1922.

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.

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PART I.—GENERAL SURVEY.

SECTION I.—GENERAL ADMINISTRATION.

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

This report is intended mainly to stress and simplify certain matters duly set forth in the valuable surveys by the Divisional Directors.

The past year has been an anxious one, principally on account of the financial stringency and all that it involves, if only regarded from a departmental point of view. Under such circumstances, therefore, the taking-over of the military hospitals and sanatoria from the Defence Department, and the outbreak of bubonic plague in Australia, have by no means lightened our responsibilities, especially when such may have to be shouldered by a very much reduced staff. However, owing to the loyalty and devotion of the executive officers and staff, and the co-operation between the various divisions, I can with satisfaction view the results of the year's work and look forward not unhopefully to the future.

PUBLIC HEALTH.

The public health for the past year, as shown in the lowered death-rate, may on the whole be considered satisfactory, and especially so as regards the incidence of certain of the notifiable diseases.

Since the Department was established in 1900 the crude death-rate for the Dominion has fallen from 10·5 to 8·73 per thousand, while the standardized death-rate, recognized as the international index of mortality, fell to 10·93, the lowest for the last decade, and also, I believe, of any country in the world. Moreover, the infant-mortality rate has fallen from 74·9 in 1900 to 47·8 per thousand births, with a corresponding decrease over the same period for the chief centres.

The instructive report of Dr. Truby King, the Director, Division of Child Welfare, will raise hopes that, under his experienced direction, we may look for a still further decline in the rate of infantile mortality in this country.

Reference is made in this report to the increase of still-births in New Zealand. The position is far from consolatory. There is an indication, however, for investigation as to the causes, and, if possible, the application of remedial measures, otherwise we fall short in the objective of a reduction of the ante-natal and neo-natal death-rate. This problem, as well as that of the lowered birth-rate, presents, it appears, other aspects than that embraced by preventive and curative medicine. Even the most perfect public-health administration is but a secondary means to an end, for, as Sir George Newman, the Principal Medical Officer of the Ministry of Health, has pointed out, "Only a people clean in mind and body, within and without, can stand 'the pestilence which walketh in darkness,' and thus the social and moral standards of a people, its national character, bear relation to its health, and that, and not the medical issue alone, is the decisive factor."

Notifiable Diseases.—As regards certain notifiable diseases we find that scarlet fever was prevalent to a greater extent than in the immediately preceding years, but fortunately it was of a mild type; while diphtheria has shown a marked decline since 1917, but with a slight increase for the year past. In reference to this disease it is encouraging to read the comments of the Director, Division of Public Hygiene, on the Schick test.

The death-rate from enteric fever still shows a steady decline, a matter for congratulation, as its prevalence, and that of allied diseases, is recognized as one of the most reliable and accepted indications as to the sanitary condition of a country. In comparison with the neighbouring Australian States our death-rate for this disease is strikingly low. However, among our Maori population occasional outbreaks occur of more or less severity, and the Department experienced recently some anxiety in regard to one of such in the Ohau district. It is reasonable to expect that with the increasing preventive and prophylactic measures in the form of anti-typhoid inoculation and higher standard of sanitation now being enforced by the Maori Councils and Village Committees, we should,

in the near future, be able to look for a considerable decrease in its existence among the Native population. Towards this end the model by-laws gazetted and now in operation in the Maori districts, and which are proving of great assistance to those responsible, should prove an important factor in limiting the occurrence of this disease.

Tuberculosis.—The death-rate of 6·48 per 10,000 of mean population is, I am glad to advise, second lowest on record. The campaign against this disease has been, and still is, one of the most difficult and important problems that faces any Department of Health. We must also consider its great humanitarian appeal, and withal define and regulate our policy, especially in these times, in due regard to expenditure. The extended provision of sanatoria is one that is at the present time engaging the earnest consideration of the Department, and in the near future in this respect additional accommodation will be provided at Waipiata, in Central Otago, to the extent of fifty beds. However, not on the Government alone should rest the full burden of the campaign against this disease, for undoubtedly Hospital Boards and local authorities must bear their share of responsibility. I am glad to be able to state that in regard to Hospital Boards there is an increasing tendency to, in some measure, meet the demands for the treatment of cases arising within their districts. In the general scheme of prevention, housing is of vital importance, and is one within the particular province it seems of local authorities. In a valuable report presented by a special committee of the Board of Health in 1919 on housing conditions in this country we find some very striking facts. Thus it was computed that 13½ per cent. of the population are living in crowded conditions, amounting to over 136,000 of the inhabitants. Of this number there were 209 cases of 3½ persons living in a single room; 498 of 3 to 3½ persons per room; 1,550 of from 2½ to 3 persons per room. However, herein appears manifested to some extent the contrariness of human nature. We find people of all classes who appear prepared to live under crowded, uncomfortable, and often socially disagreeable conditions by paying a high rent for a "bed-sitting-room, double bed, and use of kitchen," or "two rooms and kitchenette," rather than support proposals of a Government or of municipal authorities or other public bodies for the erection of small houses of two or three rooms and accessories on ample-spaced sections. In spite of times of financial stringency, these proposals have much to be commended from the authorities' and purchasers' standpoint. It is also reasonable to suggest the relaxation of some of the more stringent building by-laws, especially those relating to the height of rooms, so as to enable dwellings to be erected within the reach of the most modest income. Surely it is regrettable that in a young country such as this, with the knowledge of the evils likely to result from the above housing conditions, evidenced in the committee's report, such a state should exist; and as long as it does one cannot with any degree of confidence look for a marked diminution in the incidence of this disease.

Other notifiable diseases.—Cerebro-spinal meningitis shows a decline; acute poliomyelitis, unfortunately, a substantial increase; puerperal septicæmia the lowest death-rate from 1917; erysipelas an increasing prevalence, while influenza was markedly less common than in former years. There were two cases of leprosy occurring among Chinamen, and these were removed to the Hospital on Quail Island.

Of the *non-notifiable diseases* we find again cancer most prominent. From this disease 1,044 deaths occurred, giving a rate of 8·53 per 10,000 of persons living, as against 8·72 for the previous year. Measles and whooping-cough: These dangerous complaints, mainly of childhood, were much less prevalent. Venereal diseases, as shown in the accompanying tables of this report, are far too common. The clinics established in the various centres have done excellent work, and their facilities are now being extended to sailors from oversea ships. Plague: Measures considered necessary to prevent the introduction of plague have kept departmental officers very busy. It was very difficult to get local authorities to see the need for certain precautions, but happily, with few exceptions, they rose to the occasion.

As regards the activities of the Department since its initiation, some twenty years ago, it is satisfactory to note that our efforts were the subject of appreciation in the address of Dr. Young, President of the British Medical Association, during the recent annual conference in Wellington. That address also stressed the growing interest in preventive medicine on the part of the medical profession, and the desire of that profession to assist the Department in carrying out its many and onerous functions.

SECTION 2.—DEPARTMENTAL FINANCE.

During the last few months of the year the burden of the Department's finances was greatly increased by the taking-over of the four large military hospitals from the Defence Department, necessitating, naturally, a considerable increase in the Department's estimates. By the exercise, however, of rigid economy in every direction, and by repeated reviews of the staff and work of the Department, with consequent retrenchment and a curtailing of expenditure wherever possible, even in minor matters, the aggregate of economies effected has enabled the Department to present estimates this year which show an increase only of £31,678, the results for the past year being as follows: Estimated net expenditure, £214,205; actual expenditure, £223,388; estimated expenditure for 1922–23, £245,883.

The capital requirements from the Public Works Fund for the Department's own institutions are necessarily not reducible at present, and have for the last few years been in the neighbourhood of about £50,000 per annum. With the completion, however, of the new St. Helens Hospitals at Auckland and Christchurch, and the expenditure incidental to the taking-over of the military hospitals, the requirements of the Department from the Public Works Fund will be negligible.

In regard to the appropriation of subsidies for Hospital Boards, the amount of subsidies payable to Hospital Boards showed for the first time last year a decrease over the previous year, being, exclusive of subsidy on voluntary contributions, £338,672, as against £415,671. The amount payable,

however, has no relation to the amount actually paid, which amounted to £71,000 more than the estimates. This was due to the subsidy on voluntary contributions, amounting to over £17,000 more than the previous year, and also the fact that despite the general complaint of Hospital Boards that they were unable to obtain payment of their levies from the contributory local authorities, and consequently obtain subsidy thereon, the amount outstanding at the 31st March was some £21,000 less than the previous year. The Department had anticipated that it would be at least £20,000 more, and had cut its estimates accordingly.

It is gratifying to note that the present indications go to show that the net estimated requirements of Hospital Boards for 1922–23 will not result in an increase, but in many cases are less than the previous year, and, generally speaking, a halt has been made in the somewhat alarming annual increase in expenditure of Hospital Boards and the consequent subsidy thereon.

For the first time, this year Boards' estimates of their capital requirements were considered *en bloc*, it having been found that once a Board's estimates had been approved and the money provided by way of levy and subsidy little reason could be urged against the expenditure being undertaken. The present method, therefore, enables the Department to view as a whole the Dominion proposals for the erection of hospitals or additions thereto, and, if the proposals result in too heavy a cost, to ensure the postponement of all but absolutely essential works. A few years ago it was the exception to find a Board raising a loan for capital works, it being possible to finance such work, in most cases, out of the annual capital levy and subsidy. Now, however, few Boards can stand the heavy burden in one year of the capital expenditure required to keep our institutions up-to-date, or to replace obsolete buildings for those suitable to meet the growth of the population and the advancement in medical and surgical requirements. Boards, therefore, have perforce had to have recourse to borrowing, and thus spread the cost over a number of years. This naturally tends, for the present, to lighten the burden on the ratepayers and the Consolidated Fund; but the fact must not be lost sight of that the amount of loans raised annually show no signs of diminishing, and the piling-up of the annual payment of interest and sinking fund year after year will eventually become a very heavy burden on both the Consolidated Fund and the rates. For this reason, and having in view the present high rates of interest that are ruling, Boards have been advised not to spread their loans over too long a period, and as far as possible to make them for ten years. Few, if any, Boards would be unable to repay by levy and subsidy a loan of, say, £10,000 in ten years, and therefore there seems to be no reason for their borrowing such sums for twenty years or longer at 6½ per cent. It might possibly be a good step if the larger Boards at any rate were to combine their loan requirements with the view to facilitating the loan flotation, reducing the expense of advertising, &c., and tending to make them independent of local facilities for borrowing if more desirable, or preferably to raise their money elsewhere.

SECTION 3.—DIVISIONAL REPORTS.

Hospitals.

I would ask that all Medical Superintendents and medical practitioners in touch with public hospital activities should read the valuable and detailed report by the Director of the Division of Hospitals relative to hospital records and the "minimum standard" for hospitals. I have nothing to add to these comments but to express a hope that more adequate attention will be paid to such vital considerations. They are paramount essentials towards the good management and efficiency of any hospital.

Dr. Wylie deals with many other matters of moment. In particular must be mentioned the appeal to all concerned to secure the admission of patients to sanatoria in the early stages of the disease. I recognize that the consumptive is usually very hopeful. His friends may say he is not looking so well, to which he answers, "Oh, I've only a bad cold—I'm getting over it all right." He puts off the day of consulting a doctor. What I want to stress is that every patient, every patient's friend, and every doctor will use every endeavour to make use of sanatorium treatment so soon as the nature of the disease is definitely ascertained.

Child Welfare.

The name of Dr. Truby King, the Director, Division of Child Welfare, is a household word in this country, and his report will be read with much interest. Dr. King's work is principally in the field that is now known as "propaganda." His lectures to mothers, nurses, and midwives, and other sections of the public, will doubtless bear fruit, and I sincerely trust that as a result of his energies the deaths of all babies after the first month of age will, in this country, be brought down another third in the near future—a truly magnificent mark to aim at.

School Hygiene.

The report of Dr. Wilkins, Director, Division of School Hygiene, will be read with interest. Specially do I commend his remarks as to the necessity of invoking the sympathy of parents in the work of the School Medical Officers; and, though I realize it must largely be left to the discretion of the School Medical Officers as to how this can best be done, I have no doubt from personal experience that the best scheme is to notify parents when their children are to be inspected and invite them to be present during the examination.

I quite agree with Dr. Wilkins as to the school nurse if her energies are properly directed. The school nurse has an opportunity of getting right down to the most important facts regarding the home life and environment of the child, which has so important a bearing on its health. In fact, the school nurse should combine the part of the Health Visitor as in the Public Health Service of the

United Kingdom and other lands where the appointment of such officers is considered an essential part of the service. That some sixty thousand children have been examined completely, and some sixty thousand more examined for more important defects, speaks for itself as to the energies of the School Medical Officer, and in that connection it is especially encouraging to note that the medical treatment of school-children is now more assuredly brought about as the result of the reports of the School Medical Officers.

Of special interest are the comments in connection with the results from tooth-brush drill, which was initiated by Dr. Gunn, Medical Officer of Schools for the Wanganui district. It is fortunate that Dr. Gunn was able to enlist the sympathy of her Education Board, not only in this matter, but also in the establishment of a camp for children under the ordinary standard of nutrition, and with such excellent results.

Nursing.

There are some matters of special interest in the report of the Director, Division of Nursing. There is no doubt that there should be reciprocity in registration of nurses throughout the Empire. The need for some such system of reciprocity need not, however, be laboured; the necessity for such becomes every day more apparent.

Now that the Nurses Registration Act has at last come into force in the United Kingdom we are anxiously awaiting the initiative of those responsible in the Mother-country in this direction. The same may also be said of the registration of midwives. It is not reasonable that midwives from the United Kingdom should, on a certificate of having passed an examination after three or six months' training, expect registration in New Zealand, where we only allow a pupil to go up for examination in midwifery on producing evidence of twelve months' training in a recognized maternity school. We have already informed the Central Midwives Board that we will not recognize or register midwives from the United Kingdom who cannot produce evidence of an equivalent length of training.

It is to be regretted that the Nurses Superannuation Act has had to be postponed, but those of us who have been striving for years in this direction are confident that the public at last is determined to see justice done this very deserving class of public servants.

Dental Hygiene.

The very modest report of Mr. Hunter, Director of the Division of Dental Hygiene, only briefly outlines the excellent work of this, the most recently established branch of this Department. Any one visiting the dental clinic in Whitmore Street could hardly fail to be struck by the tenderness and skill with which this very delicate work is carried out, and even those who are opposed to the scheme of State dental nurses would have to admit that thorough measures—only too often necessary to clean up neglected mouths—could hardly be conducted with more care and skill than by these nurses, under the supervision of Mr. Hunter and his enthusiastic assistants.

I think that there are few parents who would object to pay the small fees necessary to ensure that this most important work in the interests of the health of their children, and the community generally, be not curtailed by lack of skilled operators and their necessary equipment.

Maori Hygiene.

"We understand the Maori and he understands us." In these words Dr. Te Rangi Hiroa represents the results of his excellent work among his compatriots. With him, almost solely, has rested the initiative of the reorganization of the old Maori Health Councils established under the Health Act of 1900. Under the Health Act of 1920 Dr. Te Rangi Hiroa has been able to arrange that the Councils controlling Maori health districts should be administered through the Department. By these means a great work has been accomplished in the interests of the health of our Maori countrymen.

Excellent work has also been done under the direction of Dr. Te Rangi Hiroa as regards anti-typhoid inoculation of the Natives. Comparatively little enteric is now reported amongst the Natives as compared with a few years ago. The Maoris are, as Dr. Te Rangi Hiroa says, generally speaking, amenable to prophylactic treatment, except where they come under the influence of the ignorant pakehas.

It is also a triumph to Dr. Te Rangi Hiroa and his predecessor, Sir Maui Pomare, whom His Majesty has been pleased to honour, that owing to their example and advice the general health of the Maori has been so improved that an increase of 6 per cent. is recorded in the population returns, and the fact that during recent large gatherings, or huis, where some thousands of the Maoris were congregated together, not the slightest fault could be found with the sanitary arrangements, "and the organization would have done credit to any military camp."

SECTION 4.—BOARD OF HEALTH, ETC.

During the year Mr. T. F. Martin resigned his position as a member of the Board of Health, representing the New Zealand Municipal Association, and his place was taken by Mr. R. A Wright, M.P., Mayor of Wellington.

Five meetings of the Board were held during the year, and much important business was transacted. In the exercise of its powers under section 22 of the Health Act, the Board issued requisitions upon six local bodies calling upon them to undertake various sanitary works, some of which were of considerable dimensions. In such cases the Department follows up the matter to see that the local body gives due attention to the Board's requisition.

In addition the Board has given consideration during the year to a variety of important subjects, including—

(*a.*) The control of surgical operations in hospitals:
(*b.*) Maternal mortality in New Zealand (this matter aroused considerable public comment, and much interest was displayed in the Board's report on the subject):
(*c.*) Precautions against the introduction of plague into the Dominion:
(*d.*) The collection and disposal of refuse throughout the Dominion:
(*e.*) Consideration of the Hospitals Amendment Bill.

