably unfit—or to starve. The quest for "a light open-air job" is hopeless—there are not such jobs; and if there were they would not be given to known consumptives. Connected with the sanatorium should be a "working colony," where a patient can either carry on his old occupation or be taught a new one under proper hygienic conditions and medical supervision, and be paid the market value of all the work he is able to do. It is no use giving a consumptive 5 acres of land and telling him to make a living on it. Most of them know nothing and care as little for farming, and none of them can do a full day's work on leaving the sanatorium. Workshops for bootmaking, printing, joinery, &c., are needed in addition to gardens, poultry-farms, &c.; and qualified instructors are needed in every branch. The "colony" should be near the sanatorium, in order that the workers may be under medical supervision, and so that they may be sent back for rest or further treatment if they should show signs of breaking down.

These suggestions may seem to be idealistic; but they can be carried out, and are being carried out in other countries, notably at Papworth in England, and Hairmyres in Scotland.

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Medical Superintendent and Tuberculosis Officer.

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