The services rendered so willingly by the members of the Board during the year are even now well worthy of public appreciation, and, if I may presume to prophecy, I feel that their future good work will more and more justify that wisdom which prompted the establishment of a Board of Health under the Act of 1920.

Medical Practitioners Act, 1914.

Five meetings were held during the year by the Medical Board. The following table, covering the past five years, summarizes the Board's work so far as the granting of applications by medical men for registration, &c., are concerned:—

—	1917.	1918.	1919.	1920.	1921.
Number on register on 1st January ..	962	969	985	1,015	1,064
Number added during year by registration	27	30	48	71*	60†
Number added during year by restoration	1	3	3	5	4
Number removed during year on evidence of death	21	17	20	25	10
Number removed during year by direction of Medical Board—					
Letter not delivered and returned to Registrar-General	..	..	1	..	10
Reported dead	..	..	..	..	7
Number removed during year by direction of Supreme Court	..	..	..	2	..
Number on register on 31st December ..	969	985	1,015	1,064	1,071

* Includes 36 with New Zealand qualifications. † Includes 28 with New Zealand qualifications.

The work of the Medical Board is largely of a confidential nature, and involves inquiries into charges of misconduct which from time to time are made against medical practitioners: A number of such cases have been dealt with during the year.

The Board has under consideration at the moment some suggested amendments to the Act which if passed into law should improve the present statute.

Masseurs Registration Act.

Six meetings of the Masseurs Registration Board constituted under the above Act were held during the year. At those meetings 174 applications for registration were considered, of which eleven were refused. The Board also held two examinations under the Act, nine candidates presenting themselves, of whom seven were successful. To date 279 names have been entered on the register.

Plumbers Registration Act, 1912.

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

Examinations under the Act were held in July and November. At the July examination 120 candidates presented themselves for the theoretical portion, and 101 for the practical, the results being that thirty-five candidates passed in the theoretical and thirty-three in the practical, whilst twenty-eight qualified for registration, and their names were duly placed on the register. At the November examination 110 candidates presented themselves for the theoretical part and 111 for the practical part, the pass results in each case being thirty-eight and forty-eight respectively. Forty-three qualified for registration, and had their names duly recorded on the register.

To date the names of 1,424 plumbers have been entered in the register, and thirty-two names removed through death.

During the year 1,129 pocket certificates of registration were issued.

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 17th April, 1921, was 1,218,913. This total does not include Maoris, whose numbers were separately determined as 52,751. These figures show that the white population of the Dominion has increased by some 11 per cent. since the preceding census of 1916, while the Maori population has increased by approximately 6 per cent. during the same period.

Births.

The births of 28,567 living children were registered in the Dominion during 1921, as against 29,921 in 1920 and a yearly average of 27,223 during the pre-war period 1910–14. The birth-rate for 1921 was thus 23·34 per 1,000 of mean population.

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

Births (Number and Rate) in New Zealand, 1912–21.

Year.	Total Number of Births registered.	Birth-rate per 1,000 of Mean Population.
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
1921	28,567	23·34

It will be seen that the number of births registered in 1921 is higher than in any preceding year with the exception of 1920, but the rate is exceedingly low, being, indeed, the second-lowest recorded in the Dominion.

Still-births.—Still-births, which are 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 number of such births, and their rate per 1,000 live births, in individual years for the quinquennium 1917–21.

Still-births (Number and Rate) in New Zealand, 1917–21.

Year.	Total Number of Still-births registered.	Rate of Still-births per 1,000 Live Births.
1917	694	24·6
1918	701	27·1
1919	680	27·8
1920	840	28·1
1921	903	31·6

The increasing ratio of still to live births as disclosed by this table is somewhat disquieting. It may only be that the phenomenon is due to increasing accuracy in registration. That there are other and deeper causes, however, would appear probable from the fact that the death-rate of infants in the first month after birth shows a somewhat similar behaviour. (Note: 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 1921 was 10,682, as compared with 12,109 in 1920 and a yearly average of 9,370 in the period 1910–14. The Government Statistician gives the crude death-rate for 1921 as 8·73 per 1,000 of mean population, and the standardized death-rate (International Index of Mortality) as 10·93.

The following table gives the number of deaths and the death-rate in the Dominion for the decennium 1912–21:—

Deaths (Number and Rate) in New Zealand, 1912–21.

Year.	Total Number of Deaths.	Crude (Actual) Death-rate.	Standardized Death-rate (Index of Mortality).
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
1921	10,682	8·73	10·93

The crude death-rate for the year (8·73 per 1,000 of mean population) is remarkably low, and constitutes a new record, the previous best figure being the rate of 8·87 in 1912.

Infant Mortality.—The infant-mortality rate for 1921 was 47·8 per 1,000 births. This rate is the second-best on record, and is only excelled by the figure for 1919 (45·3 per 1,000 births).

The next table enables an estimate to be formed of the progress in infant-welfare work in New Zealand, and shows the relative obstinacy of the first-month mortality to react to the administrative measures which have proved so successful at later ages.

Infant Mortality in New Zealand, 1900–21.—Proportion of Deaths of Infants under Twelve Months to every 1,000 Births in Individual Years.

Year.	Under One Month.	One Month and under Twelve Months.	Total under Twelve Months.
1900	31·1	44·1	75·2
1901	29·8	41·6	71·4
1902	32·2	50·7	82·9
1903	31·7	49·4	81·1
1904	29·4	41·6	71·0
1905	30·1	37·4	67·5
1906	29·6	32·5	62·1
1907	30·4	58·4	88·8
1908	31·2	36·7	67·9
1909	29·9	31·7	61·6
1910	30·2	37·5	67·7
1911	28·5	27·8	56·3
1912	30·1	21·1	51·2
1913	29·7	29·5	59·2
1914	28·9	22·5	51·4
1915	29·2	20·8	50·0
1916	27·0	23·7	50·7
1917	27·9	20·3	48·2
1918	26·7	21·7	48·4
1919	28·4	16·9	45·3
1920	30·8	19·7	50·5
1921	30·7	17·1	47·8

SECTION 2.—NOTIFIABLE DISEASES.

The year under review was characterized by an increased amount of scarlet fever and erysipelas, an undue and somewhat disturbing prevalence of acute poliomyelitis, and a marked and most satisfactory decline in the incidence of influenza and pneumonia.

Scarlet Fever.

The course of scarlet fever in New Zealand during the last five years is briefly shown in the table below. It will be seen that in 1921 the disease was more widely prevalent than in any year since 1917, but was fortunately mild in type.

Scarlet Fever in New Zealand, 1917–21.

Year.	Notifications.		Deaths.	
	Number.	Rate per 10,000 of Mean Population.	Number.	Rate per 10,000 of Mean Population.
1917	2,755	25·07	30	0·27
1918	1,654	14·99	30	0·27
1919	1,521	13·31	23	0·20
1920	1,248	10·46	15	0·13
1921	1,845	15·07	24	0·19

Diphtheria.

As the next table shows, there has been a most substantial decline in diphtheria since 1917 and 1918. It must be admitted, however, that the disease still remains all too prevalent in the Dominion.

Diphtheria in New Zealand, 1917–21.

Year.	Notifications.		Deaths.*	
	Number.	Rate per 10,000 of Mean Population.	Number.	Rate per 10,000 of Mean Population.
1917	5,458	49·66	237	2·16
1918	5,539	50·22	189	1·71
1919.	3,499	30·61	157	1·37
1920	2,442	20·48	95	0·81
1921	2,611	21·33	107	0·87

* Figures include deaths from croup.

An increased epidemicity of diphtheria during the past few years has been noted in England, the States of Australia, and other countries, as well as in New Zealand. It has to be acknowledged that the methods customarily adopted in the past to combat this disease have not been effective in staying its progress. Much, however, is expected of the newer methods of control based on recent American investigation. In the determination by the Schick test of those susceptible to diphtheria, and the subsequent immunization of these last with toxin-antitoxin injections, we have a procedure which, judiciously used, should be a valuable weapon in the campaign against the disease. The procedure, it should be stated, has already been adopted in New Zealand in the case of certain institutional and one school outbreak, with most encouraging results. It is hoped in the coming year to make an extended trial of the method.

Enteric Fever.

The position as regards this disease for the period 1917–21 is shown in the table below :—

Enteric Fever in New Zealand, 1917–21.

Year.	Notifications.		Deaths.	
	Number.	Rate per 10,000 of Mean Population.	Number.	Rate per 10,000 of Mean Population.
1917	653	5·76	41	0·37
1918	423	3·83	33	0·30
1919	477	4·17	34	0·30
1920	389	3·26	40	0·34
1921	451	3·68	24	0·19

The degree of prevalence of enteric fever in a community is generally regarded as affording a reasonably accurate index of the efficiency of the sanitary administration therein. This being the case, the low level of the death-rate from this disease in the Dominion as shown by the above table is a matter for congratulation.

Tuberculosis.

The notifications for 1921 show a slight decline in comparison with the preceding years, the figures being respectively 1,207 and 1,305.

The next table, based upon the death returns, gives a truer idea of the variations in the prevalence of this disease during the period 1912–21 :—

Tuberculosis in New Zealand, 1912–21.

Year.	Number of Deaths from Tuberculosis.	Death-rate from Tuberculosis per 10,000 of Mean Population.	Percentage of Total Deaths from all Causes.
1912	716	6·89	7·77
1913	812	7·60	8·02
1914	728	6·67	7·17
1915	693	6·30	6·95
1916	742	6·74	7·00
1917	755	6.87	7·17
1918	832	7·54	5·08
1919	762	6·71	7·05
1920	851	7·21	7·03
1921	793	6·48	7·42

The position disclosed by the table is on the whole a satisfactory one. It will be seen that the death-rate from tuberculosis for the year 1921 was exceptionally low, being, indeed, the second-lowest rate yet recorded in the Dominion. Of the total of 793 deaths in 1921, 640 were assigned to pulmonary tuberculosis and the remaining 153 to other forms of tuberculosis.

Cerebro-spinal Meningitis.

This disease again shows an improvement, only 56 cases, with 23 deaths, being recorded in 1921, as against 79 cases and 34 deaths in 1920.

Acute Poliomyelitis.

This disease showed a substantial increase in comparison with recent years, 267 cases, with 9 deaths, being recorded in 1921, as compared with 46 cases and 2 deaths in 1920. Although this represents a much wider distribution of the disease than for some years past, the prevalence did not approximate to that of 1916, in which year 1,018 cases were notified.

Puerperal Septicæmia.

The following table shows the course of this disease for the quinquennium 1917–21 :—

Puerperal Septicæmia in New Zealand, 1917–21.

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	2·22
1921	178	6·23	48	1·68

It is well known that the returns of notifications in puerperal septicæmia are, as a general rule, far from complete. The marked rise in the notification-rate or 1921, therefore, does not necessarily indicate an increased prevalence of the disease for this year, but represents rather an increased observance of the laws regarding notification. The returns of deaths provide a more accurate presentation o the position. The fact that 1921 had the lowest death-rate of the series is so far satisfactory.

The whole subject of maternal mortality in New Zealand was investigated during the year by the Board of Health. A special committee of the Board was set up, and made certain recommendations, the adoption of which may be expected to reduce the incidence of a disease that can only be regarded as largely, it not wholly, preventable.

Erysipelas.

The information available for this disease shows that there was a marked increase in prevalence during the year under review, 228 cases being reported in 1921, as against 156 cases in 1920 and 73 in 1919.

Influenza.

One of the brightest features of the year under review was the low level of influenza. The figures for the severer types of this disease (the pneumonic, septicæmic, and fulminant varieties) were 295 notifications and 105 deaths in 1921, as compared with 470 notifications and 480 deaths in 1920.

Acute Primary Pneumonia.

This also was much less prevalent than in 1920, the first complete year for which figures are available. In 1921 1,029 cases were notified, as compared with 1,933 cases in the previous year.

Leprosy.

Two cases of this disease, both Chinese, were notified during 1921, and were duly removed to the hospital on Quail Island, Lyttelton Harbour. At the close of the year there were in this institution a total of eight patients, all adult males. Of these the nationality was as follows: Three whites (none New-Zealand-born), two Maoris, one half-caste Samoan, and two Chinese.

Recent important advances have been made in the treatment of leprosy, whereby, it is stated, a substantial percentage of apparent cures has been effected. The Americans particularly claim good results from the use of the ethyl esters prepared from the fatty acids of chaulmoogra oil. Through the courtesy of the Consul-General for the United States of America, a supply of this preparation wa obtained from Honolulu, where the original work has been carried out, and a commencement has been made of its use.

Fuller information concerning the distribution of the above diseases, together with details of the remaining notifiable diseases, is contained in the subjoined tables.

Table A.—Notifiable Diseases in New Zealand, 1921 showing Distribution by Months.

Month.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	C.S. Meningitis.	Acute Poliomyelitis.	Puerperal Septicæmia.	Pneumonic, Fulminant, and Septicæmic Influenza.	Acute Primary Pneumonia.	Varicella.	Erysipelas.	Tetanus.	Trachoma.	Hydatids.	Lethargic Encephalitis.	Anthrax.	Ophthalmia Neonatorum.	Actinomycosis.	Variola.	Chronic Lead Poisoning.	Leprosy.	Beri-beri.	Food Poisoning.	Totals.
Jan. ..	60	126	27	100	9	46	7	7	65	18	5	1	1	3	2	..	5	..	..	..	..	..	..	482
Feb. ..	107	154	56	100	5	84	4	14	43	13	10	1	1	2	3	..	4	1	..	..	..	..	..	602
Mar. ..	124	204	47	105	5	60	7	2	48	20	15	1	1	1	1	1	3	..	1	..	..	..	..	646
April ..	160	235	45	85	6	26	6	4	43	48	10	..	..	2	1	..	3	..	..	..	..	..	..	674
May ..	180	291	34	96	2	12	5	9	86	101	18	3	1	2	1	..	4	..	..	..	..	..	..	845
June ..	194	294	21	80	3	3	18	15	96	91	22	2	..	7	3	..	2	..	1	..	..	..	..	852
July ..	194	290	42	94	7	3	14	26	106	89	31	..	..	4	3	..	4	..	..	1	..	..	..	908
Aug. ..	203	224	50	126	8	6	34	49	140	153	28	2	2	2	2	..	4	1	..	..	..	..	..	1,034
Sept. ..	188	234	19	96	3	3	33	85	139	153	27	1	1	2	1	..	2	..	..	..	..	..	1	988
Oct. ..	161	204	32	112	3	5	18	36	73	160	23	4	1	6	3	..	1	..	..	..	1	1	..	844
Nov. ..	157	184	41	113	3	9	16	22	95	209	19	4	2	3	2	..	1	..	..	..	1	1	..	882
Dec. ..	117	171	37	100	2	10	16	26	95	154	20	2	2	2	1	1	2	..	..	..	..	..	..	758
Totals ..	1,845	2,611	451	1,207	56	267	178	295	1,029	1,209	228	21	12	36	23	2	35	2	2	1	2	2	1	9,515

Table B.—Notifiable Diseases in New Zealand, 1921, showing Distribution by Hospital Districts.

Hospital District.	Estimated Population (excluding Maoris).	Estimated Maori Population.	Scarlet Fever.	Diphtheria.	Enteric Fever.	Tuberculosis.	Cerebro-spinal Meningitis.	Acute Poliomyelitis.	Puerperal Septicæmia.	Pneumonic, Fulminant, and Septicæmic Influenza.	Acute Primary Pneumonia.	Varicella.	Erysipelas.	Tetanus.	Lethargic Encephalitis.	Hydatids.	Trachoma.	Ophthalmia Neonatorum.	Actinomycosis.	Variola.	Chronic Lead Poisoning.	Leprosy.	Beriberi.	Anthrax.	Food Poisoning.	Totals.
North Auckland Health District.																										
Mangonui	4,150	2,555	..	..	31	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33
Whangaroa	875	685	..	..	17	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	18
Bay of Islands	3,975	2,612	2	6	16	11	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36
Hokianga	3,025	3,859	..	..	8	5	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	15
Kaipara	11,275	1,284	15	6	1	11	..	1	1	..	6	21	4	..	..	..	..	..	..	1	..	..	..	..	..	67
Whangarei	13,650	1,095	8	3	4	4	..	..	..	1	6	6	1	..	2	..	..	..	..	..	..	..	..	..	..	35
Auckland Health District.																										
Auckland	181,350	1,685	292	339	104	154	13	21	30	57	230	208	40	4	7	3	1	1	..	..	..	..	..	..	..	1,504
Waikato	60,900	8,139	104	232	35	55	5	3	7	17	106	49	10	..	..	1	1	1	..	..	..	..	..	..	..	626
Thames	15,200	1,365	33	28	8	11	2	..	5	7	22	9	2	..	..	4	..	..	..	..	..	..	..	..	..	131
Waihi	4,975	..	10	1	..	..	..	..	1	3	37	..	2	..	..	..	..	1	..	..	..	..	..	..	..	55
Coromandel	2,450	300	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Tauranga	6,825	1,716	16	10	2	5	..	..	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	39
Bay of Plenty	6,700	4,201	1	18	28	4	..	1	1	5	4	3	1	2	..	..	..	..	..	..	..	..	..	..	..	68
Taumarunui	9,600	1,081	11	25	5	4	1	3	2	2	4	6	1	..	..	..	..	..	..	..	..	..	..	..	..	64
Hawke's Bay Health District.																										
Waiapu	2,275	2,714	2	2	29	5	..	..	2	..	1	4	..	..	..	..	..	1	..	..	..	..	..	..	..	46
Cook	23,200	1,755	45	13	17	18	4	2	5	2	46	16	1	1	..	..	1	1	..	..	..	..	..	..	..	172
Wairoa	4,250	2,555	..	2	14	15	..	..	..	..	28	5	2	..	1	..	..	..	..	..	..	..	..	..	..	67
Hawke's Bay	35,750	1,203	57	29	12	59	1	8	20	46	36	88	9	1	2	1	..	1	..	..	..	..	..	..	..	370
Wanganui and Taranaki Health District.																										
Taranaki	27,250	1,702	85	65	10	11	2	11	3	8	22	6	1	2	..	1	..	..	..	..	..	..	..	..	..	227
Stratford	10,525	19	32	6	2	1	1	1	1	..	36	..	2	..	..	..	..	..	..	..	..	..	..	..	..	82
Hawera	18,380	882	28	29	2	12	..	9	5	9	23	4	3	..	..	..	1	1	..	..	..	..	..	..	..	126
Patea	5,400	276	5	10	4	3	..	2	2	2	3	1	1	1	..	..	..	..	..	..	..	..	..	..	..	34
Wanganui	47,750	2,352	46	168	15	29	4	33	11	13	40	30	4	1	..	..	..	..	..	..	..	..	..	..	..	394
Wellington Health District.																										
Waipawa	21,150	727	54	26	1	17	..	1	6	..	18	13	4	..	..	3	1	..	..	..	..	..	..	..	..	144
Palmerston North	48,275	1,778	123	129	17	19	2	11	5	6	24	67	5	..	..	3	1	3	..	..	..	..	..	..	..	415
Wellington	111,881	458	226	275	18	138	2	18	11	31	97	196	32	1	4	1	2	6	1	..	1	2	2	..	1	1,065
Wairarapa	34,025	881	91	59	1	16	1	6	..	6	29	58	2	1	1	3	..	..	..	..	..	..	..	..	..	274
Wairau	13,000	86	25	9	..	6	1	2	2	1	..	8	..	2	..	..	..	..	..	..	..	..	..	..	..	56
Picton	3,375	287	1	5	..	..	1	..	..	..	1	3	1	..	..	..	1	..	..	..	..	..	..	..	..	13
Nelson	26,525	138	27	87	7	4	..	1	..	8	5	3	..	..	1	..	..	..	..	..	..	..	..	..	..	143
Canterbury Health District.																										
Westland	7,775	56	1	18	3	4	..	1	..	..	3	13	..	..	..	1	..	1	..	..	..	..	..	..	..	45
Buller	10,350	25	20	25	..	6	3	3	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61
Inangahua	4,400	..	9	6	..	13	..	1	1	1	13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44
Grey	13,025	..	5	41	2	7	1	..	1	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..	..	71
North Canterbury	143,976	740	209	471	12	280	4	52	27	36	109	137	53	2	2	9	1	7	..	..	..	..	..	2	..	1,413
Ashburton	17,175	17	23	17	1	15	..	15	2	2	7	32	5	1	..	2	..	..	1	..	..	..	..	..	..	123
South Canterbury	39,975	217	69	37	9	26	..	13	5	9	19	26	3	..	..	1	..	1	..	..	..	..	..	..	..	218
Otago Health District.																										
Waitaki	16,350	37	36	14	..	27	..	8	1	2	13	19	9	1	1	2	..	..	..	..	..	..	..	..	..	133
Otago	96,700	92	50	324	16	149	4	28	14	14	28	145	18	1	1	..	1	10	..	1	..	..	..	..	..	804
South Otago	17,500	31	5	1	..	2	..	..	..	..	1	9	..	..	..	..	..	..	..	..	..	..	..	..	..	18
Vincent	5,400	..	3	11	..	4	..	1	..	1	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	24
Maniototo	2,975	..	7	6	..	11	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25
Southland	55,825	47	64	49	..	42	3	9	2	4	4	10	7	..	1	1	..	..	..	..	..	..	..	..	..	196
Wallace and Fiord	11,200	93	5	9	..	3	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	20
Totals	1,200,587	49,745	1,845	2,611	451	1,207	56	267	178	295	1,029	1,209	228	21	23	36	12	35	2	2	1	2	2	2	1	9,515

Table C.—Notifiable Diseases in New Zealand, 1921, showing Distribution by Age and Sex.

Disease.	Under 1 Year.		1 to 5 Years.		5 to 10 Years.		10 to 15 Years		15 to 20 Years.		20 to 25 Years.		25 to 30 Years.		30 to 35 Years.		35 to 40 Years.		40 to 45 Years.		45 to 50 Years.		50 to 55 Years.		55 to 60 Years.		60 to 65 Years.		65 to 70 Years.		70 to 75 Years.		75 to 80 Years.		80 Years and over.		Total Cases at all Ages	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Scarlet fever	1	5	187	202	276	453	113	214	32	71	29	44	14	45	20	55	16	24	10	13	4	6	1	6	1	1	..	..	1	1	..	..	..	..	..	..	705	1,140
Diphtheria	14	11	301	307	423	459	126	233	71	140	52	104	36	89	32	60	23	47	12	24	6	11	4	9	3	5	2	4	..	2	..	1	..	..	..	..	1,105	1,506
Enteric fever	..	..	19	20	35	44	40	18	45	26	28	22	18	27	13	12	20	11	14	7	7	8	6	3	2	..	..	2	2	..	1	..	..	..	1	..	251	200
Tuberculosis	1	2	6	8	18	19	20	28	51	79	102	127	105	89	92	69	75	60	63	32	43	12	33	7	25	8	8	6	6	4	..	3	3	2	..	1	651	556
Cerebro-spinal meningitis	3	2	6	7	8	2	7	1	3	4	1	2	1	..	5	..	1	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	37	19
Acute poliomyelitis ..	6	3	73	75	42	35	15	10	5	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	144	123
Puerperal septicæmia ..	..	..	..	..	..	..	..	..	..	13	..	35	..	69	..	37	..	22	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	178
Pneumonic, fulminant, and septicæmic influenza	..	1	12	7	15	12	11	6	16	9	14	8	9	14	17	15	37	11	15	9	8	6	9	5	7	2	6	4	2	2	1	3	2	..	..	..	181	114
Acute primary pneumonia	31	14	118	94	101	62	65	46	46	26	35	10	33	13	30	23	43	22	38	14	34	13	18	13	20	4	11	10	10	10	3	5	9	4	1	..	646	383
Varicella	18	26	141	149	284	313	75	95	16	25	13	18	8	7	6	3	3	6	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	566	643
Erysipelas	4	4	3	5	1	3	..	4	4	2	1	4	9	9	8	9	15	18	12	17	13	20	12	11	3	16	5	4	2	3	5	2	..	..	..	..	97	131
Tetanus	..	1	1	2	3	2	3	..	1	1	1	..	1	..	2	..	..	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	14	7
Lethargic encephalitis ..	..	..	3	4	..	..	2	..	2	1	..	..	1	..	2	..	1	2	2	..	..	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	15	8
Hydatids	..	..	3	2	..	1	1	1	1	1	1	2	4	4	2	5	3	..	..	1	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	1	15	21
Trachoma	..	..	..	..	..	2	1	1	1	..	1	..	2	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	3
Ophthalmia neonatorum	21	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	14
Actinomycosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Variola	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Chronic lead-poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	..
Beri-beri	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Food-poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Totals	99	83	873	882	1,206	1,407	480	657	294	398	281	376	243	368	233	288	238	223	168	121	117	76	85	55	66	38	33	31	24	23	10	15	14	6	2	2	4,466	5,049

SECTION 3.—NON-NOTIFIABLE DISEASES.

Measles and Whooping-cough.

These two diseases, which were widely epidemic in close association during 1920, were considerably less prevalent in 1921. The number of deaths due to these causes in the year under review were respectively 47 and 49, as compared with 122 and 107 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, 1912–21.*

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.
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
1921	1,044	10,682	8·53	9·77

Fuller information upon this subject, together with a discussion upon the causes which have contributed to the rising cancer death-rate in the Dominion, will be found in an article by the Chief Compiler, Census and Statistics Office, in the Year-book for 1917.

Venereal Diseases.

The venereal clinics established in the four main centres in 1919 continue to do good work. The following table shows in concise form the results of their operations during the past year:—

Venereal Clinics—Cases treated during Year ended 31st December, 1921.

—	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	100	44	80	10	46	21	55	11	281	86
Soft sore	25	..	8	..	6	..	..	..	39	..
Gonorrhœa	345	24	298	11	139	35	55	9	837	79
No venereal disease	73	25	52	25	62	31	28	2	215	83
Total attendances of all persons at the out-patient clinic who were suffering from—										
Syphilis	1,759	474	2,089	616	903	473	505	84	5,256	1,647
Soft sore	72	..	16	..	45	..	..	..	133	..
Gonorrhœa	9,232	141	19,569	520	3,968	902	814	67	33,583	1,630
No venereal disease	227	35	89	35	215	187	31	1	562	258
Aggregate number of "in-patient days" of treatment given to persons suffering from										
Syphilis	..	..	1,711	..	619	44	169	106	2,499	150
Gonorrhœa	..	..	4,098	..	735	161	335	166	5,168	327
Number of doses of salvarsan substitutes given	1,213	394	1,032	380	423	233	529	154	3,197	1161
Examination of pathological material: Specimens from persons attending at treatment centre which were examined at this centre for—										
Detection of spirochætes	23	..	19	..	16	..	1	..	59	..
Detection of gonococci	1,605	138	763	199	253	110	80	6	2,701	45
Wasserman reaction	289	80	518	115	213	140	96	12	1,116	347
Others	89	..	46	1	76	56	..	..	211	57

An important advance was made during the year through the Department undertaking to provide free treatment for sailors on oversea ships suffering from venereal disease. This arrangement was in accordance with a scheme outlined by the Office International d'Hygiene Publique, and was in anticipation of a direct request from that body to undertake such treatment. There is no doubt that the measure is a step in the right direction, and will reduce materially the importation of these diseases from overseas.

SECTION 4.—QUARANTINE AND PORT SANITARY WORK.

During the year under review considerable time was devoted to the preparation of a set of up-to-date regulations relating to quarantine. These finally became operative as from the 1st December, 1921.

The occurrence of plague in Australia necessitated extreme precautions in order to guard the Dominion against the invasion of this disease. Up to the time of writing (May, 1922) these measures have been successful, and it is hoped that the most serious risks are now passed. This opportunity is taken of acknowledging the courtesy of the Federal and New South Wales Departments of Health in supplying full and prompt information concerning the course of the disease in Australia, and the measures so successfully applied to limit its spread.

Details concerning the port health inspection of overseas ships are contained in the next table.

PORT HEALTH INSPECTION OF OVERSEAS VESSELS DURING THE YEAR ENDED 31ST DECEMBER, 1921.

Port.	Number of Vessels inspected.	Remarks as to Cases of Infectious Diseases on Board or Persons not allowed to land.
Whangarei	3	1 case infectious disease reported.
Auckland	300	7 cases infectious disease reported; 42 infirm and 36 prohibited immigrants reported.
Thames	1	
Whakatane	2	
Gisborne	11	
Napier	11	
Waitara	1	
New Plymouth ..	8	
Wanganui	16	
Wellington	164	28 cases infectious and 11 cases contagious disease reported. 37 infirm and 19 prohibited immigrants reported.
Picton	2	
Nelson	1	
Westport	4	
Greymouth	5	
Lyttelton	61	3 cases infectious and 3 cases contagious disease reported.
Timaru	11	
Oamaru	2	
Port Chalmers	36	2 cases infectious disease reported.
Bluff	25	
Total	664	

SECTION 5.—BACTERIOLOGICAL LABORATORIES.

The facilities available in the Dominion for the bacteriological investigation of disease are being gradually extended. Two new branch laboratories were opened during the year at Whangarei and Hamilton respectively. Apart from the main laboratories in the four centres, there are now six branch laboratories established in connection with the public hospitals of the subsidiary centres of the Dominion.

The table below, which summarizes the work of a definite public-health nature performed in these laboratories, shows the importance and wide range of the examinations undertaken in these institutions.

WORK IN BACTERIOLOGICAL LABORATORIES.

Table showing Public-health Work performed in Bacteriological Laboratories during the Year ended 31st December, 1921.

Disease.	Number of Examinations.																	
	Positive.									Negative.								
	Whangarei.	Auckland.	Gisborne.	Napier.	Palmerston North.	Wellington.	Christchurch.	Dunedin.	Invercargill.	Whangarei.	Auckland.	Gisborne.	Napier.	Palmerston North.	Wellington.	Christchurch.	Dunedin.	Invercargill.
Diphtheria diagnosis ..	1	452	7	44	147	791	554	299	65	12	1,179	35	394	559	2,079	2,737	2,707	418
Diphtheria clearance ..	7	..	5	162	158	..	1,486	774	121	3	..	23	111	300	..	5,317	1,452	202
Tuberculosis—																		
Sputum	13	127	11	135	32	216	64	118	62	58	674	59	346	191	617	517	453	197
Cerebro-spinal fluid ..	..	..	..	1	2	1	..	1	2	..	1	1	14	15	26	10	29	7
Urine	3	1	1	10	13	6	10	20	3	9	9	4	111	62	71	125	65	41
Pleuritic fluid ..	..	..	..	..	..	1	..	..	..	..	..	..	16	..	19	5	..	..
Fæces	1	..	..	..	..	1	..	..	..	..	..	..	21	..	5	2	..	..
Other material ..	1	..	1	2	1	10	3	5	1	3	4	9	26	16	48	27	21	30
Typh'd-fever diagnosis—																		
Agglutination tests ..	3	35	14	11	17	47	12	1	..	2	72	16	96	30	402	64	38	12
Blood-culture ..	..	4	1	..	..	1	..	1	..	4	7	1	4	..	1	12	6	..
Fæces	..	..	..	11	..	7	7	..	..	2	43	26	57	17	40	296	9	2

Table showing Public-health Work performed in Bacteriological Laboratories—continued.

Disease.	Number of Examinations.																	
	Positive.									Negative.								
	Whangarei.	Auckland.	Gisborne.	Napier.	Palmerston North.	Wellington.	Christchurch.	Dunedin.	Invercargill.	Whangarei.	Auckland.	Gisborne.	Napier.	Palmerston North.	Wellington.	Christchurch.	Dunedin.	Invercargill.
Typh'd-fever clearance—																		
Fæces	..	4	1	2	4	1	2	1	..	..	..	8	9	..	12	24	5	1
Urine	..	5	3	6	4	5	..	..	..	17	29	17	26	17	32	24	1	..
Typhoid - fever: Pus from wound	..	..	1	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..
Cerebro - spinal - fever diagnosis—																		
Swabs	..	2	3	..	..	..	4	2	3	..	16	50	18	20	1	15	10	18
C.S. fluid	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	12	..	..
Cerebro - spinal - fever clearance: Swabs	..	..	..	..	..	..	..	..	3	..	..	1	..	..	..	..	7	12
Gonorrhœa	4	73	2	23	25	703	83	5	7	22	208	23	126	33	374	331	103	39
Ophthalmia neonatorum: For gonococcus	2	..	2	..	..	6	6	..	..	1	..	1	8	4	6	6	3	..
Syphilis, spironema pallidum	..	..	1	2	..	6	1	..	..	..	2	2	1	..	11	4	..	6
Syphilis, Wasserman, reaction	..	280	..	..	..	318	164	89	..	..	510	..	..	..	610	685	320	..
Hydatid disease ..	..	..	..	2	2	3	3	..	2	..	..	3	8	4	1	13	5	5
Plague: Examination of rats	..	..	..	..	..	..	..	..	..	10	13477	22	32	..	1,410	51	109	27
Tetanus	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..
Vincent's angina ..	..	1	5	12	..	12	..	..	3	..	2	..	17	..	9	..	..	..
Leprosy	..	1	..	..	..	2	..	..	..	..	17	..	6	..	7	..	..	..
Anthrax	..	..	..	..	..	1	1	..	..	..	..	..	1	..	..	6	..	1
Astinomycosis ..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	2	1	..	1
Others	..	..	15	12	..	13	6	6	..	..	14	2	57	..	10	8	..	5

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 6.—WORKING OF THE SALE OF FOOD AND DRUGS ACT.

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 1920 are supplied for the purposes of comparison.

TABLE 1.—SHOWING SAMPLES RESPECTIVELY OF MILK AND OTHER FOODSTUFFS TAKEN AND DEALT WITH DURING THE YEAR ENDED 31ST DECEMBER, 1921.

Hospital District.	Number of Samples taken.		Number of Samples complying.		Samples not complying.					
					Number of Vendors.		Number of Warnings issued.		Number of Prosecutions recommended.	
	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.
Bay of Islands ..	..	1	..	1	..	..	..	..	..	..
Kaipara	7	27	7	16	..	3	..	2	..	1
Whangarei ..	27	4	24	4	3	..	..	..	3	..
Auckland	224	78	216	59	4	19	..	5	4	14
Waikato	33	11	33	7	..	4	..	..	..	2
Thames	6	15	6	12	..	3	..	..	..	2
Tauranga	8	4	8	2	..	2	..	..	..	1
Bay of Plenty ..	3	13	3	10	..	2	..	..	..	1
Taumarunui ..	23	6	22	2	1	4	..	..	1	2
Waiapu	2	15	2	15	..	..	..	..	..	..
Cook	63	6	61	4	2	2	..	2	2	..
Wairoa	5	17	5	12	..	5	..	3	..	2
Hawke's Bay ..	111	156	97	66	13	22	3	12	10	10
Taranaki	6	19	5	5	1	14	..	..	1	14
Stratford	11	13	10	8	1	5	1	..	..	5
Hawera	23	21	23	18	..	3	..	..	..	3
Patea	2	2	2	1	..	1	..	..	..	1
Wanganui	32	31	27	25	5	6	4	1	1	5
Waipawa	47	7	38	7	9	..	6	..	3	..
Palmerston North ..	70	7	63	3	7	4	4	..	3	4
Wellington	1,758	38	1,728	33	30	5	19	1	11	5
Wairarapa	104	10	86	8	18	2	10	..	8	4
Wairau-Picton ..	24	6	20	6	4	..	1	..	3	..
Nelson	62	11	62	9	..	2	..	..	..	2
Westland	44	29	39	28	5	1	3	..	2	1
Buller	3	14	2	4	1	8	1	1	..	6
Grey	10	4	9	3	1	1	..	..	1	1
North Canterbury ..	182	55	152	37	30	18	14	2	16	10
Ashburton	45	7	36	6	9	1	4	..	5	1
South Canterbury ..	54	16	49	9	5	7	..	..	5	4
Waitaki	90	17	83	13	7	3	4	..	3	2
Otago	104	67	99	55	5	10	3	5	2	5
South Otago ..	..	1	..	..	..	1	..	1	..	..
Southland	77	10	63	6	9	4	6	..	3	2
Totals, 1921	3,260	738	3,080	494	170	162	83	35	87	110
Totals, 1920	2,596	659	2,436	561	139	71	58	33	81	38

TABLE 2.—SHOWING THE RESULTS OF WEIGHING OF BREAD, BUTTER, AND OTHER FOODSTUFFS RESPECTIVELY DURING THE YEAR ENDED 31ST DECEMBER, 1921.

Hospital District.	Number of Samples weighed.			Number of Samples complying.			Samples not complying.								
							Number of Vendors.			Number of Warnings issued.			Number of Prosecutions recommended.		
	Bread.	Butter.	Other.	Bread.	Butter.	Other.	Bread.	Butter.	Other.	Bread.	Butter.	Other.	Bread.	Butter.	Other.
Hokianga ..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..
Bay of Islands ..	6	..	..	6	..	..	..	..	..	..	..	..	..	..	..
Kaipara ..	99	37	..	51	37	..	5	..	..	3	..	..	2	..	..
Whangarei ..	54	3	1	48	3	1	1	..	..	1	..	..	..	..	..
Auckland ..	626	377	115	476	294	112	33	20	1	8	7	..	8	..	1
Waikato ..	323	413	52	260	385	52	13	8	..	5	8	..	..	4	..
Thames ..	139	65	..	121	65	..	3	..	..	1	..	..	2	2	..
Tauranga ..	237	354	28	203	250	16	14	15	2	2	2	..	2	6	2
Bay of Plenty ..	235	62	..	309	58	..	4	2	..	1	..	..	1	..	..
Taumaranui ..	398	179	38	321	172	38	16	1	..	4	..	..	2	..	..
Waiapu ..	116	132	62	116	132	62	..	..	..	..	..	..	..	..	..
Cook	165	80	9	165	80	9	..	..	..	..	..	..	..	..	..
Wairoa ..	66	134	174	45	116	..	4	10	13	4	10	13	..	..	..
Hawke's Bay ..	292	514	254	200	441	110	16	11	13	15	11	12	1	..	1
Taranaki ..	3	..	..	2	..	..	1	..	..	..	..	..	1	..	..
Stratford ..	17	19	1	11	19	1	2	..	..	1	..	..	1	..	..
Hawera ..	114	69	2	114	69	2	..	..	..	..	..	..	..	..	..
Patea	15	..	..	15	..	..	..	..	..	..	..	..	..	..	..
Wanganui ..	163	225	78	163	225	78	..	..	..	..	..	..	..	..	..
Waipawa ..	290	390	6	274	390	6	3	..	..	1	..	..	2	..	..
Palmerston N. ..	241	210	6	241	204	6	..	2	..	..	..	..	..	2	..
Wellington ..	1,079	590	5	1,037	589	5	4	1	..	2	1	..	1	..	..
Wairarapa ..	890	808	..	880	795	..	1	3	..	..	1	..	1	2	..
Wairau-Picton ..	235	234	..	235	181	..	..	4	..	..	..	..	..	4	..
Nelson ..	285	277	..	269	277	..	2	..	..	..	..	..	2	..	..
Westland ..	168	151	41	168	145	41	..	3	..	..	3	..	..	..	..
Buller	30	..	..	28	..	..	1	..	..	1	..	..	..	..	..
Inangahua ..	..	12	..	..	11	..	..	1	..	..	1	..	..	..	..
N. Canterbury ..	218	226	..	186	216	..	6	9	..	2	7	..	..	2	..
Ashburton ..	296	72	..	252	71	..	6	1	..	4	1	..	1	..	..
S. Canterbury ..	146	207	..	133	207	..	3	..	..	3	..	..	..	..	..
Waitaki ..	52	12	..	52	12	..	..	..	..	..	..	..	..	..	..
Otago	383	262	93	379	256	86	4	4	3	4	4	3	..	..	..
South Otago ..	163	149	..	163	149	..	..	..	..	..	..	..	..	..	..
Vincent ..	12	34	1	12	22	1	..	1	..	..	1	..	..	..	..
Maniototo ..	25	10	..	23	10	..	1	..	..	1	..	..	..	..	..
Southland ..	255	225	3	255	225	3	..	..	..	..	..	..	..	..	..
Wallace ..	16	20	7	16	20	7	..	..	..	..	..	..	..	..	..
Totals 1921 ..	7,952	6,653	976	7,229	6,127	636	143	96	32	63	53	28	27	16	4
Totals 1920 ..	4,136	3,499	806	3,380	3,098	757	176	67	14	63	23	11	60	15	3

TABLE 3.—SHOWING INSPECTIONS OF PREMISES ENGAGED IN SELLING OR MANUFACTURING FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1921.

Hospital District.	Number of Premises inspected.*	Number of such Premises requiring Action *re* Sanitary Defects.	Number of Instances Articles were "seized" or "destroyed."	Hospital District.	Number of Premises inspected.*	Number of such Premises requiring Action *re* Sanitary Defects.	Number of Instances Articles were "seized" or "destroyed."
Mangonui	29	10	..	Wellington	1,273	43	7
Whangaroa	11	..	..	Wairarapa	916	26	1
Bay of Islands ..	55	12	3	Wairau-Picton ..	411	10	1
Hokianga	57	13	16	Nelson	251	3	..
Kaipara	92	27	6	Westland	120	11	75
Whangarei	244	62	2	Buller	370	37	54
Auckland	979	111	61	Inangahua	11	..	..
Waikato	1,542	120	11	Grey	147	14	16
Thames	1,084	213	1	North Canterbury ..	451	16	132
Tauranga	599	17	15	Ashburton	401	43	16
Bay of Plenty ..	262	40	..	South Canterbury ..	238	4	2
Taumarunui ..	529	110	3	Waitaki	318	19	19
Waiapu	267	16	6	Otago	300	20	27
Cook	172	12	15	South Otago	32	..	2
Wairoa	171	25	17	Vincent	53	..	3
Hawke's Bay ..	809	80	25	Maniototo	7	..	..
Taranaki	708	1	1	Southland	620	146	2
Stratford	111	7	..	Wallace and Fiord ..	20	1	..
Hawera	129	17	..				
Patea	35	8	..	Totals, 1921	15,843	1,359	429
Wanganui	690	3	16				
Waipawa	449	10	3	Totals, 1920	11,077	933	506
Palmerston North ..	880	40	2				

* Not number of inspections.

SECTION 7.—GENERAL.

Since the presence of plague was reported from Australia the efforts of the Department have been directed mainly towards the destruction of rats and the removal of conditions favourable to the introduction and spread of the disease. While the campaign towards this end has been most actively prosecuted in the four main cities, the smaller centres have not been neglected. The result is that to-day the Dominion is probably in a more sanitary condition than ever before.

In addition to the above, the usual routine work has been carried out in the direction of supervision of water-supplies and of refuse and sewage-disposal schemes, inspection of buildings, inspection of hotels, abatement of nuisances, &c.

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

PART III.—HOSPITALS.

During the year ended 31st March, 1922, the majority of the hospitals of the Dominion were visited by me.

In my last report the importance of certain aspects of hospital work and development was stressed, and I desire to call attention to certain of them again, and to point out others.

I regret that the task of taking over the military hospitals—viz., the Pukeora Sanatorium, Waipukurau; King George V Hospital, Rotorua; Queen Mary Hospital, Hanmer; and the Orthopædic Hospital, Trentham—has necessitated the performance of a volume of work which has prevented me from devoting that close attention to general hospital inspection which would otherwise have been given.

SECTION 1.—GENERAL SURVEY.

(1.) BASE HOSPITALS.

In my opinion one of the most important steps which has to be accomplished in the programme of hospital betterment in New Zealand is the organization of the four chief hospitals of the Dominion as base hospitals. To effect this, with its contingent annual special subsidy, means the amending of existing hospital legislation, to which, unfortunately, the present economic conditions are a stumbling-block. To take two matters alone—namely, the treatment of orthopædic cases, and the treatment of cases of cancer, requiring diathermy, the use of radium, or the application of X rays: At present adequate facilities do not exist for efficient treatment in our hospitals, save in those which will be in the future classed as "base hospitals"; and even in these hospitals many improvements have yet to be initiated and carried out before they can be regarded as wholly satisfactory.

(2.) HOSPITAL RECORDS.

The still unsatisfactory condition of the patients' records at many hospitals must be stressed, as also the importance of improving them at the earliest moment. It may safely be said that the better the way in which records are kept at any hospital the more efficient will be the treatment received by the patients at that hospital. Assistance, clerical and otherwise, should willingly be given by Boards to Medical Superintendents requiring it for the purpose of improving their records, and those of the largest hospitals which have not already done so should at the earliest moment possible appoint Assistant Medical Superintendents, one of whose chief duties would be to act as registrar of his hospital. These officers should be men senior in years and experience to the ordinary house surgeon, and, apart from other things, be able to assist the Medical Superintendent in supervising and co-ordinating the clinical work done by the hospital residents.

The difficulty in keeping records in the smaller hospitals, where there are often only part-time medical officers available for the work, is fully appreciated, but I am of opinion that much more could be done by the use of better organization and by devoting definite times to the carrying-out of what must be regarded as a measure designed to safeguard the interests of patients and practitioner alike.

The operation registers are much more carefully kept than they were two years ago, and are of a much more satisfactory pattern.

(3.) THE ADOPTION OF THE POLICY OF THE "MINIMUM STANDARD" AS ADVOCATED BY THE AMERICAN COLLEGE OF SURGEONS.

It is regretted that during the past year so little advance has been made in this matter in New Zealand, for there is convincing evidence to show that in Canada and the United States of America its adoption has been attended by the happiest results so far as hospital efficiency is concerned. The following description of the minimum standard is a very apt one:—

The minimum standard safeguards the care of every patient admitted to the hospital adopting it by insistence upon competence on the part of the doctor by thorough study and diagnosis in writing from every case, and by the checking up at least once each month of the clinical service of the hospital. It fixes responsibility throughout the hospital. It calls for the production sheets of the hospital. It encourages and even compels research. It is practicable, workable, and constructive. It costs effort rather than money. It defines the minimum service to the patient, which beyond all debate is considered essential. Above all, the minimum standard is designed to bring a sense of responsibility to those who have to do with the hospital that each patient admitted receives care scientifically sound. It is on this basis that a hospital should seek the confidence, good will, and support of its community.

The minimum standard involves the adoption of the following essentials:—

(1.) That the physicians and surgeons privileged to practice in the hospital be organized as a definite group or staff.

(2.) That membership upon the staff be restricted to physicians and surgeons who are competent in their respective fields, and worthy in character and in matters of professional ethics.

(3.) That the staff initiate, and, with the approval of the governing Board of the hospital adopt rules, regulations, and policies governing the professional work of the hospital. That these rules, regulations, and policies specifically provide—(*a*) That staff meetings be held at least once a month; (*b*) that the staff review and analyse at regular intervals the clinical experience of the staff in the various departments of the hospital, such as medicine, surgery, obstetrics, orthopædics, special departments. The clinical records of patients to be the basis for such review and analyses.

(4.) That accurate and complete case records be written for all patients, and filed in an accessible manner in the hospital: a complete case record being one, except in an emergency, which includes the personal history; the physical examination, with clinical bacteriological and X-ray findings, when indicated; the working diagnosis; the treatment, medical and surgical; the medical progress; the condition on discharge, with final diagnosis; and, in case of death, the autopsy findings, when available.

(5.) That clinical laboratory facilities be available for the study, diagnosis, and treatment of patients; these facilities to include at least chemical, bacteriological, serological, histological, radiographic and fluoroscopic services in charge of technicians.

The importance of the adoption of this policy by the staffs of our large hospitals cannot be overestimated, and it is hoped that during the coming year a very definite step in advance will be made.

A reform such as this can never be satisfactorily brought into being unless it is carried out wholeheartedly by the medical staffs of the hospitals concerned. The necessity and desirability of adopting and adapting the policy of the minimum standard by New Zealand hospitals cannot be too much stressed at the present time.

(4.) Clinical Laboratories.

There is no doubt that the general average of hospital work in New Zealand would be much improved by the establishment of clinical laboratories at more of our hospitals. During the year clinical laboratories have come into being at the Whangarei and Hamilton Hospitals with advantage to all concerned. Other hospitals at which they should be established as soon as staffs are available and arrangements can be made with the Hospital Boards responsible are New Plymouth, Wanganui, Masterton, Thames, Nelson, Timaru, and Greymouth.

(5.) Hospital Dietiticians.

I regret that no further progress has been made with the establishment of dietiticians, especially in our largest hospitals. Their advent would improve, as it has in America, the standard of cooking, minimize waste, and enable scientific exactness to be applied to the dieting of patients suffering from various metabolic disorders in a way which does not now exist. There is no doubt that the advances of recent years in the dietetic treatment of many, especially medical diseases, have not been accompanied by similar advances in the organization and methods practised in hospital kitchens.

As soon as the base-hospital subsidy is available the employment of a dietitician and the reorganization of their hospital kitchens, as a consequence, can be recommended to the Hospital Boards concerned as one of the first improvements to be effected by them.

(6.) Stores Systems.

I desire to emphasize again the unsatisfactory way in which the stores systems of many hospitals have developed. At the present time stores are too often found accommodated in rooms or odd stores widely separated from each other; insufficient Stores Ledgers exist; inventories, ward and otherwise, are rudimentary or do not exist, and even when existing are not regularly and periodically checked.

Better accommodation must gradually be provided at hospitals for hospital stores and equipment of all kinds, which should be housed in one building or one definite portion of the main building; one part of the accommodation to be used as a bulk store and the remainder for issue purposes. Only in this way can proper control be exercised, adequate measures of economy be encouraged, and means adopted of ordering stores in a systematic way.

Figures relating to the general statistics of the Hospital Boards—financial and otherwise—will be found, as usual, in the appendix to the annual report.

SECTION 2.—INSTITUTIONS.

Health Department's Institutions.

During the year the following institutions were taken over from the Defence Department and are now being administered by the Health Department:—

1. King George V Hospital, Rotorua.
2. Queen Mary Hospital, Hanmer Springs.
3. Pukeora Sanatorium, Waipukurau.

The first hospital mentioned is being used very largely for the treatment of orthopædic cases.

The Hospital at Hanmer is being used for the treatment of cases suffering from functional diseases of the nervous system, and arrangements are now in train whereby a certain amount of accommodation will be available shortly for the reception of women. This is certainly urgently required, as little or no provision exists at the present time in New Zealand for the effective treatment of this class of

patient. When the Hospital was taken over at Hanmer the activities previously carried on by the Tourist Department were also taken over, and what was previously the Sanatorium has been amalgamated with the Hospital under the control of the Medical Superintendent.

The Pukeora Sanatorium, now that the number of "service" patients is diminishing, is accommodating more civilian patients, and is available to all the Hospital Boards of the North Island.

In addition, the Cashmere Military Sanatorium, Christchurch, is to be taken over at once from the Defence Department, as also the Military Hospital, Trentham.

The control of the first of these institutions will, it is expected, be assumed by the North Canterbury Hospital Board, and wisely so, as the Military Sanatorium is next door to the large Sanatorium which has been developed by the North Canterbury Board on the Cashmere Hills, and will therefore be best administered by that body.

The following are statistics for the year ended 31st March, 1922, relating to patients treated at the institutions (other than maternity hospitals) administered by the Health Department:—

Statistics of Patients for the Year ended 31st March, 1922.

——	King George V. Hospital.	Queen Mary Hospital.	Otaki Hospital.	Otaki Sanatorium.	Pukeora Sanatorium.
Number of patients in hospital at commencement of year	234	80	8	36	137
Number of patients admitted during year	633	390	138	71	276
Total admitted	867	470	146	107	413
Patients discharged cured	251	102	103	50	7
Patients discharged relieved	273	218			215
Patients discharged unrelieved	116	67	20	17	48
Patients who died	17	1	14	2	13
Patients remaining in hospital at end of year	210	82	9	38	130
Total patients treated	867	470	146	107	413
Average daily number of patients treated	189	78	93	..	135
Average mean residence (in days) ..	95	71	24	6 mos.	120·26
Total number of deaths within twenty-four hours of admission	2	Nil.	3	Nil.	Nil.
Rate of mortality per cent. over total cases under treatment	1·73	·213	7·5	1·8	3·14
Total number of operations performed ..	279	Nil.	23	Nil.	Nil.
Rate of mortality per cent. of operations	Nil.	Nil.	4·25	Nil.	Nil.

King George V Hospital, Rotorua.

The number of children accommodated at this hospital has gradually increased during the year, and the number of "service" patients has diminished.

Apart from these classes of case the hospital is being used for ordinary hospital purposes for Rotorua and the surrounding district, and as such is discharging a most useful function, over two hundred patients from the district having been treated since July, 1921. Crippled children from all parts of the North Island have been admitted to the Hospital, and the treatment received by them has been productive of great good, fully 95 per cent. benefiting, many of them to a remarkable degree. It is to be hoped that the excellent work done at Rotorua in this way will not be interfered with in any degree by prevailing conditions of economic stringency.

A tribute must be paid to the excellent work carried out by the medical staff, nurses, and masseuses at this Hospital.

The special school established by the Education Department at the Hospital has done splendid work, and the improvement produced in the children as the result of its activities has been most noteworthy.

Queen Mary Hospital, Hanmer Springs.

Increasing numbers of non-service patients are being treated here, but men only so far, and the usefulness of the Hospital will be very materially increased when it becomes possible to admit women for treatment. This it is expected will be accomplished in a short while. The building of a suitable new block for women patients, together with accommodation for the nursing staff, is a matter which must receive attention as soon as it is possible to do so.

Otaki Hospital.

This Hospital has done useful work as a small district hospital during the past year. Its usefulness would be materially increased if extensions were made so as to allow the admission of maternity cases.

Otaki Sanatorium.

This Sanatorium has remained in constantly full occupation during the year and has done excellent work. A commencement has been made with additions for the accommodation of the nursing staff, and a house has been built for the Medical Superintendent.

The Sanatorium farm is now under the control of the Superintendent of Experimental Farms Agricultural Department, and the change has been attended by marked improvements in many ways.

The Medical Superintendent reports "Only twenty of the seventy-one cases admitted were in the first stage of pulmonary tuberculosis—that is, 27 per cent. This is a low percentage, and could no doubt be considerably increased with systematic selection of cases. I consider the results of treatment on the whole satisfactory. Out of seventy-one cases discharged 65 per cent. were sent out with disease arrested."

In addition the Medical Superintendent also states that the "after-history reports" received from patients after discharge from the institution are on the whole satisfactory and encouraging.

Pukeora Sanatorium.

During the year an additional ward has been built, which is now in use as a general observation ward, with accommodation for twenty-five patients. This Sanatorium now has 175 beds available for use, and ordinary patients as opposed to "service" patients are being admitted in gradually increasing numbers.

Much reconstructive work remains to be done at Pukeora, chiefly in the following directions: (1) Reorganization of engineering services; (2) reorganization of the kitchen, in which at present work is carried on with difficulty; (3) additions to nursing staff quarters; (4) provision of better examining-rooms; (5) laying down the paths and roads of the institution in concrete or asphalt (many of the paths are exceedingly rough, and it is difficult to keep them presentable and neat); (6) the gradual reroofing of the institution; (7) erection of a satisfactory steward's store. Certain of this work it is hoped to accomplish during the coming year.

Much useful professional work has been accomplished during the year, and the "after-history reports" received by the Medical Superintendent are of a most encouraging character.

I wish to call attention to the following extract from Dr. Short's annual report, with which I am in entire accord:—

"It is desirable that something should be said at this point concerning the character of cases admitted. So far as the 'service' patients are concerned, it may be generally stated that the cases admitted have been suitable cases for Sanatorium treatment. One or two cases from outlying districts have certainly been admitted in a condition too advanced for any true hope of benefit, but such cases have never been available for examination by the officers of the staffs of the Assistant Directors of Medical Services of the districts concerned or of the hospitals under the administration of the Defence Department. The same, however, cannot be said for the civilian cases admitted. A very large percentage of these have proved to be in a condition so advanced in phthisis as to render sanatorium treatment of no avail, and many such cases have arrived in a condition of health so far advanced as to make a return to their homes, or to their respective Hospital Boards, impossible. It is well appreciated that even in moderately advanced cases the educational value of sanatorium treatment is in itself sufficient justification for admission, but in the cases to which I now refer even that factor could not nor cannot be availed of by the patients concerned. It is suggested that an urgent appeal be made to medical practitioners throughout the Dominion for earlier diagnosis and admission to sanatorium for cases suffering from pulmonary tuberculosis. That much benefit may be done to patients suffering from this disease when given treatment in the early stages has been abundantly proved, and this institution is equipped on the most up-to-date lines for the treatment of such cases."

To be really effective sanatorium treatment should be commenced at an earlier stage than is now in too many instances the case, and it is hoped that constant reiteration of this fact will help to bring about a better condition of affairs.

I regret to report the resignation, from ill health, of Dr. A. H. Elmslie, the Assistant Medical Superintendent. This officer had given faithful and devoted service, and his resignation was much regretted. The Medical Superintendent, Dr. Short, has had a trying year, but both he and the staff (nursing and ordinary) have worked hard and accomplished much.

SECTION 3.—HEALTH DEPARTMENT MATERNITY HOSPITALS (ST. HELENS).

The following are the figures giving a brief *résumé* of the work done at these institutions during the year:—

St. Helens Hospitals, January–December, 1921.

Town.	Confinements in Institution.			Confinements attended outside.	Average Number of Pupil Nurses Resident.	Midwives qualified during Year.
	Births.	Deaths of Mothers.	Deaths of Infants.			
				Births.		
Auckland	331	1	7	228	14	13
Gisborne	88	..	4	5	4	5
Wanganui	60	1	1	2	4	3
Wellington	283	3	10	87	16	19
Christchurch	261	1	5	151	13	14
Dunedin	145	..	..	76	9	9
Invercargill	140	..	1	2	5	7
Totals ..	1,308	6	28	551	65	70

Many more abnormal and difficult cases have and are finding their way to the various St. Helens Hospitals, the work consequently of the staffs has been more arduous, but the experience gained has been of much value to the nurses in training, who are thereby enabled to see a range of work which would not otherwise be possible.

St. Helens Hospital, Auckland.—The new St. Helens Hospital, Auckland, is gradually approaching completion, and it is hoped that it will be opened within the next few months. The existing St. Helens Hospital in Auckland has been overcrowded on many occasions during the year just ended, and the new hospital is undoubtedly badly required.

St. Helens Hospital, Christchurch.—Sterilizing facilities have been improved here and the character of the nurses' accommodation bettered. Additional and better storeroom accommodation is also now in use. The long-promised new hospital is certainly required, and it is hoped that a commencement will be possible as soon as financial conditions permit.

St. Helens Hospital, Wellington.—Requires better storerooms, and also fresh domestic staff quarters. This Hospital has again had a very busy year.

St. Helens Hospital, Dunedin.—Better facilities for the out-patient department and the holding of the ante-natal clinic have been provided during the year with marked improvement in the character of the work done. Better storeroom accommodation has also been made.

The Medical Superintendents, Matrons, and staffs of the hospitals and sanatoria under the Health Department have had a hard and trying time during the last year, more or less inevitable with change of control and necessary adaptation to new conditions. Their work has been cheerfully and efficiently done, and I wish to express my keen appreciation of their labours.

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

PART IV.—CHILD WELFARE.

SECTION 1.—GENERAL ADMINISTRATION.

During the year steady progress in child welfare has been made throughout the Dominion. How far the idea of *doing the best for the child from conception to the end of school-life*—the reason assigned for establishing the Directorate of Child Welfare—has been given effect to may be inferred from the following record of undertakings and work done during the past year:—

Booklet for Husband and Wife.

For the first time in the world an attempt has been made by the State to supply to those about to marry, and to every married woman under thirty-five years of age, a small text-book addressed to husband and wife, exhorting them to do the best for the growth and development of their potential progeny, and describing in simple terms the main essentials for safeguarding mother and child and promoting their health and fitness.

There are some 92,000 married women in the Dominion under thirty-five years of age, and to nearly half of these "The Expectant Mother, and Baby's First Month" has already been posted; further, the Registrar-General has kindly undertaken the issue of a copy to every man about to marry, on his applying to the local Registrar for a marriage license. When the issue to married women has been completed there will be no further excuse for parental ignorance as to the simple primary essentials bearing on the health and fitness of mother and child, because every newly married couple will be forewarned and forearmed through the Registrars. In addition, a small supply of copies of the booklet held in reserve will be issued to nurses, hospitals, &c., as required.

Lectures, Demonstrations, Addresses, etc.

These have been held extensively, and are in course of delivery as part of a Health Campaign for enlightening the community in general, and for promoting the standard of proficiency among nurses and all those specially entrusted with the guidance and care of the mother and family. This campaign will be completed before the end of the year, embracing—

(*a.*) *Public Lectures and Demonstrations* bearing on fresh air, sunlight, bathing, swimming, and other forms of exercise, recreation (re-creation), rest, sleep, foods and feeding, regular habits, and other matters determining health and fitness. These lectures are illustrated by means of lantern-slides and moving-pictures.

(*b.*) *Meetings for mothers and young women* concerning the needs of home and family. An important feature of these meetings is the encouragement of those who attend to ask intimate questions affecting all wives and mothers, more or less—questions which could not be dealt with in

public. In order to promote free and frank inquiry and discussion, written questions may be handed in instead of asking the mother to get up and put her question personally. These meetings are very informal; more than half the time the mothers are instructed by a thoroughly competent, specially trained nurse with whom they talk over matters, and, if desired, arrange for follow-up instruction by the local Plunket nurse, or through any other available agency.

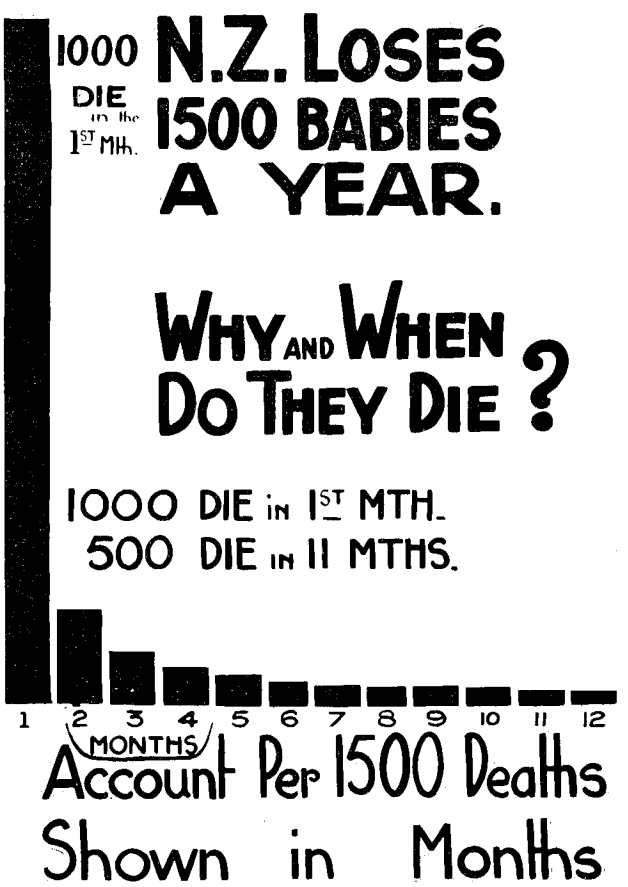
(*c.*) *Meetings for midwives:* Instructions are sent out by the Director-General of Health to all registered midwives in the Dominion, asking them to attend special lectures and demonstrations bearing on the pre-natal and post-natal care and safeguarding of mother and child. At these meetings, as in the foregoing, those attending have the benefit of conferring and discussing matters with a specially qualified nurse, who arranges for further practical demonstrations or advice if desired.

One can scarcely overstate the safeguard and boon it would be to mother and child if all the midwives—numbering between 1,500 and 2,000, registered and unregistered—to whom mothers, expectant and actual, turn for guidance and help during the most momentous and critical phases of life could be depended on to give uniform authoritative advice and assistance. Wrong advice is so often tendered and the wrong thing so often done that no pains should be spared to heighten the sense of responsibility and raise the standard of knowledge and proficiency among all those licensed or authorized in any way by the State to undertake the special care of mother and child before and after child-birth. The relationship of this to child welfare and the further lowering of the infantile-mortality rate is clearly brought out by studying the admirable charts and statistics bearing on mother and child published by the Government Statistician.

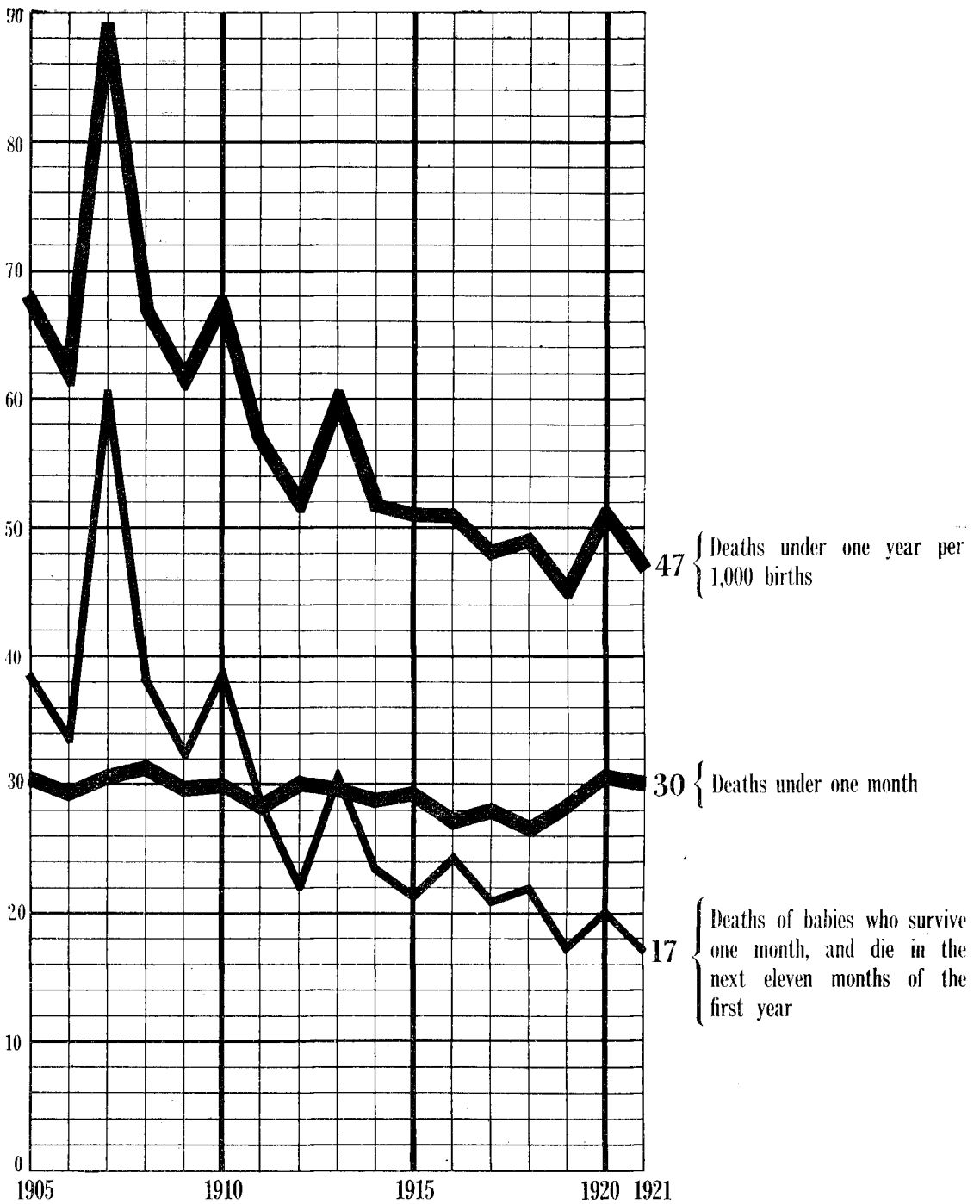
SECTION 2.—INFANTILE MORTALITY.

I have prepared the following graphs, which will serve to make the position quite clear.

New Zealand Infantile-mortality Graphs.



This graph was prepared for lecturing purposes, in order to impress on nurses, midwives, and others the urgent need for reducing the deaths of infants in the first month after birth. The New Zealand birth-rate is given in round numbers as 30,000 per annum, and the incidence of the deaths, month by month, is arrived at approximately on the basis of the figures for 1921.



The above analysis brings out the fact that the fall in the infantile-mortality rate during the last fifteen years has been due solely to the saving of lives after the first month. The upper zigzag in the second graph is arrived at by adding together the figures of the two lower lines.

Roughly speaking, about 30,000 babies are born annually in New Zealand, and about 5 per cent. (or, say, 1,500) die in the first year. Of those who die, nearly 1,000 succumb in the first month the other eleven months contributing only about 500 deaths. The failing babies who come under the care of the medical profession and those looked after by the Plunket Society's nurses, in the Karitane Hospitals and throughout the community, show clearly that lack of adequate knowledge and training on the part of the mothers, and on the part of many of those on whom they rely for help and guidance throughout pregnancy and at and after childbirth, are main causes of failure in the first few weeks Where babies do badly there is almost always a history of serious, but easily avoidable, mistakes—and these are just as liable to occur, as Professor Howard Kelly says, among the "educated and well-to-do" as among the so-called "poor and ignorant." The foundation of hope lies everywhere in reliable, systematic education, training, and help. There is every ground for confidence that with the further growth of knowledge on the part of mothers, nurses, and midwives the deaths of babies after the first month of age will be brought down in New Zealand another third in the near future, and that a much greater reduction will be effected in the inordinately high death-rate in the first month.

Our infantile-mortality rate during the first month has remained practically unchanged for the last sixteen years. Three per cent. of the babies born in the five years 1906–10 died before they were a month old, and 3 per cent. died under a month last year; yet the death-rate of babies during the whole of the remaining eleven months of the first year has fallen to less than half—viz., from practically 4 per cent. in 1906–10 to only 1·7 per cent. last year—in other words, almost double as many babies were lost in 1921 during the first month after birth as were lost throughout the whole of the rest of the first year.

During the course of the next five years the infant mortality for the whole Dominion should show a further reduction from the present total of about 1,500 deaths per annum to only 1,000—in other words, a fall from 5 per cent. to only 3 per cent. of the birth-rate.

Excluding deaths in the first month, the infantile-mortality rate for New Zealand is already below 2 per cent. If the deaths during the first month can be reduced to half of the present rate—viz., roughly, from 1,000 to 500—it will naturally tend to cause some increase in the number of babies dying in the course of the remaining eleven months of the first year of life, but this should be fully compensated for by the tendency to better health and fewer deaths which will follow the further spread of skilled instruction, help, and training given to nursing-mothers throughout the whole country, not to mention the effect of greater attention to pre-natal care.

SECTION 3.—SCHOOL HYGIENE.

Visits to schools and addresses to both sexes on the fundamental requirements for establishing physical, mental, and moral fitness: In this work the main practical difficulty encountered is the fact that frequently the school grounds, buildings, and equipment, and the lack of adequate facilities for ventilation, lighting, heating, and recreation, illustrate the wrong, rather than the right, provisions for ensuring the *mens sana in corpore sano*.

Ten years ago, when lecturing on health throughout the Dominion, one felt the bitter irony of trying to impress on children crowded in ill-lighted, ill-ventilated, stuffy class-rooms the supreme importance of sunlight, fresh air, active exercise, and the "work while you work, play while you play" spirit, knowing that the institutions themselves and the conditions imposed made what one was advocating quite impossible so far as school-life was concerned. The inconsistency of practice and precept was so glaring that one could only offer excuses to the children for the existing conditions, and say that no doubt they would soon be rectified. However, speaking now after the lapse of ten years, I can only say that in many cases practically nothing has been done to improve matters, even where a very small judicious expenditure would have made existing premises at least tolerable. Steps ought to be taken at once to prevent the extension of this injustice to another generation of children—not to speak of the injury done to the teachers.

When providing school-buildings much more consideration should be given to correct lighting and better ventilation, and to the "open-air principle," for which the climate of the Dominion is so admirably adapted. Where suitable provision has been made in this direction one finds it equally appreciated by staff and pupils, and the improvement in their physical and mental vigour and alertness confirms the experience of other countries.

In most parts of New Zealand children would not need artificially ventilated rooms if the buildings were well planned, with class-rooms facing the midday sun, and provided also that the children were given reasonably frequent vigorous exercise.

The ensuring of habitual activity of the bodily fires is infinitely more important for the young than the provision of external sources of heat; indeed, the effect of the latter is often so extremely variable in different parts of existing class-rooms that, in these cases at least, the child would be safer if no artificial heat were supplied, especially if due attention were paid to the provision of suitable clothing for specially cold or wet days, and if in addition some means of drying garments were provided, instead of allowing them to be hung one over the other against cold, damp walls, as is so frequently the case.

SECTION 4.—RUNABOUTS AND THE PRE-SCHOOL AGE.

Children from two up to five or six years of age form a class equally apart in general from infants and from older boys and girls. There is a growing tendency to hand little children over for a part of the day to day nurseries, kindergartens, and infant schools: such establishments are found to need just as much attention to general suitability and hygienic fitness as any other class of private or public institution participating in the care, rearing, and education of the young. Leaving out of account restricted or unsuitable accommodation, due largely to lack of funds, the general improvements needed in these institutions are—

(1.) A clearer recognition of the paramount importance of spending as much time as possible in the open air and sunshine:

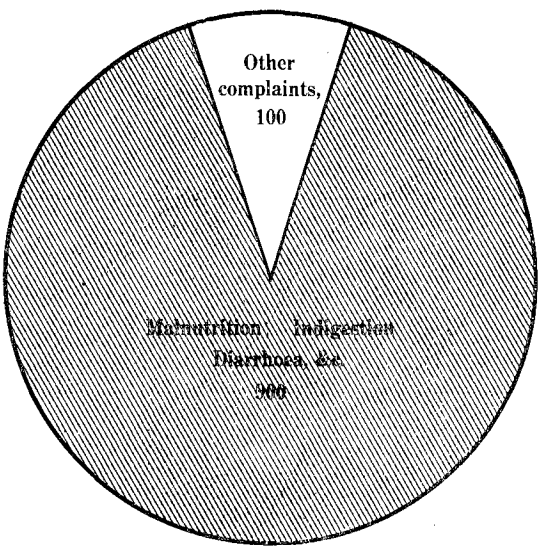
(2.) More respect for first principles in regard to food and feeding.

The whole population must be brought to realize that from the beginning to the end of life proper nutrition and tone of the body is the foundation of every form of fitness and capability—physical, mental, and moral.

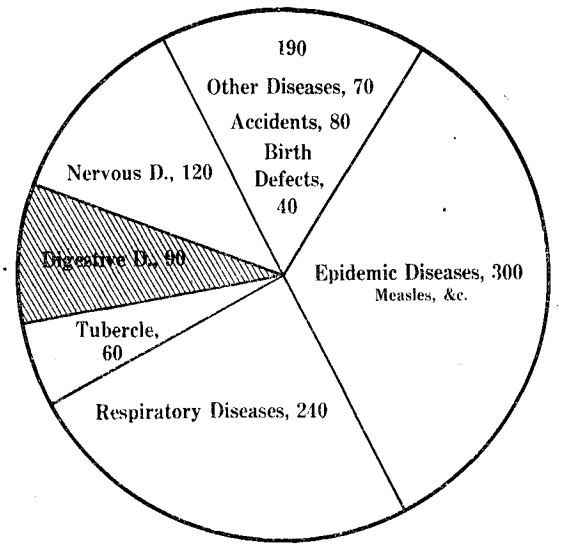
Decay of the teeth, common colds, adenoids, &c., are, in general, effects and expressions of poor nutrition and inactivity in children, just as indigestion, appendicitis, consumption, and cancer are their resultants later in life.

The following graphs show how imperfect nutrition in the first year leads to the deaths attributed during the next four years to specific causes such as bronchitis, pneumonia, measles, and tuberculosis. The bodies of well-nourished children form a soil hostile to the microbes of disease, and if the germs do gain a temporary foothold they rarely kill the vigorous, healthy child or maim it for life as so often occurs in the case of the flabby, soft, sometimes fat children whose tissues have poor resistive and defensive powers.

Graph showing that the main cause for parents having to seek medical advice for their babies is what are roughly classed as "digestive disturbances."



Graph made from the Registrar-General's statistics compiled from the New Zealand medical certificates of death during 1921, showing what are the registered causes of deaths occurring in the second, third, fourth, and fifth years of life per 1,000 deaths.



It will be noted that, while it is estimated that 90 per cent. of infantile ailments come under the rough heading "digestive disturbances" or imperfect nutrition, only 9 per cent. of the children who die in their second, third, fourth, and fifth years are certified as having actually succumbed to "digestive diseases." However, with few exceptions, the predisposing cause has been defective tone and nutrition of the body, leading to invasion of the system and death attributed to specific microbes of epidemic, respiratory, and other diseases.

As Dr. Almond, of Loretto (one of the greatest of Scotch schoolmasters), said: "We ought to turn out the schoolboy pretty well germ-proof. . . . I only wish there was a word to express that normal and glorious condition of being which ought to be that of the average man and woman. Perhaps in some future century, when the perfection of the human animal is regarded as of equal importance with the perfection of the steam-engine, there will be such a word."

F. Truby King,
Director of Child Welfare.

PART V.—NURSING.

SECTION 1.—NURSES REGISTRATION ACT.

Examinations were held under the Nurses Registration Act in June, 1921, and December, 1921. 267 candidates presented themselves for examining, of whom 224 were successful and are now on the State register.

Seventy-three nurses from overseas have been registered, their certificates from their training-schools still being accepted, as the State registers o England and Wales, Scotland, and Ireland have not yet been published. In future it will be advisable to require from all applicants from countries where a nurses registration law is in force proof that they have been registered in the country from which they come. The need of reciprocity in registration throughout the British Empire is very apparent.

A great number of letters from nurses desiring to come out to New Zealand have been received. These women in many instances appear to be well qualified, and the majority have served during the war, some with distinction, but the state of nursing affairs during the past year has not been such that they could be encouraged to come out. They have therefore been advised not to come unless they have friends or means which will permit them to wait for suitable employment. Despite this many have come, as well as many others who have not written beforehand to make inquiries.

Nurses from the Australian States have also come to the Dominion seeking work, and, in spite of the fact that a good many of our own nurses are now working temporarily in England, South Africa, and America, there are many private nurses in all centres who have to await cases for considerable periods. People are more and more going to the general hospitals for treatment, and, if nursed at their own homes, dispense with their nurses at much earlier periods than formerly.

There are few positions now vacant in public hospitals which cannot be filled by the trainees as they qualify.

District nursing, except for Natives, is rather at a standstill. Hospital Boards take little interest in the provision of nursing for the remote parts of their districts. The residents make rather feeble attempts to obtain a nurse, ask for all particulars about government subsidy, salary and accommodation, and then let the matter lapse. This is very regrettable, as undoubtedly the services of a nurse when stationed in a backblock district are very much valued.

Nurses in Government Departments.

There has been one new appointment to the staff of Nurse Inspectors, Miss Mirams, of the Auckland Health Office, having now taken up that work. The nurses appointed for home-nursing lecturing have been transferred to other work, and the lectures given up in the meantime.

It is hoped to appoint more school nurses, the districts at present being very large.

District Health Nursing Work.

This continues to be very useful, especially on account of outbreaks of enteric among the Maoris. The nurses appointed under the Department are for work chiefly among the Native race, and by their visits to the pas and constant reiteration of teaching in sanitation and personal hygiene do much useful preventive work.

A cottage with accommodation for four or five patients was opened in March at Kahukura, in the Waiapu district. The nurse in charge visits the neighbouring pas, and has also had a few patients in the cottage.

The native nurses attend to cases among the European settlers when needed.

Nurses taken over from Defence Department.

The number of nurses working directly under the Health Department has been greatly increased by the taking-over of the military hospitals from the Defence Department. The military sisters have now become civil nurses, and their salaries have been put on a basis equivalent to those of the larger civil hospitals, with some consideration for their long service. There are 132 of these nurses and masseuses.

It is intended to establish a training-school for nurses at King George V Hospital at an early date.

Plunket Nurses.

This branch of work continues to do very useful work under Miss Pattrick, the Director appointed by the Society for the Promotion of the Health of Women and Children.

Dental Nurses.

The students who entered for training under the Division of Dental Hygiene are proving very satisfactory and competent, and it is desired to add greatly to their numbers.

Superannuation for Nurses.

Unfortunately, owing to financial stress, the Bill prepared for the purpose of instituting superannuation for nurses was not brought before Parliament last session. It is a matter of urgency as soon as the Government is able to make provision for nurses. The nature of their work, which depends so largely on a factor which all efforts are made to minimize—the ill health of the community —renders it very difficult to make any provision for the future.

For the older members of Hospital service now retiring section 11 of the 1920 amendment to the Hospitals and Charitable Institutions Act makes it possible for the individual Boards to make some provision after long service, and I am glad to note that this has recently been done in the case of their Matron and Sub-matron, after many years' service, by the Palmerston North Board.

The Government subsidy to the Nurses' Memorial Fund has been discontinued. The fund now amounts to over £19,000, and is assisting nine nurses with annuities, paid only from interest.

SECTION 2.—MIDWIVES ACT.

During the year two examinations have been held under the Midwives Act. 129 candidates presented themselves, and 122 passed and are now on the register. Fifty midwives were registered from overseas.

The question of continuing to recognize the certificate of the Central Midwives Board is under consideration. The term of training is not equal to that given under the New Zealand Act, and as it is now recommended to lengthen that term of twelve months to eighteen months, it is still more unfair to our midwives to recognize terms of six months and less. Many of the older midwives arriving in the Dominion and applying for registration have undergone training for three months only. In spite of this the Central Midwives Board, England, has not agreed to reciprocal registration with New Zealand, on account of the fact that the number of lectures laid down to be given by the Medical Officer is not equal to that under the Board, ignoring the fact that the number laid down is doubled during the length of the term. (Note.—Since writing above the Central Midwives Board has agreed to recognize the training under the New Zealand Act as equivalent, and asks for reciprocity for all midwives registered under the Board. This is under consideration, and it is proposed to admit these midwives after making up a time equal to that required of New Zealand midwives, and passing the State examinations.)

Not nearly so many midwives from New Zealand desire to practise in England as midwives from England come to practise in New Zealand, and therefore reciprocity is more important to the holders of the Central Midwives Board's certificate than to the State-registered midwives of New Zealand

The St. Helens district midwives service is discontinued, the Hospital Boards really responsible for this service in their districts having declined to assume the responsibility. The midwifery nurses posted out in country towns will now be able to carry on private visiting practice with a fair prospect of success, as they are well known and appreciated in the districts. In the future it is hoped to re-establish this service on a temporary basis to enable nurses to establish a practice.

SECTION 3.—PRIVATE HOSPITALS.

The number of private hospitals in the Dominion during 1921–22 was 282. During the year thirty-four new licenses have been issued for private hospitals and nineteen have been transferred.

Inspections have been carried out more frequently now that Nurse Inspectors are attached to each of the large centres.

Improvements have been made in the equipment of the hospitals more recently established, and alterations made in many others to bring them more into accord with the requirements of the Department.

The hospitals owned by registered nurses and midwives, whose proprietors are usually anxious to do all they can in this direction, are at a disadvantage with those owned by medical men, who have the double source of income of the fee for medical attendance or surgical operations as well as that for accommodation and nursing, and can therefore afford to spend more on building and equipment. The fees charged by the nurse proprietors for accommodation are also lower than those charged by medical men.

With regard to private maternity homes, the licensed proprietors are much hampered by the allowance under the Hospitals Act of one case at a time in an unlicensed house, thus lessening the admissions in the authorized places. It is hoped to debar, by legislation, the reception of any cases at all for payment in private houses, as the number now legal is frequently exceeded, and excuse made that the cases were either before or after expected time.

H. Maclean,
Director, Divison of Nursing.

PART VI.—SCHOOL HYGIENE.

SECTION 1.—CONTROL AND ADMINISTRATION.

This is the first year during which the school medical work has been directly under the control of the Department of Health, and there can be little doubt that the resulting closer association with the other activities of this Department is a very great advantage. The guidance and co-operation of Dr. Truby King, Director of the Division of Child Welfare, is especially valued in connection with the propaganda of the division. The fear that the transfer from the Education Department would tend to dissociate the work of school medical officers from the education system has been shown to have little foundation. Where close co-operation is of such practical importance—namely, with school-teachers and Inspectors, Education Boards and School Committees—the co-operation is of a direct nature between the school medical officers and those concerned, and not likely to be affected by the changes of departmental control.

Staff.

The staff of this division, as in the previous year, numbers thirteen school medical officers and twenty-seven school nurses, with the same districts as detailed in my last report.

Conduct of the Work.

While the general description of school medical inspection given in my last report need not be repeated, it is perhaps well to emphasize again that the work of the school medical officer is not a mechanical routine of inspection of children and official notification of parents. All school medical officers recognize that the sympathetic understanding and willing co-operation of the parents is indispensable to the success of the work. To obtain this co-operation some officers invite the parents to be present during the inspection of their children and hold, as it were, an advisory clinic over the individual cases; whilst others meet the parents collectively at the school, give a short address and answer questions. Owing to the practical difficulties involved in personally meeting large numbers of parents, especially when extensive districts have to be covered, some officers prefer to establish this personal relationship by an elaboration of the formal notice sent to parents into a more detailed letter of advice: the effect of such a notification thus approximates to that of an interview, and certainly a much larger number of parents can be reached where in many cases personal interviews would not be possible. By whatever method the parents' co-operation is sought, it is gratifying to note the growing interest which is undoubtedly being taken in the subject of children's health and the parents' steadily increasing appreciation of the services of the school medical staff.

I should refer to the invaluable work done by the school nurses. Much of their work is of an exacting kind, and calls for the exercise of patience and tact. Besides assisting the school medical officers in the examination of the children, school nurses visit thousands of homes both in town and country; much of their work, which is of a social and missionary nature, is difficult to measure, but bears valuable fruit in the treatment of defect and disease, and in rectifying conditions which make for ill health. One medical officer in expressing appreciation of their work says: "I look back with incredulity to the years before school nurses were appointed and wonder how I faced the work."

I have to acknowledge, on behalf of the school medical staff, the cordial assistance of the school-teachers in facilitating the work of school medical inspection. Moreover, both in regard to the cleanliness of the children and in seeing that the school medical officers' recommendations are carried out, the active co-operation of the teachers is invaluable. The standard of cleanliness and the attention given by the children to the care of their teeth are frequently the direct reflection of the degree of keenness exhibited by the school-teacher in regard to these important matters.

Returns of Medical Inspection.

A total of 1,452 schools have been inspected during the year, and this number includes all the larger primary schools in the Dominion. Statistical returns have been sent in relating to the complete examination of 58,451 school-children. In addition between fifty thousand and sixty thousand children have been examined for the more important defects, records of which have not been tabulated statistically. Those to whom the following percentages refer include children of all ages in the primary schools, with a predominance of those of the earlier school-going years. The percentages are based upon the combined returns of the staff, but it should be borne in mind that as some of the figures are to an extent dependent upon individual judgment the percentages given should therefore be taken as broad indications rather than exact estimates.

Of the children examined 85·6 per cent. were returned as having medical defect of some kind. The proportion of children found to have defects other than dental caries is 56·8 per cent. It should be mentioned that this figure is not of great value for comparison with other countries, as there is no internationally recognized standard as to what should be included in the category of medical defect. The standard adopted by school medical officers in New Zealand is high.

Impaired nutrition was found present in 5·76 per cent. This refers to thinness and underweight, and is undoubtedly a low estimate of the proportion of children below the accepted standard weight for height, as some medical officers have attached less importance to weight as an index of health and development.

A *verminous condition of the hair* was present in 2·3 per cent., and *skin-disease* in 2·66 per cent. Less than 1 per cent. showed signs of *abnormality of the heart*, and a proportion of these cases would not be of a serious nature.

Deformity of the trunk and chest was recorded in 25 per cent. of the children examined. Some comment upon the significance of this item is perhaps desirable. Included in this category are stooped shoulders, spinal curvature, and other forms of faulty posture, as well as actual structural deformity of the chest-wall, such as pigeon breast and depressed ribs. Faulty posture, being largely due to weakness and deficient tone of the muscles, often represents an impaired state of nutrition and actual predisposition to disease. Structural chest-deformity, whether or not it is due to rickets in early childhood, certainly indicates that there has been a serious interference with normal development, and this interference has almost certainly affected vitality and growth in other ways as well. Even allowing for a proportion of these cases of postural and structural defect being of a slight degree and not incompatible with robust health, I think that their occurrence to the extent of 25 per cent. is a matter which should not be regarded lightly.

Faulty development of the jaws, as manifested in irregularity and crowding of the teeth, in narrowness of the jaws and high arching of the palate, was recorded in 9·18 per cent. This faulty development of the jaws appears to be on the increase amongst the more civilized communities of the world, and, along with the chest-deformities already referred to, should be viewed with concern.

Dental decay has been recorded in 67·37 per cent. of the children examined, but it should be pointed out that this figure refers only to those children with untreated decay, and does not include those whose mouths have received adequate treatment by fillings or extractions. A truer estimate of the prevalence of dental decay is given by a consideration of the percentage of children having perfect sets of teeth—*i.e.*, with no decay, no extractions, and no fillings—complete naturally sound sets. It is too soon to be able to state this figure with precision, but it is probably well below 5 per cent. for children within the primary-school age-period.

Obstructed nasal breathing, associated in the majority of cases with adenoids, was reported in 3·7 per cent. This figure refers only to those cases in which there was evidence at the time of the examination of an appreciable degree of obstruction being present, and does not, of course, give any idea of the prevalence of catarrhal trouble associated with adenoids.

Enlargement of the tonsils was recorded in 13 per cent.; and, while it is probably true that any degree of enlargement is abnormal, yet a portion only of these cases would call for radical treatment. *Enlarged glands in the neck*—due in the majority of cases to septic absorption from decayed teeth, adenoids, and unhealthy tonsils—was recorded in 10·4 per cent.

Taking the figures for all districts, the percentage for *goitre* is 7·7 per cent. As the prevalence of goitre varies enormously in different districts, this figure has little meaning without comparative returns for each locality. It would, however, be misleading to publish such figures until arrangements can be made for a more exact standard of examination, as the estimates of different medical officers would not be truly comparative so long as differences in individual judgment and method are an appreciable factor.

External eye-disease was present in 1 per cent. of cases, consisting chiefly of inflammatory conditions of the eyelids. *Defective vision* was detected in 4 per cent. of those examined, which is undoubtedly an underestimate of the actual defect existing, as in the case of children of the primer classes (who formed a large proportion of those examined and in whom defective vision is not so common) it is rarely practicable to test vision systematically. In the records of the examination of children of Standard II in previous years 10 per cent. have been noted as suffering from defective vision.

Defective hearing has been recorded in less than 1 per cent. of cases; the actual prevalence of impaired hearing is probably higher, as it has not always been practicable to apply an accurate test for the detection of the slighter degrees of deafness.

SECTION 2.—TREATMENT.

Conditions needing treatment may from the practical point of view be roughly divided into two classes—those which call for professional treatment by medical practitioner or dentist, and those which need home treatment only. The latter include uncleanliness, verminous conditions, certain common skin-diseases, &c., and the treatment of this group depends entirely upon the following-up efforts of the school nurses and on the standard of the individual homes. On the whole, satisfactory treatment of these conditions is obtained, and it is noticeable that the educative effect of the home treatment is often of great value in raising the general standard of care bestowed upon the children in some of the poorer homes. For instance, the very dirty and verminous child which in the early years of school medical inspection was so prevalent in some schools is now comparatively rare, the uncleanliness which is now met with being generally of a less serious nature.

As regards the treatment of defects for which the services of a doctor or dentist are required, the need for increased facility for obtaining dental treatment is by far the greatest. There is need also for the extension of special provision for treatment of defects of the nose, throat, ear, and eye. Next to dental disease these defects are the most serious of those commonly met with, and there is often great difficulty in obtaining the necessary treatment. The fact must not be lost sight of, however, that the provision of treatment does not entirely solve the problem: preventible defects must be prevented. This point is especially illustrated in the case of dental disease, on account of its progressive and constantly recurring nature What Sir George Newman, Chief Medical Officer of the British Ministry of Health, has said in connection with tuberculosis applies equally to all diseases: "What we need is the large view and the long view." In this connection invaluable constructive work is being done by the Division of Dental Hygiene in insisting upon preventive measures being carried out in all cases coming under the notice of its dental officers for treatment.

In spite of the inadequacy of the existing facilities, a very large amount of dental treatment is obtained by school-children as a result of the efforts of the school medical officers and nurses. One school medical officer, for instance, says: "Good results are being obtained. I notice that a much larger number of children are being treated, and it is quite refreshing to look into the mouths of well-filled teeth in some schools—child after child with teeth filled." This is by way of contrast with the previously neglected state of many of the children's mouths containing decayed and septic teeth devoid of attention.

A measure of the effectiveness of school medical inspection from the point of view of treatment is obtained by expressing the number of defects treated as a percentage of the number of defects notified to parents as requiring treatment. In considering the following percentages it must be borne in mind that the follow-up visits of the school nurses take place as a rule a month or two after the medical officer's inspection, and many children are thus recorded as untreated who do subsequently receive treatment, especially after the school nurse has interviewed the parents. If it were practicable for the school nurses to make a second set of follow-up visits later in the year the percentages of cases treated would be found to be considerably higher. It should be remembered also that, while the effectiveness of school medical inspection in regard to treatment depends to a very great extent upon the follow-up visits of the school nurses, this portion of the work has not yet been developed to anything like its fullest extent.

The percentages of treatments for all classes of defects over the whole Dominion is 48·4 per cent. Classified roughly according to the accessibility of facility for treatment, the proportion of cases receiving treatment for all defects, and for dental, visual, and nose and throat defects, expressed separately, are as follows:—

Table showing Number of Defects treated per 100 recommended for Treatment.

Percentages receiving treatment for—	In Large Towns.	In Small Country Towns.	In Back-country Districts.
All defects	52·25	45·30	38·19
Dental defects	54·21	44·37	35·38
Visual defects	60·12	55·21	40·21
Nose and throat defects	43·02	33·99	33·33

While there is, of course, room for considerable improvement in these figures, they may in the meantime, and under the conditions referred to, be regarded as satisfactory. There is no doubt in the vast majority of these cases that the treatment has been obtained as a direct result of the work of the school medical staff. It should at the same time be recognized that much credit is due to the parents who in the great majority of cases are anxious to obtain necessary treatment for their children and to carry out the school medical officers' recommendations.

SECTION 3.—EDUCATION AND PREVENTION.

A system of medical inspection, even were it associated with the most perfect facilities for treatment, must fail to attain the desired objective unless combined with a well-defined and active policy of education for the prevention of defect and disease. In this connection a number of lectures and addresses have been given by school medical officers during the year, several articles have been published, and two health camps for children of subnormal nutrition have been held. There is no

doubt that considerable progress has been made in the direction of focussing public attention upon the fundamentals of healthy living. Much more, however, remains to be done.

In the development of the propaganda of the division there has for some time been an increasing need for a definition of policy in order that the recommendations made to the public may as far as possible be uniform and consistent. With this object in view a conference was held during the year, as a result of which a sub-committee was appointed to draw up a statement of fundamental principles connected with the subject of diet and the prevention of dental disease. It is now recognized that the health of the community is essentially dependent upon the health of the individual, and the personal habits of the individual are therefore coming to be regarded more and more as the concern of the State. This direction of attention, not to the community only, but to the individual who composes it, marks the beginning of a new era in preventive medicine. Consequently I regard the Department's pronouncement, which will be published shortly, stating general guiding principles in regard to food and nutrition and the prevention of dental disease, as a forward step of the very greatest moment, not in relation to school medical work only, but as having an important general bearing upon the health of the whole community.

SECTION 4.—HEALTH TEACHING IN SCHOOLS.

One of the most important channels of educative reform is unquestionably the teaching given to the children in schools. Talks on health are given to the children by school medical officers, but without the wholehearted co-operation of the teachers little permanent good can be effected. It is upon the more continuous influence and personal example of the school-teacher that we must mainly rely to bring about real and lasting improvement in habit and outlook in regard to matters of healthy living. One school medical officer writes as follows: "I believe that a certain austerity should be taught as an ideal. This is necessary to counteract the tendencies of to-day, many of which are in the direction of selfishness of habit and conduct with especial regard to the personal indulgences of sweets and confectionery, frequent meals, picture-shows, and a demand for ever-increasing bodily comfort. This craving for new sensations, either of the palate or of the other senses, should be the warning signal that all is not well. There is no doubt that it leads to the path of national degeneracy and physical unfitness."

The leading of the healthy life, whether viewed as a civic duty or as a matter of self-interest, is indeed a moral matter, and exercises the powers of discrimination, self-control, and obedience to law. As an ideal to be aspired to, as a possession to be won and retained, health and the habits which promote it can, I believe, be presented to the child's mind in ways which readily stimulate interest and enthusiasm. Modern educational methods and the spirit of team work and wholesome competition can undoubtedly effect an enormous amount in this direction. Instead of being an isolated subject, the teaching of health should be interwoven with the whole education of the child. Its practical bearing can be brought out in the schoolroom, the playground, and athletic field, and the results of its maintenance or loss can be illustrated from history. In fact, the cultivation of health can be made a valuable means as well as an end in itself in education. A revision, however, of the present education syllabus relating to hygiene is urgently needed as being the basis of the subject as far as the schools are concerned.

SECTION 5.—PHYSICAL TRAINING, ETC.

The system of physical training as set out in the syllabus issued by the Education Department is of the very greatest value in connection with the school medical officer's work, and as a remedial as well as a preventive measure it has an influence upon the health of the school-children the importance of which would be difficult to overestimate. It is very much to be regretted that it was found necessary to reduce the staff of physical instructors, the present number being too few to deal adequately with the work which is so much needed of them. While it is the school-teachers who actually conduct the physical-training classes in the schools, yet it is upon the periodic visits of the trained instructors that the teachers' interest and efficiency in the work so intimately depend. The school medical staff find a large amount of defect in school-children which is readily remediable by physical exercises, and for which the school system of physical training provides the only generally available means of treatment. Apart from the value of physical training as a factor in the general education of the child, it is important to recognize that a system of school medical inspection not supplemented by a scheme of efficient physical training is seriously handicapped in its power to remedy an important class of common defects.

Tooth-brush Drill.

Tooth-brush drill has in some districts been further developed during the year, and it is noteworthy that one branch of the Educational Institute has reported strongly in favour of its general adoption. This may be taken as an important testimony not only to the value of cleanliness of the mouth from the health point of view, but also, I think, that there is personal advantage to the school-teacher working with a class of children whose mouths are clean. This attitude to tooth-brush drill, however, is far from universal amongst the teachers, as in some large districts this drill is practically non-existent. I believe that this is largely, if not altogether, because in these districts tooth-brush drill has not been given a trial. Some teachers, however, are obtaining excellent results by frequent inspections of the children's teeth and by urging them to use the tooth-brush regularly at home. Whatever method may be adopted it is of the utmost importance that school-teachers should recognize that the hygiene of the mouth—the inculcation of a "clean-mouth conscience"—is one of the primary essentials in the education of children.

Mental Deficiency.

A report on the work of this division would be incomplete without a reference to the subject of mental deficiency in children as having a far-reaching and extremely important bearing upon the social and economic welfare of the community. The present provisions for dealing with these feeble-minded cases is admittedly inadequate. A complete and far-seeing scheme is very much needed in the interests of our social economy. School medical officers report cases of mentally deficient children who are either partially or completely unable to derive benefit from attendance at ordinary schools, and who are frequently a source of trouble to school-teachers. Many such children if attending an ordinary school are of necessity more or less neglected by the teachers owing to the impossibility of giving them the individual attention which they particularly require: others are not capable of attending school at all. These children, according to the degree of their defectiveness, tend to become derelict, and later on disorganize the social machine. On the other hand, there is a growing concensus of opinion that a large number of the criminal, refractory, and inefficient members of society are the subject of inherent mental or moral defect.

In this connection one school medical officer writes: "With a population of one million the problem could, I think, be faced squarely and dealt with, but as the population increases it will get out of hand." Speaking of the expense that would be involved, the same officer in a previous report says: "By following up the histories of a group of feeble-minded children it can be shown that the expense is inevitable and is incurred less profitably later on. I have traced the fate at the end of two years of all the children who had left one of the large city schools two years previously on account of reaching the school age-limit without passing the second standard. They were all cases of feeble-mindedness of the upper or upper-middle grade. Only two of these children could not be traced. Of the rest, in the short space of two years nearly all the girls had found their way into rescue homes, and most of the boys were in reformatories or gaols. Of the few that remained some were doing very poor work, some were unemployed and unemployable, and were for the time being saved from coming on the State in a dishonourable capacity by their parents providing for them." Apart from the economic reasons for making systematic provision for these cases, it is well known that life in well-managed institutions, amongst their mental equals, with simple pleasures and suitable tasks, is far happier than the discordant lives that many of them lead in the world at present.

Special Investigations.

In view of the very large number of children passing through their hands, school medical officers have an exceptional opportunity to collect information of value in elucidating problems connected with the health and education of children. The large volume of work connected with their more regular duties, however, does not permit their devoting more than a limited amount of time to research of this kind. In this connection special reference must be made to experiments which are being carried on in the Canterbury and Wanganui Districts with regard to the treatment of goitre in school-children by the administration of very small doses of iodine. In one of these experiments a total of 596 children have been under treatment during the year, and observations have also been kept of 756 untreated children. So far the results are on the whole very encouraging; the experiments are proving well worth while, and should be continued. It may, however, be necessary to study the effects of the treatment for a number of years before any very decided pronouncement can be made as to permanent results.

SECTION 6.—MEDICAL EXAMINATION OF CANDIDATES FOR THE TEACHING PROFESSION.

In order that the medical examination of candidates for the teaching profession might be organized on a basis which would be more satisfactory to the Education service, it was decided last year that this work should be undertaken by the school medical staff. As a general scheme throughout the Dominion this was undertaken for the first time at the beginning of 1922. A uniform scheme of procedure and standard of examination has subsequently been evolved with a view to placing the matter on a basis best calculated to safeguard the service and give satisfaction to the candidates. One great advantage of having these examinations conducted by the school medical staff is that provision can be made for the examining officers to keep in touch with individual candidates after entering upon their career, and also that they are afforded the opportunity of advising these young teachers about their health and habits of life. In this connection a leaflet entitled "Health Hints for Entrants to the Teaching Profession," in which the main essentials of healthy living are briefly summarized, has been issued by the Department to the candidates examined. The present scheme, moreover, offers an opportunity for studying the standard of health of the teaching profession more systematically than would otherwise be possible.

It is indeed difficult in a few words to make any very definite statement with regard to the *standard of health and physique* of these candidates. As would naturally be expected in the case of young students—most of them in the early prime of life—their standard of health has appeared in the majority of instances to be of a relatively high order. Caution, however, should be observed in drawing conclusions from a too limited view of the matter. A truer estimate of the ultimate physical efficiency which is likely to result in these candidates over an average period of life-service in their profession can, I think, be arrived at by taking notice of the number and nature of their physical defects and the illnesses from which they have suffered in the past. It is well known, for instance, that some of the more serious diseases from the point of view of failure of health in adult life have their origin largely in common defects, such as dental caries, unhealthy tonsils, and so on, existing during the school-going years.

In connection with this matter one officer states: "Out of sixty candidates ten had, at one time or another, what might be called one of the more serious diseases—*i.e.*, appendicitis, typhoid, dysentery, pleurisy, septic glands, joint trouble, gastric ulcer, and pneumonia. The picture of universal dental decay—in some cases most extensive—is only what might be expected from the state of the teeth of the children in the primary schools. It is to be regretted that few of the candidates seemed to have any realization of the cause or need for prevention of this condition." This officer's findings may in some respects be exceptional, but it can certainly be said that in many of the cases the candidates' teeth have received satisfactory attention in the way of dental treatment. It should be mentioned, however, that many admitted only having recently obtained treatment in view of their candidature. It is indeed a matter for surprise that any candidate should think of coming up for examination with untreated dental caries.

The prevalence and extent of decay of the teeth in these candidates deserves further comment in view of the undoubted bearing which it has upon the health of the community in general; if such important organs as the teeth are deteriorating it cannot be otherwise but that, in some respects at any rate, the general health is deteriorating also. For instance, of seventy candidates examined in one centre and sixty in another not one had a complete naturally sound set of teeth. Estimating the total number of teeth which had been filled, extracted, or were actually carious, it was found that on an average there were eleven teeth in each mouth which showed evidence of past or present decay—that is 38 per cent.—well over one-third of the teeth in each mouth. This figure is necessarily an underestimation, as the examination is a rough one without the aid of a dental probe and mirror. The young men and women to whom these figures relate can, I think, be taken as at any rate not below the average standard of the masses of young people in the Dominion of the same age; they may, indeed, be above the average. Previous records of the extent of dental decay in primary-school children of all ages have shown that, omitting decay of the first set, there were on an average three decayed teeth of the second set in each mouth. By the age of eighteen years—the average age of the above candidates—this number had increased to eleven. The rapidly progressive nature of dental disease is thus graphically illustrated.

It should be added that this figure of eleven decayed teeth in each mouth at the age of eighteen years does not represent the whole of the decay which these individuals have suffered from since birth. Each child makes a fresh start from the dental point of view during the school-going period owing to the replacement of the first by the second set of teeth. In the majority extensive decay has taken place in the first set also.

An extremely important conclusion to be drawn from these facts is this: that if the same habits of living which have given rise in the case of these teachers to fairly extensive decay of nearly 40 per cent. of their teeth are to continue in the younger generations, there is no reasonable hope of ever being able to cope with the dental problem in this country. We are not keeping pace with it at present, and there is ample evidence that the prevalence of dental disease is increasing. Is it likely that this extensive disease of the teeth and the conditions causing it have not a serious influence upon the general health, and especially upon the future health, of the people? Can there be any more definite "writing on the wall" warning us to look to our diet and general habits of life?

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

PART VII.—DENTAL HYGIENE.

In connection with the work of my division I beg to submit a report for the year ending 31st March, 1922.

SECTION 1.—STAFF, ACCOMMODATION, AND EQUIPMENT.

Staff.

There are eight officers, allocated as follows: Mr. Dunn, supervising the training of the dental nurses; Mr. Peacock, assisting the Supervisor, and also doing the school-clinic work for Wellington District, assisted by the nurse trainees; two officers in the Auckland District; one officer at Nelson; one officer at Christchurch; one officer at Timaru; one officer at Dunedin.

I am pleased to be able to report favouraby on the staff as a whole. I would particularly emphasize the valuable service rendered by Mr. Dunn and his assistant (Mr. Peacock) in the training of the dental nurses.

The following is a summary of the operations performed and treatment carried out from the 31st March, 1921, to the 31st March, 1922: Fillings, 13,047; extractions, 14,939; other operations, 8,623: total, 36,609.

Besides the above, many children have been examined and teeth charted, duplicate charts being sent to parents, resulting in the treatment of many cases by private practitioners or at hospitals.

Accommodation.

Besides our present accommodation at the different clinics we have everything ready to start a clinic at Wanganui, and have been promised a room at Napier by the Education Board.

Motor Ambulances.

With regard to these, I have come to the conclusion that they are best suited for suburban districts, and consider they should be utilized solely for this purpose. This will make for greater economy as regards upkeep, and also, I hope, will enable us to dispense with the services of the driver-attendant, as I consider that arrangements might be made with the Post and Telegraph Department to supply a driver at odd times when required. Special arrangements will have to be made for the packing of equipment for country districts, and local bodies will be asked to assist the Department in providing transport and accommodation, those districts doing so to be given preference when dental service is available for such.

Equipment.

This is a matter that has been giving me considerable thought, for whilst we have been fortunate up to date in being able to secure equipment from the Defence Department, saved over from the Dental Corps, the supply is nearly run out, and we shall have to be in a position to equip the dental nurses early next year. I have been in communication with firms in England and America as to suitable travelling equipment for the above, but have delayed taking any definite action, as I felt sure prices would fall. This has been so, and from latest advices there is a possibility of a still further fall. I am awaiting a list of all dental material held at Defence stores, where they are at present stocktaking, before preparing a list of requirements that it will be necessary to secure from abroad.

Propaganda.

Leaflets have been printed and distributed to the staff for circulation to parents embodying short terse rules to be followed for the prevention of dental disease. Every opportunity is being taken by the Supervisor and his assistant and the nurses for talks with parents on the same subject, and there is every evidence that the information given is much appreciated. In conjunction with the Director of Child Welfare and the Director Division of School Hygiene I have assisted in the preparation of articles for newspapers. I would stress the importance of this branch of our work.

SECTION 2.—DENTAL NURSES.

If any of those who originally opposed the scheme of the provision of State dental nurses in this country still have doubts remaining in their minds I am sure a visit to the clinic would dispel such, for one cannot but be struck with the aptitude shown by the nurses after only two months' regular clinical work.

The first year's training of the thirty-one probationer dental nurses is now over, reports the Supervisor, Mr. Dunn, and the result has quite justified expectations. The greater part of the year was devoted to a thorough grounding in theoretical work—elementary chemistry and physics so far as they have a bearing on the study of human physiology; the elements of biology and histology; anatomy and physiology, with special reference to head, neck, jaws, and teeth; and materia medica suitable for a minor dental course. Towards the middle of the year purely dental matters were approached, and practice was given with the mirror and instruments on natural teeth set up in dummy jaws. In November some useful hygiene work was done for children under school age. Late in January Mr. H. M. Peacock joined the service, and the school was thus able to take over the work of the Thorndon clinic and to considerably extend it, at the same time releasing the dental officer for service elsewhere and dispensing with the attendant altogether. Since then the clinic has been so busy with the treatment of school-children that it has been only possible to carry on the lecture work intermittently. The figures for February and March will speak for themselves:—

1st February to 31st March, 1922.

Total number of attendances—	
Of school age	1,632
Under school age	227
	1,859
Number of children treated	1,061
Fillings in temporary teeth	231
Fillings in permanent teeth	444
Other conservative treatment (cases)	964
Extractions, temporary teeth	1,314
Extractions, permanent teeth	291
Total number of operations	3,244

The probationers have without exception shown great aptitude for the work, handling the children with both tenderness and skill, and the parents with tact; and, considering the drastic measures often necessary for clearing up neglected and septic mouths, inflicting a minimum of pain.

A beginning has been made with propaganda work among parents by the distribution of pamphlets at the clinic, and by the delivery of addresses to parents at some of the schools. Those of the nurses that show special aptitude are being utilized for this service, and those selected have shown much ability and tact in executing the task accorded to them. It is proposed to extend this branch of the work during the coming year.

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

PART VIII.—MAORI HYGIENE.

I have the honour to submit a brief annual report for the year ended 31st March, 1922.

SECTION 1.—NATIVE HEALTH.

Maori Health Councils.

The reorganization of the old Councils created under the Maori Councils Act, 1900, has been carried out. Under section 61 of the Health Act, 1920, the twenty existing Council districts become Maori health districts, and the Councils with their Village Committees are administered through the Department. As the duties of these bodies are those of the local authority amongst the Maori people, special attention has been paid to the sanitation of the settlements and the prevention of the spread of epidemics. Model by-laws have been drawn up and gazetted for each district. A large number of copies have been distributed to ensure that all members of the Council and Village Committees have a set. Some of the by-laws will be difficult to put into immediate operation, but they provide a standard and objective towards which Village Committees must aim. In this way they remedy the general character of the old by-laws, and give the committees the detail they so much require in various branches of sanitation. Copies with lists of Council members and Village Committees have also been made available to Medical Officers of Health, Inspectors, and Maori district nurses, in order that the Divisions of Public Hygiene and Maori Hygiene may co-operate and assist each other.

The reorganization of the Councils with their committees has entailed much travelling about and considerable correspondence through my office. Instructions *re* supervision of accounts, and a quarterly statement showing receipts and expenditure, returned to the division, has helped to improve the haphazard finances of the past. Questions and requests for advice and assistance come from all parts, and the answering of these in the Maori language is no unimportant means of improving health conditions. The co-ordination of our nurses and Inspectors throughout the country, combined with personal visits and advice from the office, is, I am convinced, resulting in a great amount of good to the health of the Maori. The Maoris at the present time, with few exceptions, are ready to carry out as far as they can the requests of the Department. We understand the Maori and he understands us, and thus a spirit of co-operation is established between the office of the Maori Hygiene Division and the Maoris throughout the country that has already proved an enormous factor in dealing with these people.

Native Health.

On the whole the health of the Maoris has been better than during the previous year. Typhoid fever broke out at Hauhora, Whangaroa, Bay of Plenty, and Levin districts, with odd cases in other parts. Though the mortality in the Levin cases was high owing to the obstruction to hospital treatment, we may say that the cases are becoming less, with a lower mortality. This is largely due to the work done by the Maori district nurses, combined with there being less obstruction by the Maoris to hospital treatment.

Typhoid Inoculation.

The preventive effect of anti-typhoid inoculation continues to be borne out by the reports from districts where it has been done and where previously typhoid was endemic. Our policy has been to treat settlements and districts where typhoid occurs or has occurred, as it is impossible to do the entire Maori population. During the year the Levin district, from the Manawatu River to Porirua, was done; also the Bay of Plenty, parts of the North Auckland Peninsula, and Taupo districts. Where so many cases of typhoid have occurred in the past there must be a certain number of typhoid carriers amongst the Maori people, and though sanitation and water-supply must be attended to, the system is incomplete without anti-typhoid inoculation. The Maoris are generally amenable to treatment except where they come under the influence of ignorant pakehas.

Tangis and Huis.

The conditions surrounding Maori gatherings have greatly improved. Where some years ago not the slightest attempt was made to provide latrine accommodation, it is now a recognized thing. The Council by-laws provide for this. I was greatly pleased with the large Maori gathering in the Bay of Islands to celebrate the anniversary of the signing of the Treaty of Waitangi. This was attended by over two thousand Maoris. Ample fly-proof latrine accommodation was provided for both sexes, and additional urinals. The washing-up water was conveyed by pipes from the washing-up sinks to covered-in pits which were provided with field grease-traps. The meat was stored in a roomy meat-house thoroughly ventilated by the sides being made of scrim. The waste food was emptied into receptacles, promptly collected after each meal, and conveyed on trollies running on rails to the pigsties placed at a safe distance, where it was effectively disposed of. During the whole gathering there was not the slightest sanitary fault to be found, and the organization would have done credit to any military camp. We find that the Maoris are ready to accept advice and assistance in their gatherings, and though some are slow to move, if the Department lays down the law it is accepted and carried out.

Maori Health Nurses.

These nurses continue to do good work, and are a great comfort to the people when typhoid is about. At some of the larger huis we have adopted the principle of getting the district nurse to attend with a few simple remedies in case any outbreaks should occur. There is no doubt that by the nurses visiting settlements and any rumoured or reported cases of sickness, typhoid is prevented from spreading through entire settlements as it once did, and many lives are saved.

SECTION 2.—MEDICAL ATTENDANCE AND SUPPLIES.

Subsidized Medical Officers.

These officers have been reduced in number. It is time that the Maori paid for his medical attention, and that the medical man took his chance of collecting bad debts from the Maori as well as the pakeha. In districts where subsidies were not given the natural adjustment took place long ago.

Medical Supplies.

These are still supplied to Native schools in moderation as regards quantity and variety. In isolated districts, distant from a medical man, stock medicines often tide patients over an anxious time, and the Native-school teachers have been ever ready to attend to the health of their settlements.

Propaganda.

This useful word expresses better than anything the attempt of the division to spread information round the districts. Pamphlets on various subjects have been circulated, besides circular instructions to Maori Councils. The supply of the model by-laws in a neat booklet form also helps in the work. In the Maori newspaper, *Toa Takitini*, printed at Hastings, we have commenced a monthly series of articles on epidemic diseases, where the precautions adopted by the Department of Health are detailed, and special reference made to the duties of the Maori Council as a local authority. It is to be hoped that the circulating in Maori homes may be productive of good in keeping them warned and supplied with up-to-date information.

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